

ADEN

City Profile



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Aden Steamer Point

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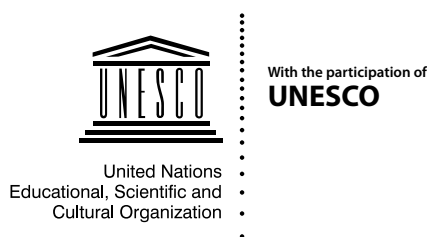
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ADEN

City Profile

Urban Profiling Yemen

This project is part of a Profiling Project that aims to develop city profiles of 7 cities in Yemen. These cities include Aden, Sana'a, Sa'ada, Taizz, Al Hudaydah, Al Hawtah and Zingibar. All profiles and data developed in this profile are accessible on the Yemen Mapping and Data Portal.

yemenportal.unhabitat.org/

Sa'ada
Sana'a
Al Hudaydah
Taizz
Zingibar
Al Hawtah
Aden



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Acronyms

ACT	Aden Container Terminal	MHM	Ministry of Housing and Municipalities
AFZ	Aden Free Zone	MTIT	Ministry of Telecommunications and Information Technology
AIA	Aden International Airport	MoE	Ministry of Education
AQAP	AL-Qaeda in Arabian Peninsula	MoHESR	Ministry of Higher Education and Scientific Research
AWA	Arab Women's Association	MoI	Ministry of Interior
ASR	Assisted Spontaneous Return	MoLA	Ministry of Local Administration
AWD	Acute Water Diarrhea	MoT	Ministry of Transportation
CAC Bank	Cooperative and Agricultural Credit Bank	MoTEVT	Ministry of Technical Education and Vocational Training
CBY	Central Bank of Yemen	MPWH	Ministry of Public Works and Highways
CEDAW	Convention on the Elimination of all Forms of Discrimination Against Women	MSF	Medicines Sans Frontiers
CCIF	City Cleansing and Improvement Funds	MPHP	Ministry of Public Health and Population
CFP	Community Focal Point	MWE	Ministry of Water and Environment
CRPD	Convention on the Rights of Persons with Disabilities	NDC	National Dialogue Conference
CSO	Central Statistics Organization	NGO	Non-Governmental Organization
DPW	Dubai Ports World	NNGO	National Non-Governmental Organization
EECR	Emergency Employment and Community Rehabilitation	NSSWM	National Strategy for Solid Waste Management
ERC	Emirates Red Crescent	NWRA	National Water Resources Authority
EU	European Union	NWSA	National Water and Sanitation Authority
FGD	Focus Groups Discussion	NWSSIP	National Water Sector Strategy and Investment Program
GBV	Gender-Based Violence	PCDP	Port Cities Development Program
GCC	Gulf Cooperation Council	PDRY	People's Democratic Republic of Yemen
GDP	Gross Domestic Products	PEC	Public Electricity Corporation
GIS	Geographic Information System	PiN	People in Need
GOAM	General Organization of Antiquities and Museums	RDT	Rapid Displacement Tracking
GOPHCY	General Organization for the Preservation of Historic Cities in Yemen	RRM	Rapid Response Mechanism
GoY	Government of Yemen	SFD	Social Fund for Development
GPC	General People's Congress	STC	Southern Transitional Council
GPS	Global Positioning System	SWM	Solid Waste Management
GRT	Gross Registered Tonnage	TFPM	Task Force for Population Movement
HCB	Housing Credit Bank	UAE	United Arab Emirates
HF	Health Facility	UN	United Nations
HLP	Housing, Land and Property	UNESCO	United Nations Educational, Scientific and Cultural Organization
HNO	Humanitarian Needs Overview	UNHCR	United Nations High Commissioner for Refugees
ICT	Information and Communications Technology	UNOCHA	United Nations Organization for Coordination of Humanitarian Affairs
IDPs	Internally Displaced Persons	UNOPS	United Nations Office for Project Services United Nations Office for Project Services
ILO	International Labor Organization	UNICEF	United Nations Children's Fund
INGO	International Non-Governmental Organization	USAID	United States Agency for International Development
IOM	International Organization for Migration	WASH	Water, Sanitation, and Hygiene
IRG	Internationally Recognized Government	WFP	World Food Program
ISIL-YP	Islamic State of Iraq and Levant – Yemen Province	WHO	World Health Organization
IT	Information and Technology	WSS	Water Supply and Sanitation
JRC	Joint Research Center	WWTP	Wastewater Treatment plant
KI	Key Informant	YAR	Yemeni Arab Republic
KSA	Kingdom of Saudi Arabia	YER	Yemeni Rial (currency)
LAEO	Literacy and Adult Education Organization	YSP	Yemeni Socialist Party
LAL	Local Authority Law		
LC	Local Councils		
LNG	Liquefied Natural Gas		
MAI	Ministry of Agriculture and Irrigation		
MCHUP	Ministry of Construction, Housing and Urban Planning		
MCLA	Multi-Cluster Location Assessment		
MFW	Ministry of Fish Wealth		

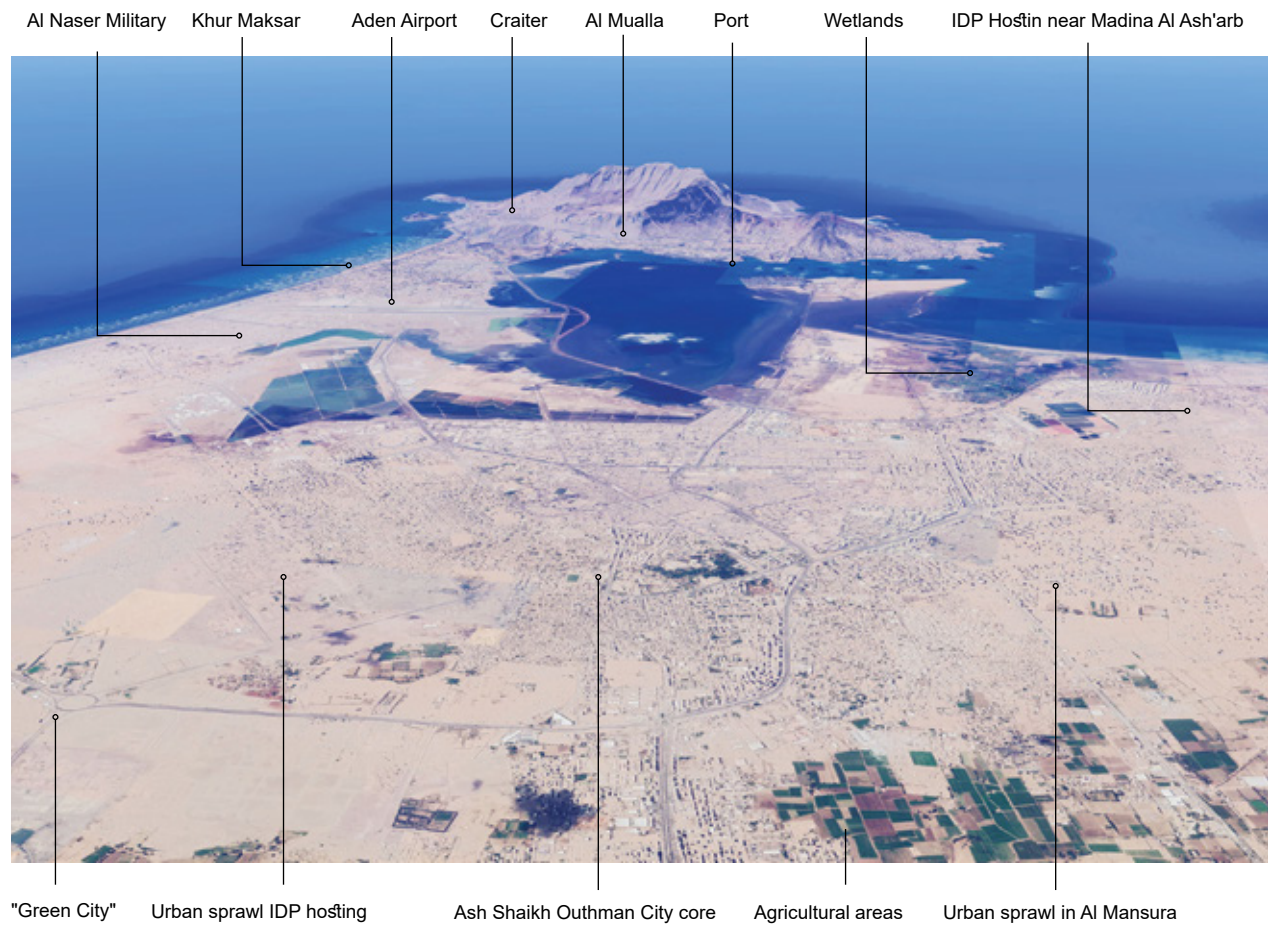
Executive Summary

Aden is the largest city of southern Yemen. It is also the administrative centre of the Aden governorate. At the time of writing, Aden was the internationally recognized capital of Yemen and recent developments regarding efforts to separate Aden as an independent city in Yemen have not been incorporated in the analysis. This profile describes and analyses the situation in the city of Aden across a variety of sectors. It addresses key themes and findings made prominent by the impact of the ongoing conflict, its toll on the city's population, and ability of institutions to provide basic services. Each thematic section study the prevailing situation and needs through triangulation of data, including: secondary data analysis which draws on available publications and media reports; remote sensing; and structured interviews with community focal points (CFP) and sector experts (see section 2: Methodology). The aim of the profile is to provide humanitarian partners with a granular understanding of multi-sector needs in Aden, assisting them in their operational programming and strategic policy development.

Key findings include:

- The conflict had a negative effect on social cohesion between various social groups.** Social and political divisions exist between communities, Internally Displaced Persons (IDPs), migrants, and refugees across the city. Now, tribal affiliations, historically not a determining factor for political engagement in Aden, are reasserted.
- In the face of uncertain political changes at the top, local councils could become an important entry point for engagement with local government.** Local councils are instrumental in coordinating humanitarian aid and responsible for providing basic services to their districts' electorate. However, their ability to provide services has been severely undermined by insufficient funding, lack of trained personnel, and interference from various political interests and agendas.
- Cultural heritage is under threat, but not just from the conflict.** United Nations Educational, Scientific and Cultural Organization (UNESCO)'s field assessment showed that many cultural heritage sites have suffered some degree of damages from conflict, but also due to longstanding neglect. The ability to mount reconstruction work and conservation without assistance is low, and a comprehensive management strategy is required that covers not only landmarks, but also historical districts as a whole.
- The economic infrastructure in Aden is both its lifeline and a target.** Aden's economy is centered on port facilities, shipping, and industry but in need of substantial investments to continue operations at full capacity. The port facilities are capable to sustain massive amount of humanitarian aid deliveries necessary to offset the impact of losses received from the decline of traditional economies, as well as support a growing population with IDPs, African migrants, refugees, and conflict returnees.
- Aden is in need for housing, and fast.** Both the large influx of IDPs and longstanding planning challenges could become vectors for tensions in the near future. The rise of informal settlements could lead to tensions between land owners and users, and pressure on the rental market will likely lead to unaffordable rents for lower income groups. Both could lead forced evictions. While the authorities have made efforts to regulate urban planning processes that could help address the issue, the legal framework has always suffered from a clear assignment of mandates, making it difficult to implement coherent urban development and management strategies. Furthermore, neighbourhoods in the vicinity of key military sites have been hit hard and are in need of rehabilitation.
- The deterioration of basic services continues to pose health problems, and to hinder the (economic) recovery of the city.** Public services and facilities across every sector have been severely affected during the crisis. Damages to the electric grid and street lightening infrastructure is reported throughout the city, as is evident in the 50% drop in nightlight activity in 2015. Likewise, healthcare services struggle to meet the demand of the (increased) population. Emergency and major surgery services are neither available nor accessible in more than half of the districts. Similarly, water, sanitation and health services have declined: in half of the districts, garbage is not collected, and most areas of the city have constant sewage problems, leading to an increased threat of health-related issues.
- Aden has become increasingly disconnected during the crisis.** Limited communications services are available across the city, and in 6 out of 8 districts network coverage is unavailable or bad. Aden is connected to the rest of Yemen by a limited amount of key economic corridors, the accessibility of which is affected greatly by political dynamics. Furthermore, its road networks are either fully or partially damaged in all districts, and rehabilitation of the transportation sector requires immediate funding and interventions.

Figure 1: Aerial photo of Aden



Source: Google Earth (2019)

Context

Aden is a city and major sea port in the Aden governorate in southern Yemen. Situated approximately 170 km east of the strait of Bab Al Mandeb, which connects the Gulf of Aden to the Red Sea, it overlooks Somalia across the Arabian Sea. Aden possesses one of the world's largest natural harbors, with a naturally deep and protected port that allows for the docking of large oil tankers.¹ Its strategic position, just six kilometers from the main East - West shipping routes, have historically made the city an important node in trading networks.

For centuries, Aden represented the economic capital of Yemen as the principal passageway for commerce between Europe, East Africa, the Arabian Peninsula, and East Asia. Local lore describes the city as "the eye of Yemen and the key to the Red Sea and the treasury of India." Indeed, ancient Roman and Greek merchants linked the Mediterranean basin, through Aden, to the Indian Ocean into a trading network, buying and selling metals, wine, spices, gold, cloth, precious stones, silks, ivory, and exotic aromatic flowers. Although, the importance of Aden as a maritime node waxed and waned through the Ottoman, Portuguese, and the local powerhouse Sultanate of Lahj, its strategic significance increased exponentially with the opening of the Suez Canal in 1869. From that point onward, it became one of the busiest refueling stations in the world, a global transit point, and a major regional transportation hub.

In the 1950s, the port of Aden was the second busiest harbor in the world, after New York, serving as an important oil storage and refueling station for tankers passing through the Suez Canal.² With the closure of the Suez Canal from 1967 to 1975, due to the Six Day Arab-Israeli war, the port's activity significantly declined.

After 1967, Aden served as the political capital of the People's Democratic Republic of Yemen (PDRY) (or 'South Yemen') until unification with the Yemen Arab Republic (YAR) (or 'North Yemen') in 1990.³ Following the unification of Yemen in 1990, and the selection of Sana'a as the new national capital, Aden lost much of its advantage as the political and economic hub of south Yemen. To offset that loss and maximize its commercial advantage and trading potential, Aden was declared a free trade zone (AFZ). Despite the fractious political infighting of the mid-1990s, the government remained committed to upgrading the city's infrastructure. With foreign assistance, the Aden Container Terminal (ACT) was opened in March 1999, adding to the already existing industrial complexes centered on oil refineries operational since 1954. This dramatically increased the volume of transshipped goods between 1997 and 2001 by 28-fold. The new ACT was followed by a major renovation of the Aden International Airport (AIA) in the Khur Maksar district that included a new runway, terminal, and a control tower, all concluded by 2001.

Figure 2: Geographic Location of Aden Governorate within Yemen



Aden City, Date Created: 24 Nov 2019, Datum/Projection: WGS_84, Data sources: OCHA

Disclaimer: The boundaries, names and designations used in this map do not imply official endorsement or acceptance by IIMAP. Numbers reflected on the map show verified locations on the ground, compared to JRC damage data.

¹ World Bank, Aden: Commercial Capital of Yemen, Local Economic Development Strategy, January 2012, <https://openknowledge.worldbank.org/bitstream/handle/10986/12565/687890ESW0P077075230AdenOCDS0090908.pdf?sequence=1&isAllowed=y> on 05/05/2019.

² Laurent Bonnefoy, Le Yemen: de l'Arabie heureuse à la guerre (Paris: Fayard/CERI, June 28, 2018).

³ Anne-Linda Mira Augustin, "Spaces in the Making: Peripheralization and Spatial Injustice in the Making of South Yemen," 2015, <https://meta-journal.net/article/view/3526> on 26/05/2019.

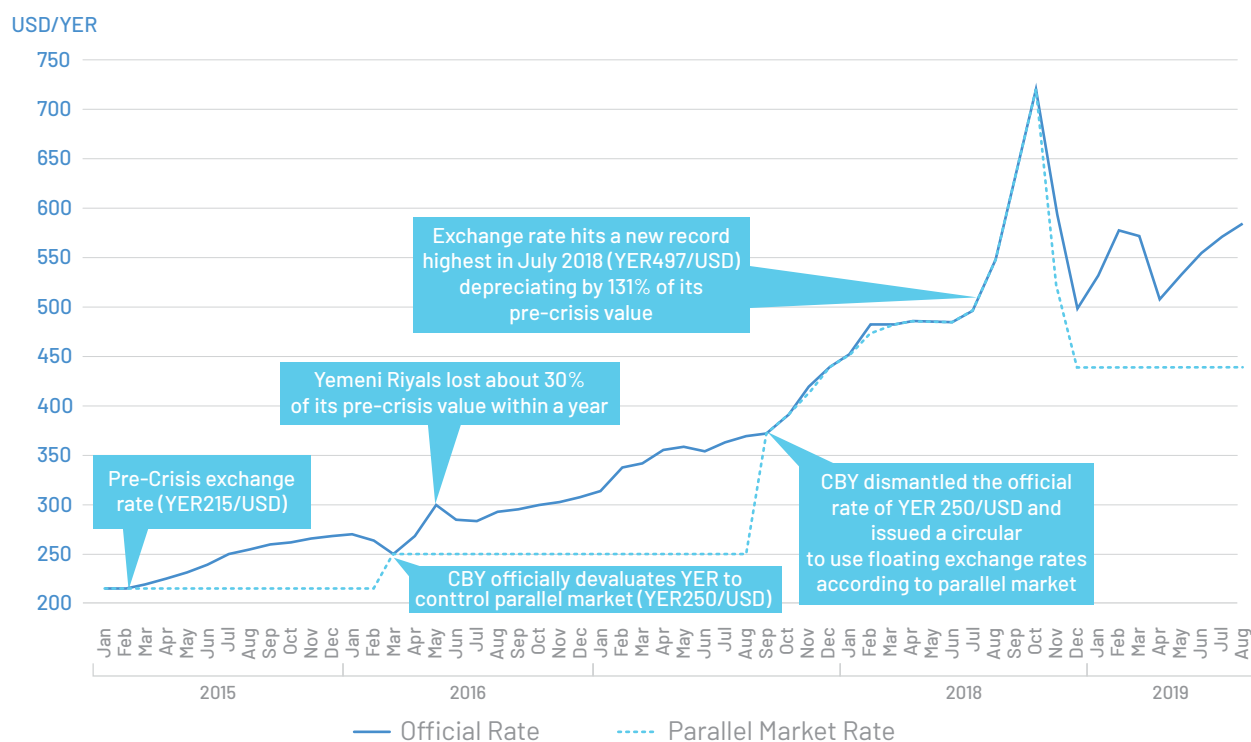
Further growth, however, was limited by an underdeveloped infrastructure, administrative fragmentation, lack of infrastructural planning, and an absence of a single and coherent vision for the city's future. Since the eruption of the first Civil War of 1994, Aden has been plagued by rampant political instability resulting, for the most part, from disagreements over political power-sharing. This has inflicted a heavy toll on the local infrastructure, economy, and services. Roads have been heavily damaged and power outages occurred for nine or more hours a day. Unemployment, fueled by increasing numbers of IDPs, decline of remittances, refugees from war-torn neighboring governorates, and African migrants, remains a major concern for local authorities. So is the growing poverty, poor maintenance of infrastructure and utility networks, inadequate funding for social and economic programs, and the like.

Despite such limitations, Aden's status as AFZ and "temporary" capital of Yemen, its modern facilities, a relatively well-educated and plentiful labor force, and tourism potential underscore the city's attractiveness to both national and international investors. Capitalizing on these reputed strengths, the World Bank in January 2003 launched a 12-year-long, \$96 million Port Cities Development Program (PCDP) for Aden, Al Hudaydah, and Al Mukalla. The program's objective was to bring together government officials, local councilors, businesses and investors, and civic leaders with the intent to marshal resources and develop the potential of strategic port cities in Yemen as engines of national economic growth.

The unpredictability and fluidity of conflict dynamics in Yemen, however, makes the long-term sustainability of such ventures risky. In 2011, against the backdrop of the Arab Spring, Yemen, too, experienced a revolution of its own against the rule of President Ali Abdullah Saleh. Soon thereafter, a deal brokered by the Gulf Cooperation Council (GCC) granted Saleh immunity and transferred power to his long-serving Vice-President Abdrabbuh Mansour Hadi. Under the aegis of the GCC and with United Nations (UN) approval, a National Dialogue Conference (NDC) in January 2014, the GCC sought the peaceful transition of power in Yemen supported by a constitution-drafting process. In 2014, however, the deal fell through and the conflict escalated between the different opposition groups over the same power-sharing arrangements as in the recent past. In January 2015, these tensions erupted into a second Civil War.

Since 2015, even areas located at a relatively safe distance from the frontlines have experienced a marked increase of armed conflict. This has changed the priorities of the international stakeholders in Yemen from building institutional resiliencies to purely humanitarian assistance. For instance, after 2011, the World Bank considered the chances to successfully implement the PCDP unlikely. Owing to the intensification of the conflict, rising prices for local goods, works, and services, and the government's decision to revise PCDP terms, donor agencies either delayed or altogether cancelled constituent projects' grants.⁴ Since then, Yemeni Rial (YER) has lost more than 130% of its value, leading the World Bank to declare that the recent conflict "has created a 'war economy' where fiscal and monetary policy are dominated by short-term considerations aimed at holding fragile coalitions together."⁵

Figure 3: Yemeni rial exchange rate over time



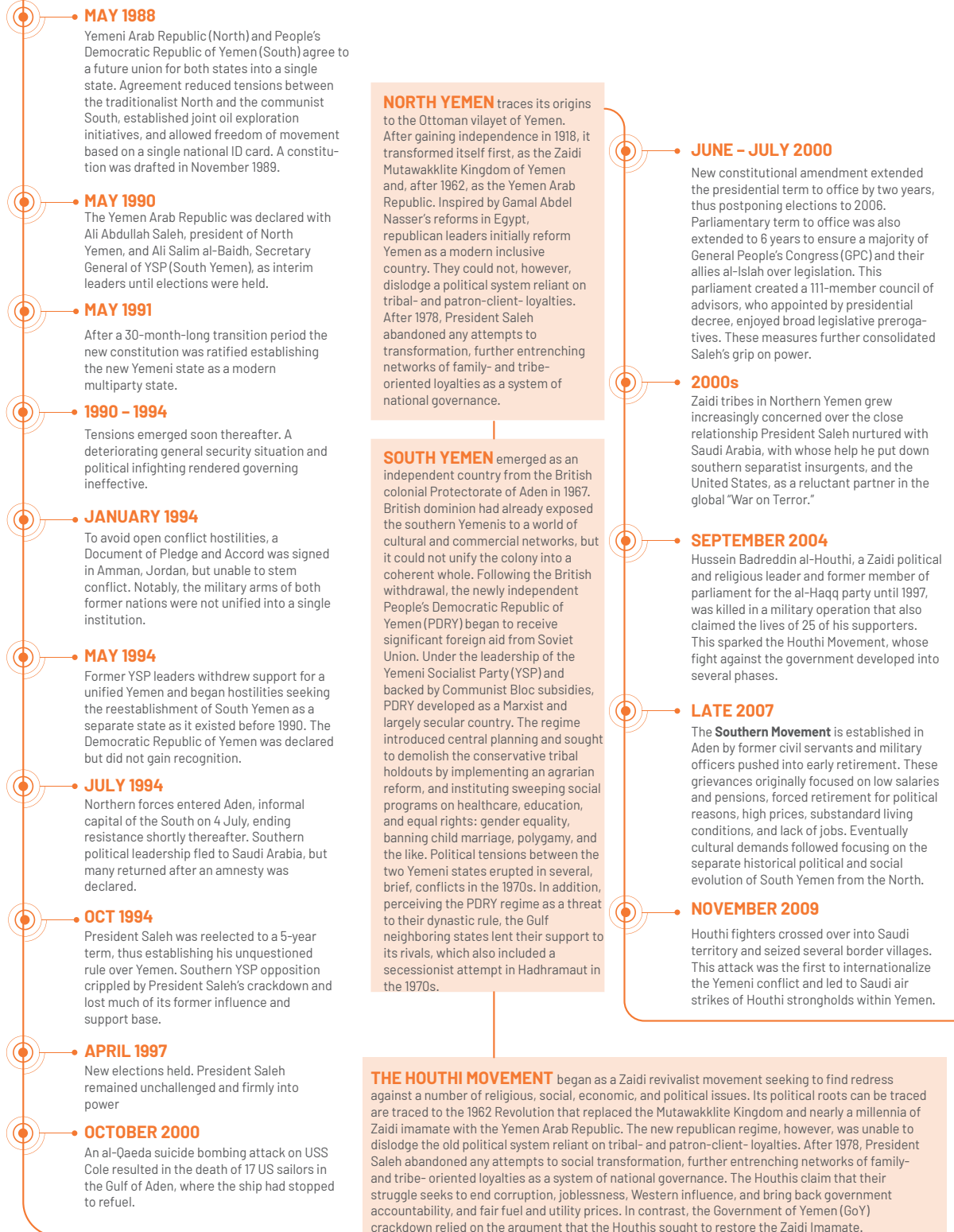
Source: WFP, Yemen Market Watch Report, Issue No. 38, (July and August 2019), <https://fscluster.org/yemen/document/wfp-market-watch-report-issue-no38-july>

4 World Bank, Second Port Cities Development Project, <http://projects.worldbank.org/P088435/second-port-cities-development-project?lang=en>

5 World Bank, Yemen's Economic Update, April 2019, <http://pub-docs.worldbank.org/en/365711553672401737/Yemen-MEU-April-2019-Eng.pdf>.

Figure 4: Conflict Timeline

ADEN WITHIN YEMEN CONTEXTUAL TIMELINE OF CONFLICT



JANUARY 2011

Within the broader context of the **Arab Spring**, Yemen erupted into demonstrations protesting unemployment, economic conditions, corruption, and demanding President Saleh's resignation. Eventually, the range of demands grew to include the uneven literacy rates and social disparities among women and men, women's health, maternal mortality, and child marriage. Under pressure, Saleh declared he would not run again for President at the end of his term in 2013.

APRIL 2011

Faced with mounting domestic pressure, Saleh agreed to step down provided he received immunity from prosecution. Vice President **Abdrabbuh Mansur Hadi** appointed as successor.

Ansar al-Sharia was established in Yemen as an umbrella organization of various extremist groups, nominally under the purview of al-Qaeda in the Arabian Peninsula – **AQAP**

JUNE 2011

Saleh survived an assassination attempt, which, however, killed four and injured scores more. Evacuated to Saudi Arabia and then the USA for treatment, Hadi takes over the government as acting President.

FEBRUARY 2012

Saleh formally cedes power to Hadi but retains the allegiance of loyalists within the military and forms an alliance with the **Hashid tribal federation**.

MARCH 2013 – JANUARY 2014

National Dialogue Conference begins to oversee the transition of power from Saleh to Hadi. Although there is wide agreement, it fails to find implementation.

JULY 2014

Government announces an increase on fuel prices to ease pressure on the budget. The measure is used as a pretext by the Houthis to launch a massive rebellion.

SEPTEMBER 2014

A Houthi – Saleh alliance captures Sana'a and pushes further south. President Hadi transfers national institutions to Aden, which becomes in early 2015 the interim capital of Yemen.

JANUARY – AUGUST 2015

Faced by an ineffectual national army, the Houthis launch their southward offensive, overtaking the Lahej, Dhale, Aden and Taiz governorates. Hadi flees to Saudi Arabia.

9 MARCH 2015

The Battle of Aden Airport broke out when Yemen Army units loyal to former President Ali Abdullah Saleh attacked and seized the airport defended by forces supporting President Hadi

26 MARCH 2015

A Western-backed Saudi-led coalition of throws its support behind Hadi's national government and begins airstrikes targeting Houthi forces and strongholds in Yemen.

APRIL – AUGUST 2015

Houthis are repelled from the South:

- In Lahej and al-Dhale, pro-secessionist Southern Movement militias, billing themselves as the **Southern Resistance**, score unaided successes against the Houthis
- In Aden, a combination of pro-secessionist militias, local citizenry, national army, and GCC coalition warships defeats the Houthis.
- In Abyan, an informal alliance between the national army, local militias, and AQAP forces expel the Houthis from the governorate.

DECEMBER 2015

Given the military strength of the Southern Resistance, President Hadi struck an alliance with the Southern Resistance and appoints Aidarus al-Zoubaidi, governor of Aden

AUGUST 2016

President Hadi's administration requests that all international financial institutions deny to the Central Bank of Yemen access to cash reserves, claiming that the bank had diverted \$4 billion in state funds to Ansar Allah and its allies. International financial institutions oblige, resulting in a cash liquidity crisis, high inflation, and the suspension of public sector salaries.

SEPTEMBER 2016

The CBY is relocated from Sana'a to Aden to deprive Ansar Allah access to financial capital and so paralyze economically the areas under their control. However, as neither personnel nor capital are transferred to Aden, the bank is hamstrung by lack of institutional capacity, human resources, information archives, and financial reserves.

APRIL 2017

Hadi fires Zoubaidi who, then, establishes the **Southern Transitional Council**, a political and paramilitary pro-secessionist group.

AUGUST 2017

International press and humanitarian organizations hold the Saudi-led blockade of Yemeni port cities directly responsible for exacerbating the humanitarian crisis in Yemen. By November, humanitarian NGOs estimate that 85,000 children under the age of 5 had died of starvation, while a cholera outbreak affected 1 million people.

NOVEMBER 2017

Saleh – Houthi alliance breaks down leading to clashes in Sana'a. Houthis emerge victorious and Saleh is killed while attempting to flee for Marib.

JANUARY 2018

Southern Transitional Council (STC) launches a **coup d'état** against President Hadi's government and takes over Aden. The GCC coalition intervenes, forces a ceasefire, whereupon Aden is divided into spheres of influence.

JULY 2019

United Arab Emirates (UAE) declares plan to reduce military presence in Yemen and transfer defense obligations in Aden to its local allies.

AUGUST 2019

Fights, Riyadh agreement and STC declaration of autonomous state.

1 Conflict Dynamics– Aden within Yemen

1. Summary

Since 2015, Yemen has suffered through three separate but interlinked confrontations. First, the ongoing current conflict between the Houthis and the Internationally Recognized Government (IRG) in Aden. Second, the tensions between the IRG and the Southern Movement, an organization that advocates for South Yemen independence, now led by the STC. Third, a campaign to uproot AQAP and the Islamic State of Iraq and the Levant – Yemen Province (ISIL-YP) from their holdings primarily in southern Shabwah, Al Bayda, Hadhramaut, Abyan and Aden governorates.

2. Key Players

The North – South rivalry has opened a door for the intervention of other non-Yemeni, both state- and non-state, actors, that have simultaneously internationalized conflict dynamics beyond national borders and further fragmented them into patron-client relationships. First, in the wake of the 2011 Yemeni Revolution that ousted President Saleh from power, Ansar al-Sharia was established in Yemen as an umbrella organization of various extremist groups broadly under AQAP.⁶ It was followed in 2014 by the establishment of the ISIL-YP in November 2014. These groups have intermittently carried out operations in Aden and its environs. These include the AQAP attack on the Gold Mohur Hotel in 1992, the bombing of the USS Cole in 2000, and several ISIL-YP's suicide bombing attacks in Aden that killed 15 people in October 2015 and the governor of the city two months later in December.

Second, the ongoing conflict prompted the countries of the GCC to stage an intervention in support of the IRG. This intervention brought in a myriad of new agendas into the fold, e.g. Iran is said to provide some support to the Houthis, while officially a member within the GCC coalition aligned to the Hadi national government, the UAE has lent much of its support to Hadi's opposition – a broad front of South Yemen sympathizers (Southern Resistance) that in 2017 coalesced loosely under the STC umbrella.

Since February 2015, Aden experienced two major outbursts of violence. The first Battle of Aden waged for the control of the city between the Houthis and the Yemen army, including a series of militia forces supporting either one. It began in March 2015 with a Houthi assault on Aden's International Airport in the Khur Maksar district during their push southward following the government's decision to relocate national institutions from Sana'a to Aden. Despite initial successes, a coalition of pro-government forces, pro-secessionist militias, and local citizens, backed by coalition airstrikes succeeded in gradually clearing Aden by mid-July.

Subsequently, the frontlines shifted north toward Taizz and Al Hudaydah, where they remain. Particularly worrisome was the sudden but brief reappearance of AQAP and ISIL-YP in the Ash Shaikh Outhman, Al Mualla, and Craiter districts.⁷ Such attacks continue sporadically.

Tensions erupted again in late January 2018, South Yemen independence sympathizers and the IRG but were short-lived. Conflict frontlines have remained remarkably stable ever since the 2015. Fighting for control over isolated or strategic pockets, however, continues. Otherwise, the conflict appears to have retreated into a low-intensity stalemate with belligerents preferring to consolidate parallel government structures into areas they already possess. Notable flareups and exceptions to this rule include the STC coup against the IRG in January 2018 and the Gulf coalition-led Yemeni push against the Houthis in Battle of Al Hudaydah in 2018 both ending in ceasefires.

In July 2019, UAE has announced that it will reduce the number of its forces in Yemen. The next month the Houthis launched an attack on a military parade hosted at Al Jalaa Military Camp in Al Buraieqeh killing 40 soldiers; considering that Aden is a foothold for local military forces armed and financed by the Emiratis, a move to demonstrate their strength and increased military capabilities as experts said.⁸

Renewed clashes between the southern separatist and presidential protection forces have followed for few days, resulting into southern separatists taking control of the presidential palace and government army's camps, and Security Belt forces taking control of various parts of Aden. On August 10, the Kingdom of Saudi Arabia (KSA) called for an immediate ceasefire in Aden and demanded the leaders of STC to withdraw their forces who agreed to adhere to the ceasefire. This illustrates the complexity of the Yemen conflict, as STC and Government forces share the Houthis as a common enemy, however they have different agendas for the future of Yemen limits their ability to cooperate.⁹

6 Ali Soufan, "I Will Die in Yemen: A Former FBI Agent Reflects on the Convoluted Legacy of the Late Ali Abdullah Saleh," The Atlantic, December 2017, <https://www.theatlantic.com/international/archive/2017/12/yemen-saleh-al-qaeda-houthi-saudi-arabia-iran/547487/>

7 Al Arabiya, "Gunmen kill senior Yemen police officer in Aden", April 29, 2016, <http://english.alarabiya.net/en/News/middle-east/2016/04/29/Gunmen-kill-senior-Yemen-police-officer-in-Aden.html>; <https://www.reuters.com/article/us-yemen-security-attack-idUSKBN0UJ1GH20160105>

8 Intelyse, May 30, 2020.

9 Ibid.

3. UAE Network

The UAE has become the main support node for the secessionist movement. It supports a far-flung network, which includes Salafist groups, the Security Belt paramilitary units that largely supplement national police and military as forces of law and order in Aden, Lahj, and Abyan; and, in collaboration with local governors, the Elite Forces in Shabwah and Hadhramaut. It has also lent support to private armies, Salafist tribal militias as well as to the IRG security forces, which also include neutral militias.

. What UAE has been involved in: First, fight the Houthis, AQAP, and ISIL-YP through training, funding, arming, and strengthening local proxy armies, sympathetic independent groups and tribal networks. Second, enabling the UAE to become a major regional player comparable to, or ideally more influential than, the KSA.

In this context, the UAE's preference for the southern cause is neither ideological nor tactical, but strategic. Hadi's KSA-backed military of Yemen possesses some 100,000 soldiers but virtually all are unpaid and poorly trained.

In Aden, Abyan, and Lahj, the Security Belt is a paramilitary force that performs both military and police tasks. They are deployed as needed, combating AQAP, ISIL-YP, and Houthis. It is unclear how much direct control the STC exercises among the many Yemeni militias. It is more accurate to say that their interests are aligned. Loyalties on the ground change rapidly. Generally, current military flag officers that have come up the ranks since President Saleh's period are IRG loyalists. Close personal contacts and/or kinship ties to President Hadi and members of his government are frequently major factor dictating the loyalties of many secessionists' militia leaders.¹⁰

Through such alliances, the UAE has established control across southern Yemen. Although President Hadi has repeatedly disavowed these parallel security forces. Tensions between Hadi and the UAE reached a boiling point when the latter unilaterally took over the Socotra governorate in May 2018. Within Aden, however, the strength and authority of seemingly competing foci of power has created multiple overlaps that make it difficult to assess their independence.

4. The Southern Transitional Council (STC) Profile

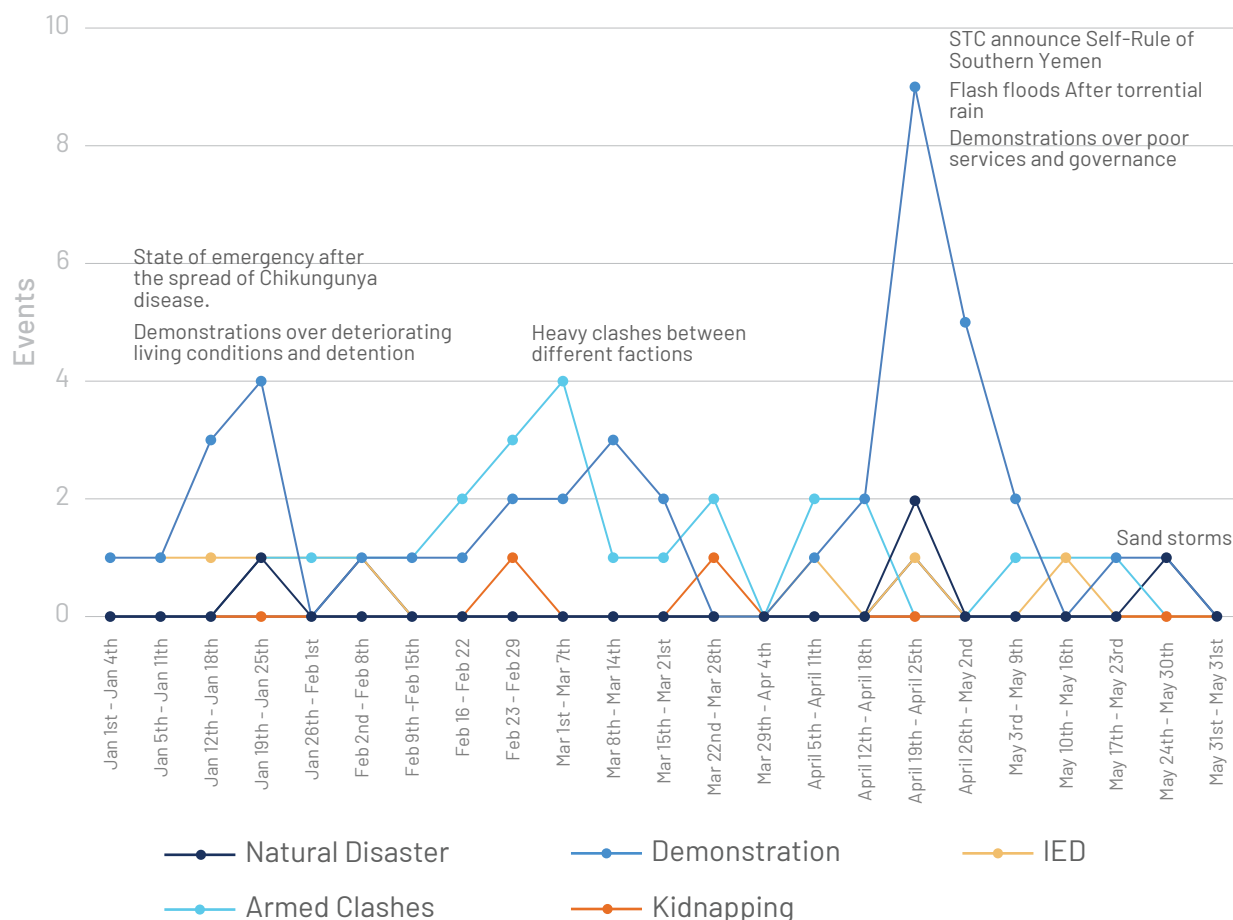
The STC is a paramilitary political organization that emerged in 2017. It is an umbrella political organization of the Southern Movement channeling a broad ideological coalition front whose goal is an independent Southern Yemen. The STC traces its beginnings to a few cell-like structures in the Al Dhale'e and Lahj governorates which launched the Southern Resistance against the Houthi-Saleh alliance in 2012-14. Since then, the military prowess of its leaders in successfully fighting back Houthis and advocating Southern independence, provided these Al Dhale'e and Lahj militias with many more recruits and field experience. In the process, they became some of the most cohesive militias and earned the respect of many southern Yemenis and the UAE.

In the first half of 2018, the STC's presidential commission consisted of 26 members. Within this number there are two government ministers (transportation and communications); five governors (Hadhramaut, Lahj, Aden, Socotra and Shabwah) and an array of parliamentarians, economists, lawyers, and social activists. Three of their number were women.

¹⁰ Peter Salisbury, *Yemen's Powder Keg* (London: Chatham House, 2018), 16-17.

5. Recent Developments

Figure 5: Safety and Security Events in 2020



Source: Intelyse, May 31, 2020.

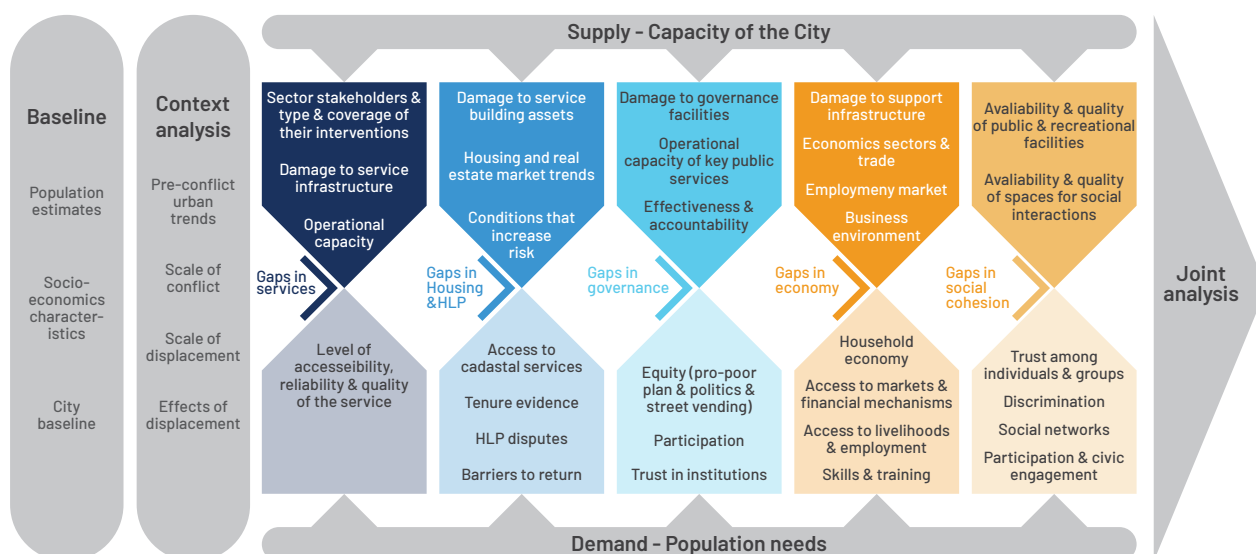
Year 2020 witnessed less events by 20% for the same period in 2019, as shown in the graph and the most important events highlighted below:

On 26 April, the STC declared a state of emergency and declared it would “self-govern” Aden and other southern provinces under their control. The Saudi-led coalition has warned against this move followed the Hadi government’s criticism of the STC failing to implement the Riyadh agreement signed by the STC and government forces; to bring both sides under the same umbrella in November 2019.¹¹ This could mark the end of the Riyadh agreement, reopen the southern front and lead to an escalation in fighting.

On the other hand, renewed clashes in the south pose a threat to Saudi Arabia’s unilateral ceasefire in Yemen aimed at preventing the spread of COVID-19 across Yemen. The ceasefire could have provided an opportunity for Saudi Arabia to extract itself from the Yemeni civil war, however, these latest developments could further entangle the kingdom into the conflict.

11 Intelyse, Yemen Threat Assessment, April 16-19, 2020.

Figure 6: Analytical Framework



Data Compilation

This urban profile describes and analyzes the situation in the city of Aden in Yemen across a variety of sectors. Using an **area-based** approach, each individual section paints a separate picture through the latest available data. These are then synthesized to provide the most up-to-date holistic information backed by contextual information and analysis. The aim of the profile is twofold. First, it provides partners with the widest possible canvas to support future rehabilitation plans and prioritization of investments. Second, it assists them in their operational programming and strategic policy development. Urban profiling rests on different sets of elements and pillars, which jointly provide an integrated analysis that assess the city's capacities as well as its population's needs. The main elements of urban profiling – in **bold** – are discussed below.

- 1. Secondary Data Review** Secondary data draws on available publications and media to create a **context-specific** background of information on pre- and post- conflict trends and baselines, against which the full array of primary data is weighed. This provides a better understanding of focal events in the city's own history, thus allowing the triangulation of analysis with primary data results.
- 2. Primary Data Collection** Background contextual evidence and area analysis are insufficient material that do not fully capture individual and community experiences. Therefore, a series of structured interviews were conducted in Aden between May and June 2019 with different stakeholders from a variety of fields to obtain both **intersectoral** and **people-centered** data.

Figure 7: Data Collection tools



• Sector Experts/ Key Informants (KIs)

Fifty current or retired government officials, professionals, business leaders, Non-Governmental Organizations (NGOs) staff, economic stakeholders were identified and selected as key informants because of their practical experience and knowledge of the city. [Intersectoral](#) interviews were conducted focusing on education, healthcare, access to services, housing, the city's infrastructure, safety and security, and the like.

• Community Focal Points (CFPs)

Fifty community leaders and elders were identified and selected for interviews because of their long-standing ties to and knowledge of their community needs. Themselves residents representing a geographically distinct locality – a block, neighborhood, or a district – the CFPs are ideally suited to provide accurate, [people-centered](#), answers about their community needs, as well as about the quality, availability, and accessibility to basic services. To ensure the widest possible city-wide coverage, the selected CFPs are those who represent the largest number of the HHs and enjoy ties to the city's government.

• Focus Groups Discussion (FGD)

Four unstructured focus group discussions were held, with an average of 17 residents of Aden per group. The discussions sought to obtain answers that touch upon everyday life and individual experiences across the seven pillars.

• Asset Verification

Observational data was collected on a variety of municipal public assets, like facilities, roads, schools, hospitals and the like. The primary objective is to gather information and quantify the degree of damage that asset has suffered and assess its operational capacity. Sectors include governance; Water, Sanitation, and Hygiene (WASH); solid waste management, energy, health, education, communications, cultural heritage and transportation.

3. Remote Sensing

Satellite imagery provides accurate assessment of the degree of physical damage inflicted on infrastructure and services, comparing pre-crisis to current imagery. Definitions of damage categories are defined by the Joint Research Center (JRC). The Geographic Information System (GIS) tools provided a comparative pre- and post- conflict analysis on land use classification and damage assessments per district.

Field images of demolished or damaged buildings were compared with satellite images by utilizing geographic coordinates taken in the field using the Global Positioning System (GPS) Explorer application installed on mobile devices, which were later office-based corrected using Google Earth. After that, buildings were assessed more accurately through field images according to the JRC classification.

The field team faced many difficulties despite obtaining the necessary permits for asset verification from the local authorities in the city due to the armed struggle for power taking place in the city prior to asset verification, as some armed forces controlling the government services buildings did not comply with directives of the local authority leadership asking to facilitate the survey and verification.

In some cases, the interpretation is straightforward, and the risk of error is extremely low (residential area), there are also borderline cases in which the assessment is difficult to discern (informal settlements). To avoid individual bias linked to the personal judgment of a single image interpreter, collaborative work is particularly encouraged while interpreting borderline cases.

The corresponding interpretation rules for the classification are presented in the following section.

Five damage classes were selected to represent the structural damage observed on the basis of visual analysis of pre- and during-conflict satellite imagery:

- Slightly damaged (class 1): damage where we visibly see limited, slight damage to the physical structures (i.e. edges of buildings are slightly broken and/or small debris is present around the building);
- Moderately damaged (class 2): damage where we visibly see moderate damage to the physical structures (holes are apparent in the roof, the buildings are surrounded by destroyed buildings and have probably been affected by the blast, debris around the building, changes in roof edges);
- Severely damaged (class 3): heavy to very heavy structural damage where part or most of the physical structure is broken or has collapsed;
- Destroyed (class 4): where the structures have been destroyed (walls and roofs collapsed);
- Razed to the ground (class 5): all the debris removed, nothing remains of the original physical structure.
- The satellite-based methodology described, has been developed on the basis of the experience of EC-JRC on assessing damages in many crisis areas (e.g. Georgia, Gaza strip, Lebanon) since several years.

However, for this methodology to be appropriate and efficient, the quality and the timing of the image acquisition is of high importance. Specifically, it should be acknowledged that the time of the year for which assessments are made is a source of important challenges with respect to the monitoring of damage during prolonged conflict situations; in particular the acquisition angle and the acquisition season, both of which impede the satellite damage assessment.

The build-up pattern of Yemeni cities is also a source of important challenges, the urban density that affects the possibility to detect damage hiding the presence of debris, important criteria to detect affected areas.

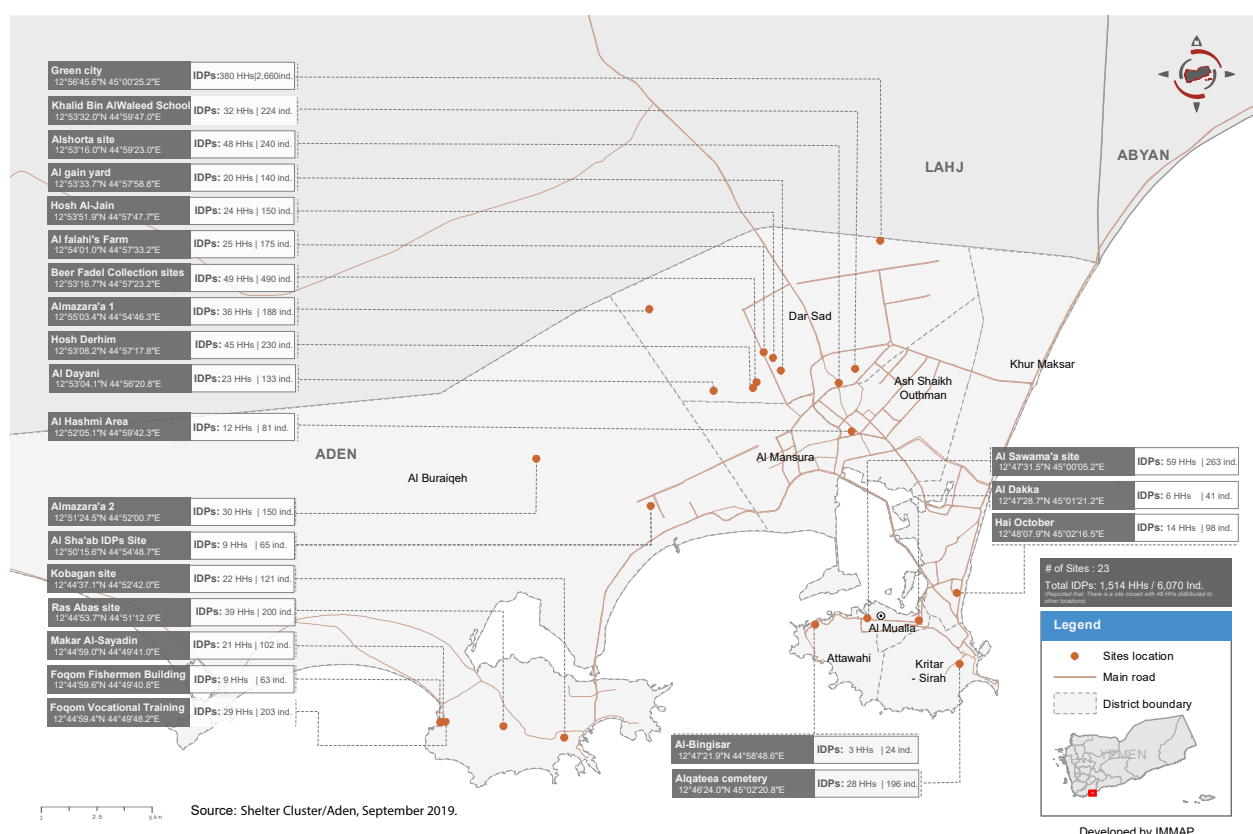
Ground truth photographs and field visits remain very important in high density areas where satellite images have limitations. The building facades affected by artillery shells will never be visible in the satellite imagery.

3 Demographics and Population Movement

Aden is the second most populous city of Yemen, with approximately 1.14 million residents,¹² of which 650 thousand are non-displaced, 290 thousand are returnees from displacement, 60 thousand are IDPs¹³, and nearly 140 thousand are migrants and refugees. Those returnees and IDPs with family ties in Aden enjoy comparatively better opportunities for shelter and support. In addition, 140 thousand are refugees and African migrants, mainly Somalis. In contrast, they keep to themselves and generally do not often interact socially with the local population. Despite the worsening conditions in Aden, immigration from the Horn of Africa continues unabated, though many choose to return when faced with the reality of Yemen. At the bottom of the social ladder are the Muhamasheen, an outcast and vilified social group, virtually segregated from the rest of Yemen's society. Having settled in the Dar Sad district in substantial numbers, they enjoy slightly better opportunities in Aden than elsewhere in Yemen. Until recently, Aden was home to a significant population of North Yemeni descent. After March 2018, that population declined sharply.¹⁴

Of the more than 1 million Adenis, 790 thousand are considered as PiN with 57% in acute need and the remaining 43% in moderate need. Despite being a major hub for coordination of humanitarian assistance, Aden is one of the most affected areas in terms of people in need (PiN) and has one of the highest non-resident IDP and returnee population in Yemen. The number of families that received Rapid Response Mechanism (RRM) assistance stood at 37,016.¹⁵ In addition, a severely damaged infrastructure, malnutrition, food insecurity, and disputes over land or property ownership and use are all contributing factors to complicated social dynamics. With 72% younger than 34 years-old, Aden's population is young and restless.

Figure 8: Aden Governorate - IDPs Camps Locations per Household (HH) and IDP



¹² Includes refugees and migrants. Sources: CSO, Population Technical Working Group, Refugee and Migrant Multi-Sector.

¹³ According to the participants in the Joint Analysis and Recovery Planning workshop, August 2019, previous Key Informant discussions undertaken by IOM confirmed 59,000 IDPs in Aden. However, they suggested that there are more IDPs in Aden.

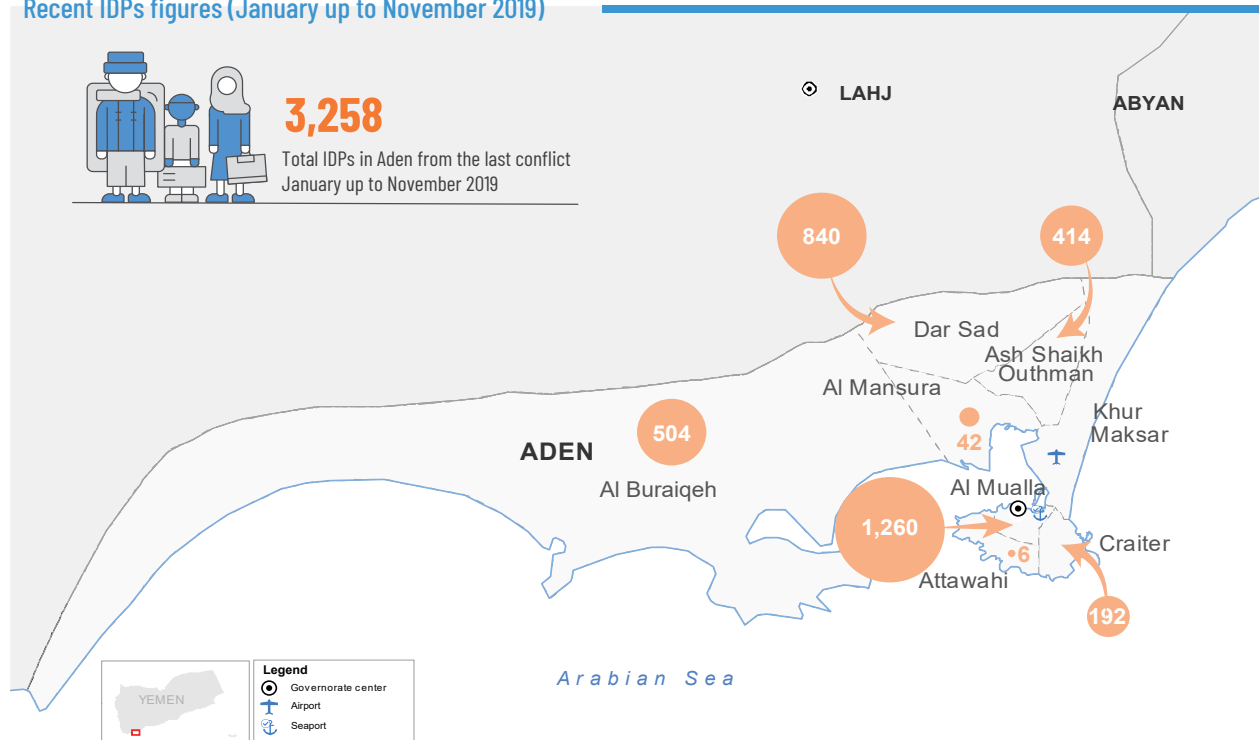
¹⁴ Osama bin Javaid, "Yemen War: Thousands of 'Northerners' Expelled from Aden," Al Jazeera, March 25, 2018, <https://www.aljazeera.com/news/2018/03/yemen-war-hundreds-northerners-expelled-aden-180325092526111.html>

¹⁵ UNOCHA, Yemen Humanitarian Update, Issue 9, May 21 – June 11, 2019, https://reliefweb.int/sites/reliefweb.int/files/resources/Yemen_Humanitarian_Update_Issue_09.pdf

ADEN CITY PROFILE

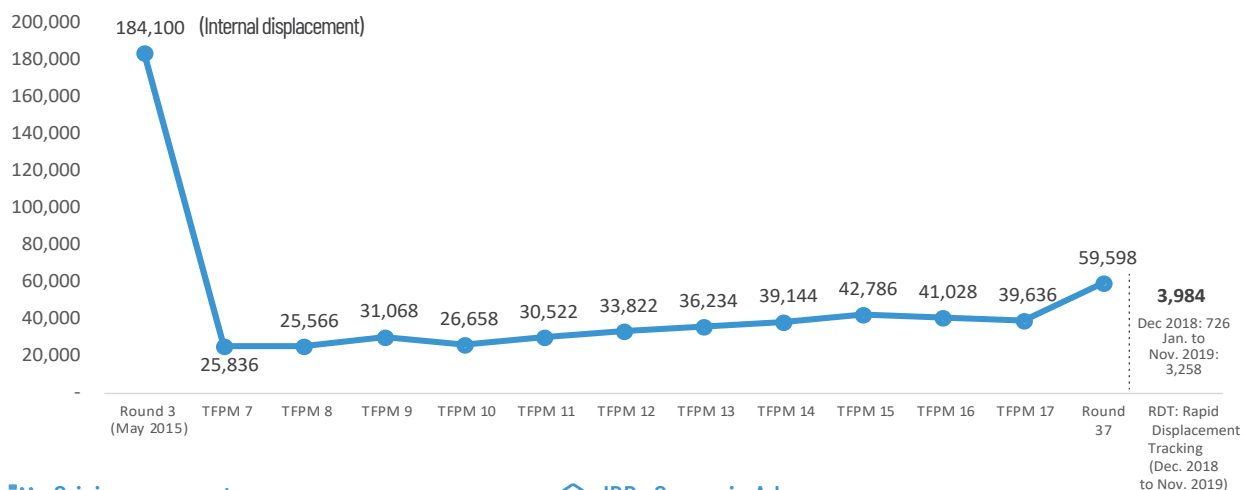
Figure 9: Displacement to Aden Governorate

Recent IDPs figures (January up to November 2019)

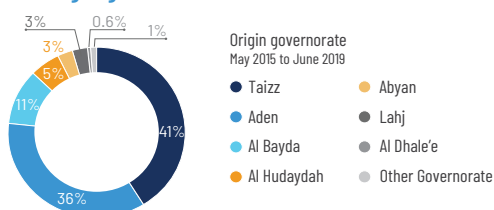


Displacement in Aden governorate

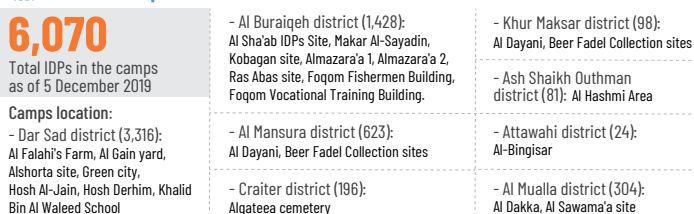
May 2015 to November 2019



Origin governorate

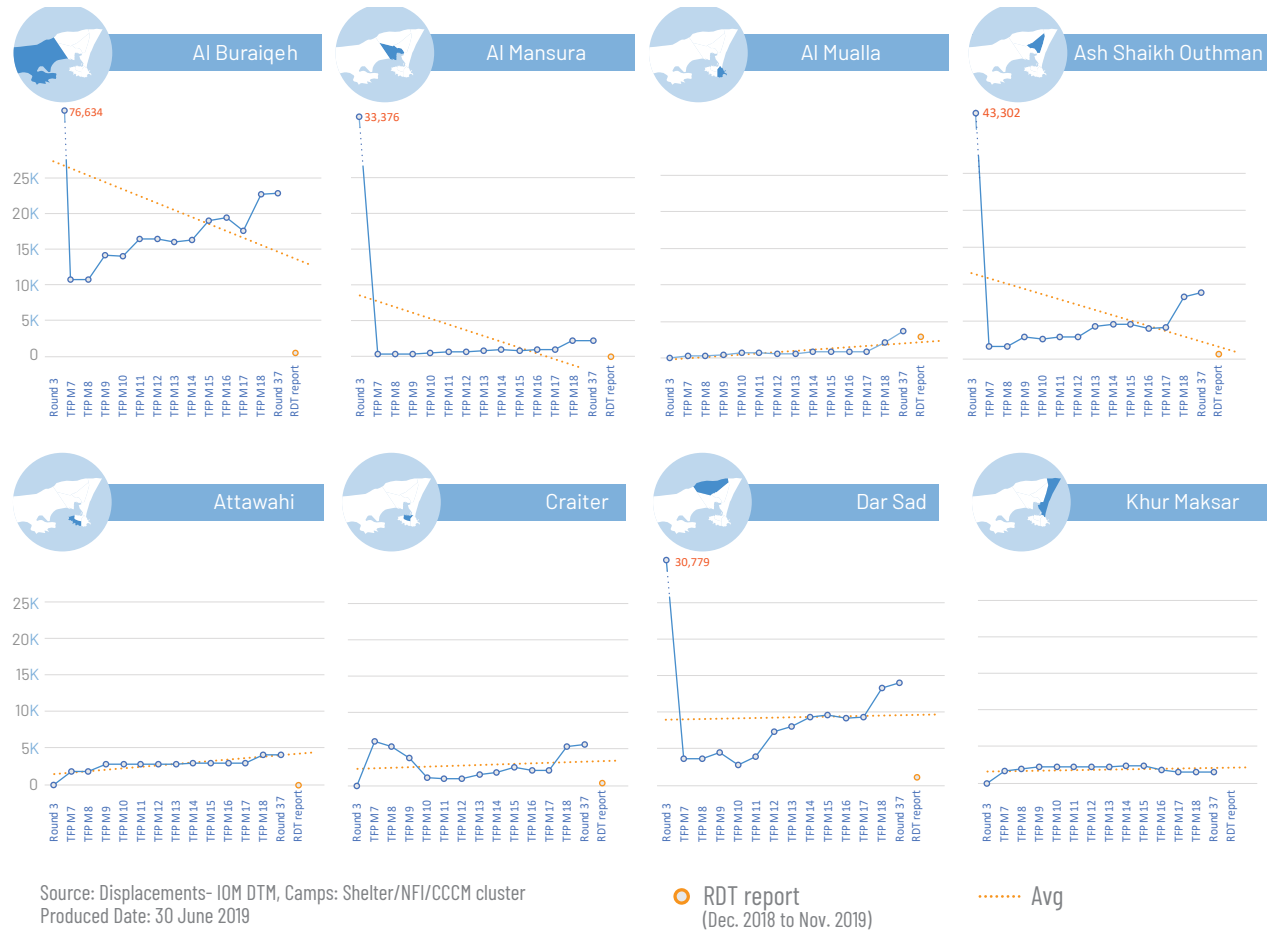


IDPs Camps in Aden



Source: Displacements-IOM DTM, Camps: Shelter/NFI/CCCM cluster
Produced Date: 30 June 2019

Figure 10: Trends per District according to TFPM reports



This graph shows the number of IDPs per district according to population movement. Reports are generated every few months To account for relevant changes and updates.

Contextual Migration

The links between the Horn of Africa and Yemen are old, historically focusing on the trade of slaves and, following the abolition of slavery by the British in the 1830s, of goods. The result has been the buildup of a substantial community of Somalis in Aden. Following independence and the creation of the two Yemeni states, demand for unskilled laborers grew, especially in the wake of the oil boom in the 1970s through unification in the 1990s.

Many of today's migrants are driven by the same motivations, but political and social instability in their countries of origin have changed the dynamic. Political instability and repression, land scarcity, and recurring droughts in Somalia, Ethiopia, and Eritrea are additional factors that fuel migration from these African countries.

Nearly 117,000 and 100,000 African refugees entered Yemen, respectively in 2016 and 2017. The vast majority are Somalis whose number in Yemen is estimated at 256,000. They constitute about 90% of the entire 280,000 migrant population residing in Yemen. Although the majority decides to stay in Yemen or in neighboring countries, others do proceed northward toward European locales. Of these, some 110,000 are registered with the authorities while the remainder are undocumented. The number of Ethiopian migrants has also increased following several bouts of expulsion from Saudi Arabia in 2017.¹⁶

The growing poverty and near famine in Yemen have done little to stem migration from the Horn. The general weakness of national institutions has turned Aden into an important node in migration routes linking Africa to the Gulf countries and even Europe. The 16-18 hours-long arduous sea journey across the Gulf of Aden from Somalia is fraught with perils and many succumb to exhaustion en-route.

Once in Yemen, these migrants are forced to find menial employment, such as in the cultivation of qat, a leafy plant whose shoots are chewed as a narcotic stimulant. A national pastime consumed by 73% of the men and some 46% of women, which Yemenis spend on 1.7 \$ annually that reportedly accounts for 25% of Yemen's economy.¹⁷ A cash crop that provides immediate returns for those who farm it in war-torn Yemen, qat is depleting the country's scarce water supply. Those unable to find employment are placed by the government into stadiums or makeshift camps or rely on aid by International Non-Governmental Organizations (INGOs).

The continuing deterioration of the security situation in Yemen has contributed to many returning to their countries of origin. According to the United Nations High Commissioner for Refugees (UNHCR), safety, security, and lack of access to basic services are cited as factors. By May 2017 some 1,124 individuals were repatriated with small batches in the following months. By August 2018, International Organization for Migration (IOM) assisted some 615 stranded migrants return home from Yemen and an additional 1,321 under the Assisted Spontaneous Return (ASR) program from Aden.¹⁸

The main issue faced by UN agencies and NGOs is accommodating the demand for return. UNHCR budgetary needs to address the challenges of returning 10,000 refugees from Yemen would be extremely expensive. Costs are not only associated with the repatriation process, but also to support the infrastructure of destination countries to absorb the returnees. Between 2017 and May 2019, under the auspices of the UNHCR programs, 4,298 refugees have returned to Somalia.¹⁹

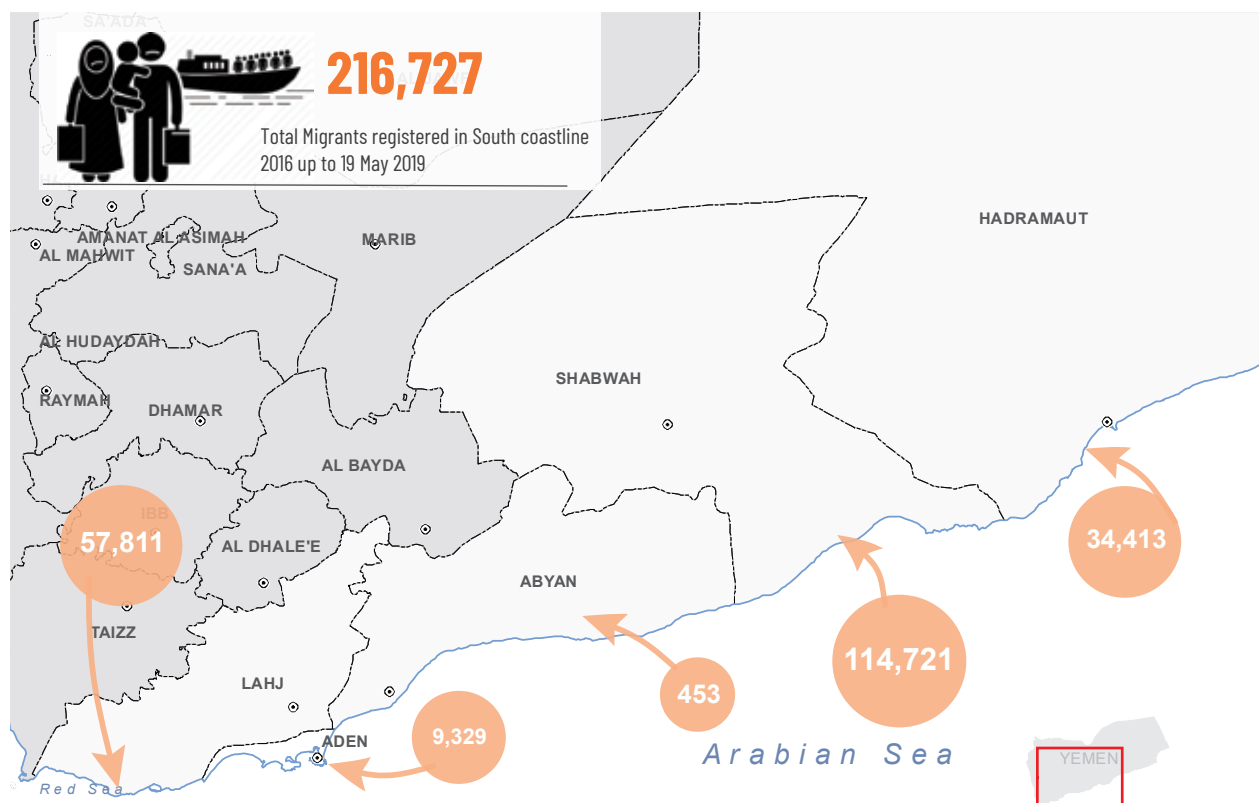
¹⁶ Voice of America, "Ethiopians Deported En Masse by Saudi Arabia: Allege Abuses," December 28, 2017, <https://www.voanews.com/africa/ethiopians-deported-en-masse-saudi-arabia-allege-abuses>

¹⁷ Najeeb Al Adoofi, "القات يدوخ الاقتصاد اليمني", The New Arab, January 26, 2015, <https://bit.ly/2Yxp4n6>

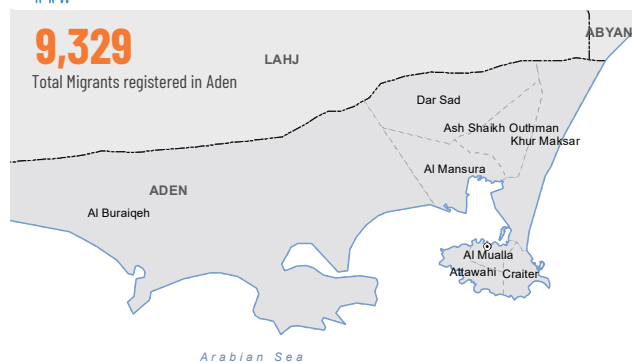
¹⁸ UNHCR, Supplementary Appeal: January-December 2017, May 2017, <https://www.unhcr.org/591ae0e17.pdf>

¹⁹ Hanson, Ghandi Tamfu, "Hurting in Yemen, Somali Refugees Head Home in Time for Eid," UNHCR, May 31, 2019, <https://www.unhcr.org/news/latest/2019/5/5cf0e3be4/hurting-yemen-somali-refugees-head-home-time-eid.html>; See also: UNHCR, Yemen Assisted UNHCR, UNHCR, Spontaneous Returns for Somali Refugees Begins, September 19, 2017, <https://www.unhcr.org/news/briefing/2017/9/59c0db454/yemen-assisted-spontaneous-returns-somali-refugees-begins.html>.

Figure 11: Migrants to South Yemen including Aden Snapshot



Migrants registered in Aden governorate



Migrants Families Registered in Aden Governorate

Migrants arrived Aden

location:
4 location in Aden governorate:
Mashhoor

Ras Emran
Al Basateen
Al Ghadeer

6,307

316

106

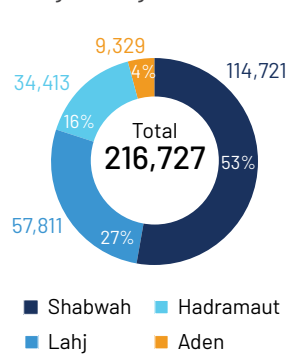
2,600

Source: DTM/IOM, in 2018 and 2019 the migrants registered in another governorate

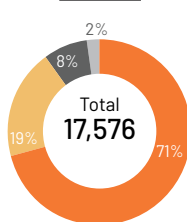


Migrants Families Registered in South Yemen coastline (2016 up to May 2019)

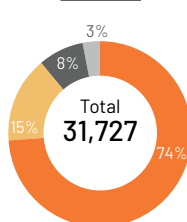
Total Migrants registered in Coastline



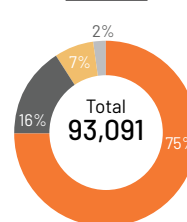
Year: 2016



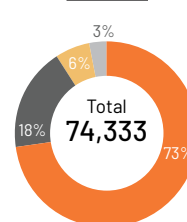
Year: 2017



Year: 2018



Year: 2019



Men

Woman

Boys

Girls

Aden, as the rest of Yemen, is facing a severe protection crisis. The conflict has weakened governance and the ability of administrative services to address the needs of the city's citizens. Although spared the intensity of the conflict that other regions of Yemen, like Taizz or Al Hudaydah, have, Aden's civil infrastructure has, nonetheless, been burdened by constant political instability, a ramshackle economy, and growing numbers of IDPs, refugees, and migrants. Another contributing cause is the nature of Yemeni society itself, where tribal and caste structures are highly pronounced. Jointly, these factors have adversely impacted the basic services provided to the vulnerable groups below:

1. Elderly people

HelpAge International, a global network of organizations that promotes the right of all older people to lead dignified, healthy, and secure lives, estimates that approximately 1.65 million older people in Yemen are in need of humanitarian assistance.²⁰ Of these, 50% of older women and over 60% of older men surveyed, are unable to access healthcare. The situation is further exacerbated with 95% not having access to any income and only 2-3% of elderly being able to afford essential medication.²¹

There is a general lack of retirement homes in Yemen. Media reports that the Emirates Red Crescent (ERC) has provided food and healthcare assistance to the elderly care home in Aden.²² According to 2016 news reports, the care homes in Aden were overcrowded and not able to admit all those in need.²³ In early 2016, a retirement home in Aden, established by Mother Teresa of Calcutta run by Catholic nuns, was attacked and 16 people, including several nuns, were killed.²⁴ Consequently, care houses resorted to only admitting those who have no family members to care for them. This negatively affects those who are more vulnerable, including disabled people, since many families struggle to provide necessary care for them.²⁵ According to the government official, additional rooms need to be constructed to meet the increased need, caused by large numbers of arrivals.

Older Yemenis remain particularly vulnerable to communicable diseases, including cholera and COVID-19. Those with a lowered immunity like people over 60 years old, the malnourished, children, and those that lack access to clean water and healthcare, and substandard food, are particularly vulnerable.²⁶ According to CFPs, care services for elderly people are generally needed but not accessible in Aden.²⁷

2. Children

Across Yemen, one child dies every ten minutes because of preventable causes, such as diarrhea, malnutrition, and respiratory tract infections.²⁸ Children are increasingly affected by infectious diseases, such as cholera, measles and dengue fever. Children from displaced or refugee populations are particularly vulnerable to infectious diseases, due to poor housing, water, and sanitation conditions, as well as lack of access to health services.

According to the Nutrition and Mortality Survey, conducted in Aden governorate in August 2015, 19.2% of children aged 6-59 months were acutely malnourished (World Health Organization (WHO) critical threshold is 15%), 23.4% were underweight (WHO "serious" threshold is 20%) and stunting rate was 16.7% (WHO "normal" threshold.²⁹ Currently, over 165,000 boys and girls in Aden governorate require nutrition assistance, with the highest numbers observed in Ash Shaikh Outhman, Al Mansura, and Dar Sad.³⁰

Displacement has led to family separation cases. According to the Multi-Cluster Location Assessment (MCLA) 2018, there are over 200 unaccompanied and separated children in Al Buraiqeh district in Aden, amongst the IDPs and returnee population.³¹

²⁰ HelpAge USA, "The Yemen Crisis: How Older People are Affected," November 30, 2018, <https://www.helpageusa.org/resources/news-headlines-test/the-yemen-crisis-how-older-people-are-affected/>

²¹ Ibid.

²² Rola Alghoul and Mohd Aamir, "UAE- ERC provides assistance to elderly care home in Aden, Yemen", MENAFN, February 29, 2019, <https://menafn.com/1098160272/UAE-ERC-provides-assistance-to-elderly-care-home-in-Aden-Yemen?src=Rss>

²³ Nasser Al Sakka, "No Country for Old Men: Yemen's War Leaves the Elderly Destitute", The Middle East Eye, March 6, 2016, <https://www.middleeasteye.net/fr/Yemen-old-peoples-home>

²⁴ Saeed Al-Batati and Kareem Fahim, "Gunmen Kill 16 at Nursing Home in Yemen Started by Mother Teresa", The New York Times, March 4, 2016, <https://www.nytimes.com/2016/03/05/world/middleeast/gunmen-kill-14-at-nursing-home-in-yemen-started-by-mother-teresa.html>

²⁵ Nasser Al Sakka, "No Country for Old Men: Yemen's War Leaves the Elderly Destitute"

²⁶ Age International, Cholera in Yemen Killing Mostly Older People, December 21, 2018, <https://www.ageinternational.org.uk/news-features/news/2018/cholera-outbreak-yemen-kills-more-older-people-than-children/>

²⁷ CFP Survey, June/July 2019.

²⁸ UNOCHA, Yemen HNO 2019.

²⁹ MPHP, Aden Governorate Health Office, and UNICEF, Nutrition and Mortality Survey Report: Aden Governorate, Yemen, August 8 - 13, 2015, https://www.humanitarianresponse.info/sites/www.humanitarianresponse.info/files/documents/files/adennutrition_survey_report_aug_2015.pdf

³⁰ UNOCHA, Yemen HNO 2019.

³¹ UNOCHA, 2018 Yemen MCLA.

3. Women

There is no legal framework in Yemen setting the minimum age for marriage and a permission of legal guardian is needed.³² According to UN data, 32% of women aged 20 to 24 across Yemen were first married or in union while under 18.³³ Women also do not have equal rights to divorce, inheritance and child custody.

Women in Aden are also underrepresented in education. For example, during the 2012/13 academic year, enrollment rates in basic (elementary) education were lower among girls, 74% as compared to boys, 86%. In 2013/2014, enrollment for girls stood virtually still at 75%, while the boys slightly decreased to 79%.³⁴ Currently, over 80% of the CFPs have stated that literacy classes and vocational training for women are insufficient across the city.³⁵ Yet, women's participation in formal labor market and national economy stood at a negligible 6% in 2013-2014.

According to recent statistics published by the United Nations Children's Fund (UNICEF), one out of 15 girls aged 15-19 has given birth and one out of 260 women in Yemen dies in pregnancy or childbirth.³⁶ In 2010, only 25% of women were attended by healthcare providers at least four times during pregnancy.³⁷ Over half of the CFPs reported that protection services for pregnant and nursing women and infants are not accessible and were needed across the city.³⁸

More than half of the CFPs interviewed, indicated that drop-in centers for women are not accessible while it is needed in all districts in Aden. In Attawahi, however, 40% of the CFPs perceive the service to be both accessible and sufficient.³⁹

4. People with disabilities

Yemen has signed the Convention on the Rights of Persons with Disabilities (CRPD) and its Optional Protocol in 2007 and ratified it in 2009. The number of disabled people vary. According to the 2013 National Health and Demographic Survey, 3% of the Yemeni population are disabled (with 1% classified as severe and 2% moderate disability).⁴⁰ In contrast, the UN Human Rights Office estimates three million disabled people (over 11% of population) face considerable challenges in meeting their basic needs.⁴¹

Several pieces of national legislation were passed to protect people with disability. The Law on the Care and Rehabilitation of Disabled Persons of 1999 assigns protection responsibilities to the Ministry of Social Affairs and Labor. In addition, it provides for the establishment of various care services, including rehabilitation and vocational training.⁴² The National Disability Strategy of 2010 recognizes the social model of disability, thus aiming to ensure equal access to the rights of disabled people and inclusive society. Due to the ongoing conflict, the strategy has yet to achieve full implementation. Governmental funds have been further affected by lack of finances, which limits the provision of direct financial support as well as services, healthcare, and housing for the disabled.⁴³ For instance, as of 2014, an estimated 20,000 people were not receiving medication through the Disability Welfare and Rehabilitation Fund.

Over 80% of people with disabilities and other vulnerable people experience problems accessing services. Impeding factors include physical access challenges, economic and socio-cultural barriers, discrimination, lack of information and services.⁴⁴

People with disability are often affected by their limited mobility and can be left behind by their families in case of evacuation from conflict-ridden areas. Furthermore, there is a stigma associated with disability which leads to many being isolated by their families.⁴⁵

Over 60% of the CFPs stated that mental health and psychological support for adults and children, services for people who have lost sight and/or hearing, and services for people who have lost limbs are needed, but largely inaccessible in Aden.⁴⁶

32 Human Rights Watch, Yemen Events of 2018, <https://www.hrw.org/world-report/2019/country-chapters/yemen>

33 UN Women: Global Database on Violence Against Women, Prevalence Data on Different Forms of Violence Against Women, 2011, <http://evaw-global-database.unwomen.org/en/countries/asia/yemen#2>

34 Save the Children, Joint Education Needs Assessment Report, Aden – Yemen, March 2016.

35 CFP Survey, June/July 2019.

36 UNICEF, Yemen: Parenting in a War Zone; Crossroads at Childbirth, June 2019, <https://www.unicef.org/mena/media/4876/file/YEM-ParentingInAWarZone-Pamphlet1-June2019.pdf.pdf>; See also: UNICEF, Antenatal Care, October 2019, <https://data.unicef.org/topic/maternal-health/antenatal-care/>

37 UNICEF, Antenatal Care Report, October 2019, <https://data.unicef.org/topic/maternal-health/antenatal-care/>

38 CFP Survey, June/July 2019.

39 Ibid.

40 MPHP & CSO, Yemen: National Health and Demographic Survey 2013, July 2015, <https://dhsprogram.com/pubs/pdf/FR296/FR296.pdf>

41 United Nations Human Rights: Office of the High Commissioner, "Yemen Conflict Death Toll Nears 650, With UN Rights Office Spotting Plight of Nearly 3 Million Disabled," UN News Center, May 5, 2015, <https://www.ohchr.org/EN/Newsyork/Stories/Pages/yemendeathtollnears650.aspx>

42 The Equal Rights Trust, From Night to Darker Night: Addressing Discrimination and Inequality in Yemen, The Equal Rights Trust Country Report Series: 9 (London: Stroma Ltd, 2018).

43 Ibid.

44 Handicap International, Inclusion Factsheet – Shelter/NFI/CCCM, 2018, https://www.sheltercluster.org/sites/default/files/docs/inclusion_of_people_with_disabilities_other_vulnerable_in_shelter_response-yemen_factsheet.pdf

45 Equal Rights Trust, From Night to Darker Night, 219.

46 CFP survey, June/July 2019.

5. Ethnic minorities

At the bottom of the social ladder are the Muhamasheen, an outcast and vilified social group, virtually segregated from the rest of Yemen's society. They are subject to intense discrimination, though, this is less prevalent in Aden than elsewhere in Yemen. This includes limited to no access to employment and basic services, such as education, healthcare and water and sanitation and other support mechanisms.⁴⁷ Many of the Muhamasheen have been displaced, and reports indicate that they often struggle to obtain access into displacement camps due to prejudice from other IDPs.⁴⁸

In Aden, most of the Muhamasheen work as street cleaners, however other jobs are also observed. Some of them receive cash assistance or food baskets from the World Food Program (WFP). Also, several child-free spaces encouraged greater participation of Muhamasheen children, however, incidents were reported where other parents would refuse to bring their children to the same space.⁴⁹

Survivors of violence

Following recent fighting in Aden, medical services are overwhelmed by the number of casualties.⁵⁰ The situation related to the accessibility of case management services for gender-based violence (GBV) survivors varies across the city.⁵¹ In Al Mansura, Al Mualla and Dar Sad, CFPs perceive the service to be needed and currently not accessible, while in Al Buraiqeh and Ash Shaikh Outhman, they stated that it is accessible but insufficient. In Craiter, it is not accessible and not needed, while in Khur Maksar all CFPs state that it is not accessible. Half of their number consider it as a need while the rest indicate that it is not.

⁴⁷ Minority Rights Group International, Yemen Muhamasheen, November 2018, <https://minorityrights.org/minorities/muhamasheen/>

⁴⁸ Aisha Al Warraq, The Historic and Systematic Marginalization of Yemen's Muhamasheen Community, Sana'a Center for Strategic Studies, June 4, 2019, <http://sanaacenter.org/publications/analysis/7490>

⁴⁹ Ibid.

⁵⁰ MSF, "Hospital in Aden Overwhelmed by Wounded in Intense Fighting," August 10, 2019, <https://www.msf.org/hospital-ad-en-overwhelmed-wounded-intense-fighting-yemen>

⁵¹ CFP Survey, June/July 2019

Highlights

a. National Stakeholders

- Implement strategic planning to a contextualized needs-based approach to address city's problems.
- Joint participatory approach to policy and decision-making.
- Adherence to the existing legal framework of LAL.
- In the absence of sufficient capital, pool and reallocate available resources to target more urgent needs.

b. International Stakeholders

- Donor agencies and NGOs must necessarily forge partnerships (rather avoid collaboration) with the LCs so as to target needs precisely, maximize resources for beneficiaries, provide on-the-job training and introduce new thinking.

1. Summary

Aden is the interim capital of the IRG and a city where various political interests and agendas are represented. At the local level, the daily running of the city and its eight districts falls under the purview of the Local Councils (LCs). The Local Authority Law (LAL) of 2000 represented a significant step forward in the financial and administrative decentralization of central authority to grant local authorities at the governorate- and district- level budgetary autonomy in their administration. Broadly, the LCs were intended to represent a mechanism of stability which, on the one hand would allow for a reduction in the authority of the national government over local needs and, on the other, it would enable the local population to elect their own representatives.⁵²

2. Budget and Financing

The last council elections in Aden were held in 2006. 16 governorates local council members were elected representing Aden's eight districts and 176 councilors representing those districts' local councils. Since then, no further elections have been held and the same councilors have remained in office during the last 13 years. Regular LC meetings resumed in March 2019, though new elections are still to be had.

Sector experts have identified the following categories as key to LC income :

Figure 12: Main Sources of Revenue in Aden City, 2019.



Source: KI Survey: June/July, 2019.

Revenues, however, have declined since 2015. Since 70% of the government's prewar revenue depended on the oil industry, the lack of lost resources remains critical. Key informants from six districts – Al Buraieqeh, Dar Sad, Ash Shaikh Outhman, Al Mualla, Craiter, and Khur Maksar – report significant decline while in the remaining two districts, Al Mansura and Attawahi, the situation is reported as less sharp.

Indeed, while the need for resources is great, these are few. In practice, the LCs never enjoyed the authority to set a budget that would cover their operations and have always been reliant on government funding to cover operational and projects' costs, wages, infrastructure maintenance, investments, development programs, and capital transfers. This differs from one district to the other.

Although LC's in Aden are entitled to financial support from the central government for capital investments and recurring operating expenses, in practice, the conflict has considerably reduced that amount. There is very little coordination with the central government and the LCs' budgets have received no operational funds since 2014. In addition, there is no good monitoring system in place to cover budget spending. LC income is ordinarily generated from commercial taxes; fees on sports' events, tourism, building permits, registrations; state-operated utilities, such as water and electricity bills, property transfers, car registrations, entertainment venues, and the like. The civil war has naturally depleted income from the commercial taxes.

⁵² Wadhah Al-Awlaqi and Maghed Al-Madhaji, Beyond Business as Usual: Local Governance in Yemen Amid Conflict and Instability, edited by Anthony Biswell, Rethinking Yemen's Economy, Sana'a Center for Strategic studies, Deep Root Consulting, and CARPO, July 2018, <https://sanaacenter.org/publications/main-publications/6960>

Local Councils

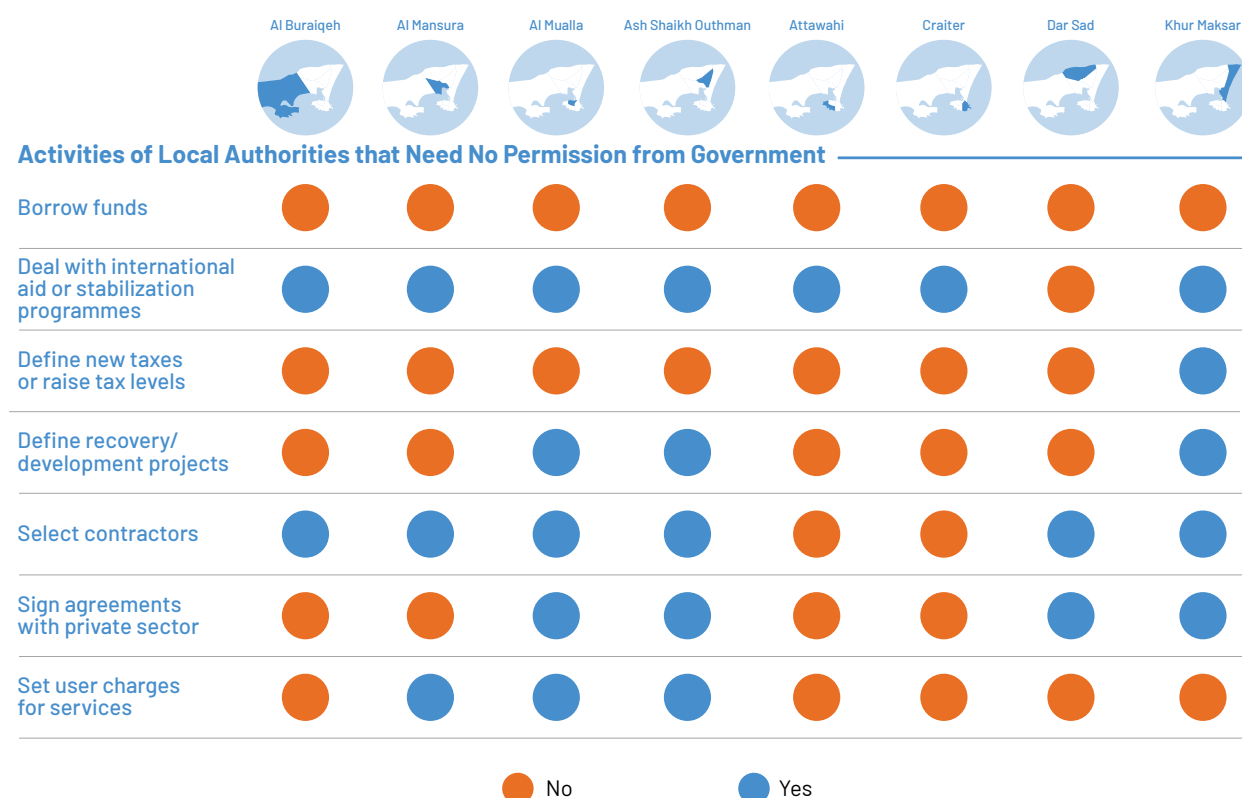
The governorate LC, led by its president, the governor, is represented by one member of each governorate district with no less than 15 members. At the lower, district, level, the number of councilors ranges between 18 and 30 members depending on the district's population density. Thus, districts with less than 35,000 people elect 18 councilors whereas those with up to 150,000 about 30 councilors. For governorates with less than 15 districts as in Aden, additional members for the governorate council are elected, per district, until the minimum number is reached. This is considered necessary to ensure equal representation for all constituent districts. At no time, however, should the number of councilors fall below 15.⁵³

The election process divides the districts population into sub-districts depending on each district's density. Residents cast ballots for their representative as well as the president of the LC who represents them at the governorate council. To serve as councilor, one must be a natural-born Yemeni citizen, a Muslim, at least 25-years-old, and be a resident of the district which they seek to represent. Upon election, their mandate is limited to four years in office, though they may run for reelection at the end of that term. Until 2008, governors were appointed by presidential decree. Following significant political pressure, an amendment was added that year which granted LCs, at both the governorate- and district- level, the right to elect governors. According to Article 38, after the electoral college elects the governor, the announced winner was appointed to the post by a presidential decree.

Yet, because governors rank as a cabinet ministers, in practice, none has ever been elected in this manner. Former president Saleh initially reluctantly upheld the letter of the law for most of Yemen's governorates, except for Al Dhale'e and Sa'ada, where he appointed his loyalists. This legal ambiguity is inherent in the contradictions within LAL itself. For example, Article 105 specifies that if the Ministry of Local Administration fails to elect a governor, the President may appoint a person of his choice among the members of the governorate's local council. The same law upholds the right of the President to appoint lower district posts as well.⁵⁴

In theory, LAL empowers governorates' and districts' councils to generate their own revenues through a series of tariffs and taxes. It specifies four main sources of revenues for the councils; first, district local revenues; second, joint revenues at the governorate level; third, joint public resources; and fourth, financial support by the central government. The budget of the LCs, therefore, are neither distinct nor separate from the national state budget. They are, in fact, a subset which vertically integrates and consolidates taxation and finance from district to governorate to the national budget. This considerably limits the authority of the municipalities to amend budgets or reallocate resources to address crises as they arise. Furthermore, LCs have no discretion to set the amount of taxation and must share whatever is collected with the governorate authorities, which, in turn, must share it with the central government. Revenues from the last two sources are, in theory, redistributable downwards to the local councils based on a set of criteria ranging from priority of need, population density, poverty levels, availability of resources, and the like. In practice, the degree to which these funds are sufficient to address and alleviate local issues is uncertain.⁵⁵

Figure 13: Activities that Local Authority Can Do/ Implement Without Permission From Central Government in Aden City, 2019.



Source: KI Survey June/July, 2019.

⁵⁴ Ibid.

⁵⁵ National Information Center Website, 2014, <https://www.yemen-nic.info/gover/aden/politlocal/>

⁵³ Ibid.

The first national budget since 2014 was announced in January 2018. Due to significant budget cuts, financial support for the LC was slashed and these were instructed to operate in accordance to the last 2014 budget. It is estimated that most of the LCs on average receive less than 150,000 YER (less than \$600) a month to cover operational costs. Governorates which enjoy their own revenue streams, like Al Mahrah, Hadramaut, and Marib, and which have seen lower levels of conflict, are better funded. Consequently, they enjoy broader autonomy than elsewhere. In Aden, governorate income and support provided by the central government, came to a halt. For instance, prior to March 2015, the Attawahi LC used to receive an annual financial support from the central governorate reaching 360M YER.⁵⁶ This funding completely stopped after March 2015 and the district council currently relies solely on 120M YER for all operations provided by the governorate LC.⁵⁷ Since March 2015, district LCs have not been able to hold any regular meetings. The first regular meeting since then was not held until March 2019 in the district of Khur Maksar.⁵⁸

Despite hardships, sector experts indicate that there is sufficient goodwill between civil servants and the electorate to stimulate LC transparency and accountability. Although, these are a function of available resources, LCs routinely make public announcements on the following local administration-related (See Figure 11). The question of openness, however, depends on the district's own activities, resources, capabilities, economy and local issues. Perhaps more significant is the LCs willingness to engage in grassroots campaigns to raise awareness, hear public grievances, engage in job creation, organize community events, and the like.

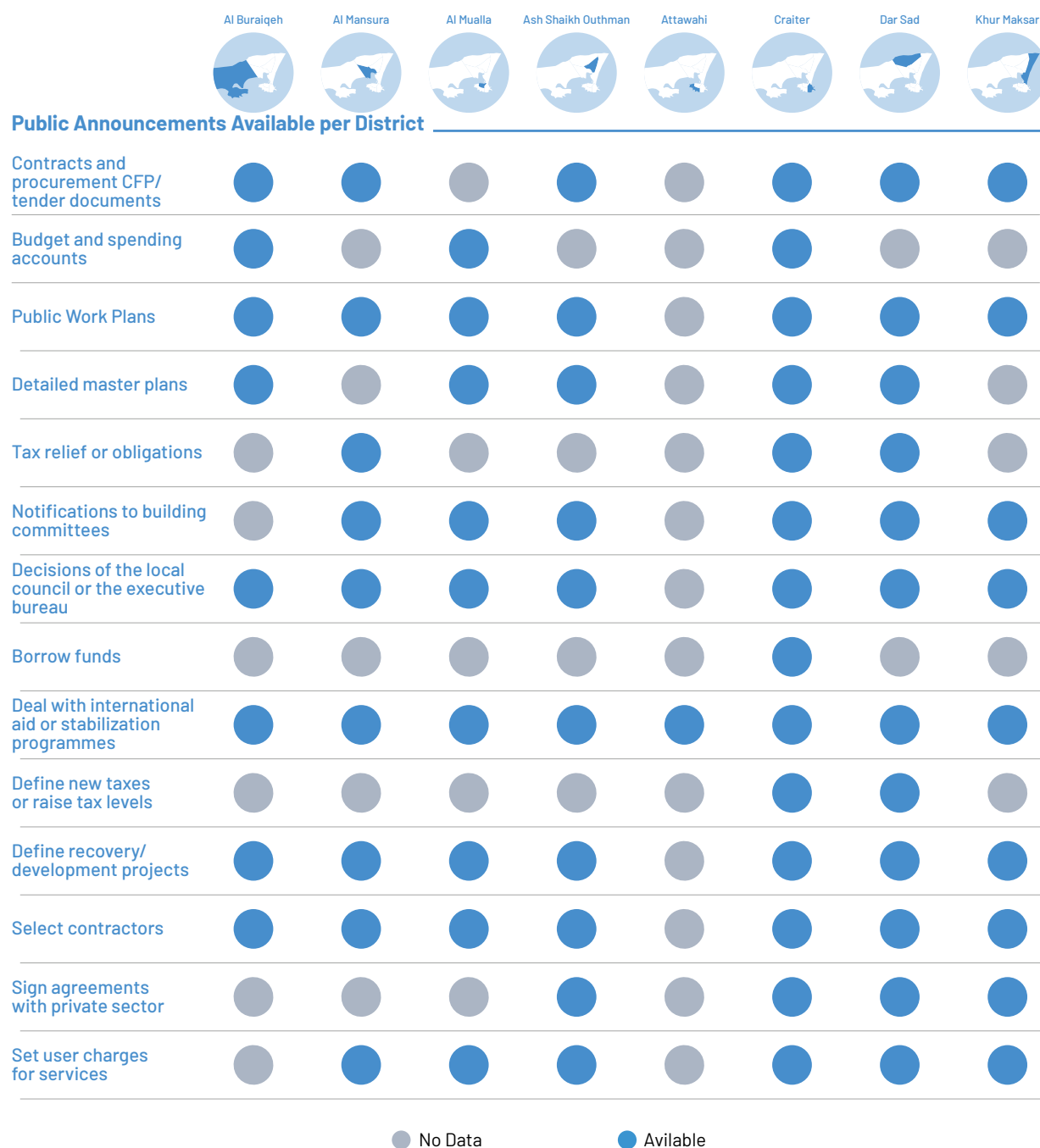
According to the participants from the Joint Analysis and Recovery Planning workshop, salaries of public servants have been reduced since 2015. In addition, the eruption of the conflict has forced a freeze of new hires, as a result of which, the ranks of public servants remained filled almost 80% from those hired before 2011. This adversely affects the quality of public services. Military personnel are among those affected the most by budgetary cuts. Reduced salaries and retirement contributions have had a deleterious impact on morale of both active servicemen as well as retirees. Although emergency funds and aid from Qatar, Saudi Arabia, and UN recovery projects filled in certain gaps in salary payments, these were insufficient to cover the shortfall, particularly backdated payments for the 2015 – 2018 period.

⁵⁶ Mansour Al Al Bashiri, *Economic Confidence Building: Civil Servants Salaries, Rethinking Yemen's Economy*, Deep Root Consulting with Sana'a Center for strategic Studies, and CARPO, March 18, 2019, <https://devchampions.org/uploads/publications/files/Rethinking%20Yemen%E2%80%99s%20Economy%20-%20policy%20brief%2011.pdf>.

⁵⁷ Ibid; See also, Carnegie Middle East Center Website/Publications/Local Councils in Yemen: A Crucial Tool to Ensure Stability, October 2016, <https://carnegie-mec.org/publications/64818>

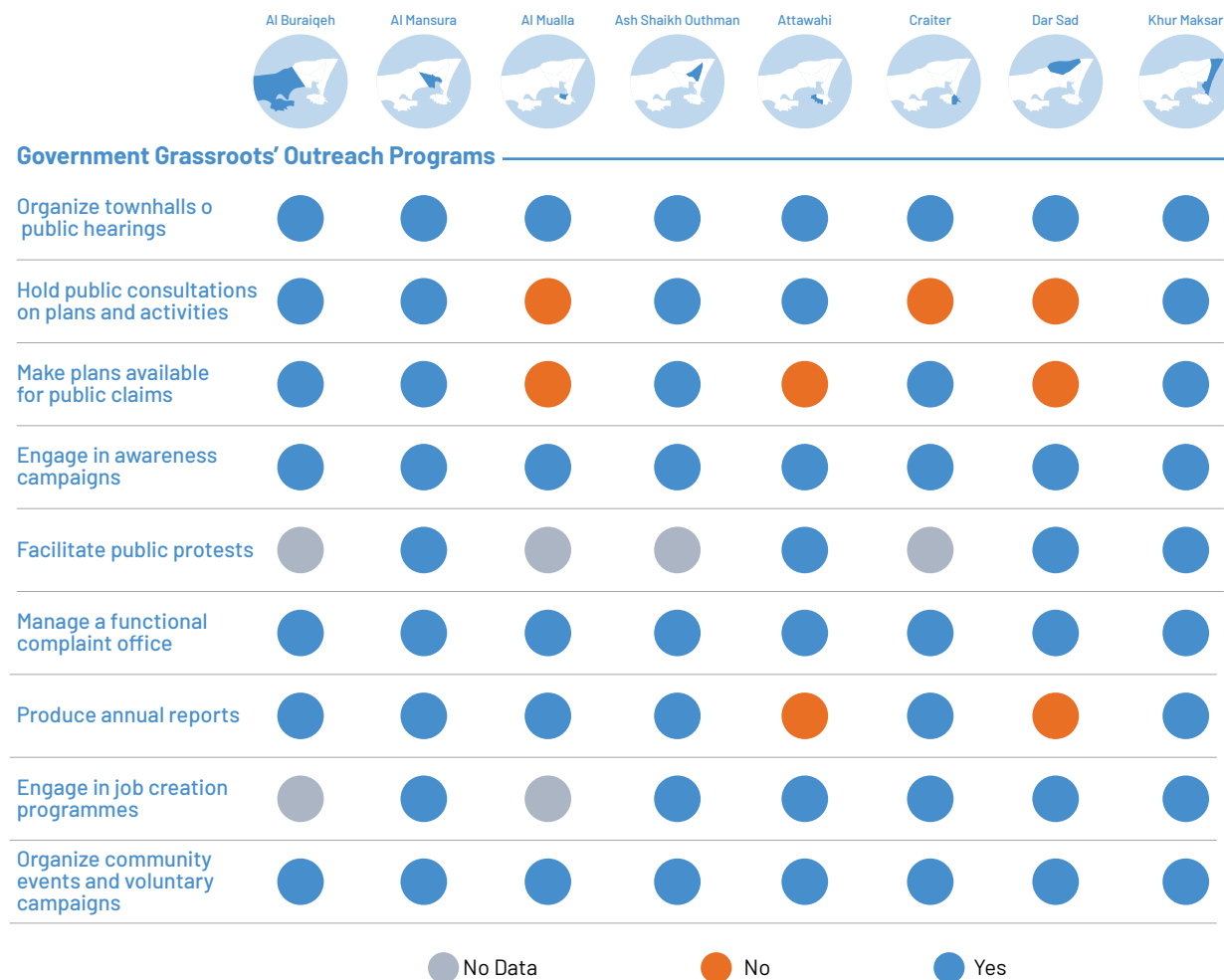
⁵⁸ Aden Sabq New, "District Local Council of Aden Holds Its First Regular Meeting Since the Last War," March, 2019, <https://www.adensbq.com/news/33858>

Figure 14: Public Announcements Available per District, 2019.



Source: KI Survey: June/July, 2019.




Figure 15: Government Grassroots Outreach Programs in the Past Six Months in Aden City, 2019.



Source: KI Survey June/July, 2019

The ability of government structures to provide administrative services as well as retain appreciable levels of engagement with the public derives, remains relatively strong, in part from past low levels of strife affecting Aden but also from the apparent little damage to the facilities prior to July 2019. Sector experts indicate that while such damages have indeed occurred, these have not radically impacted the ability to govern, as shown in Table 1, which highlights the total number of facilities and their functionality status.

Table 1: Total Number of Governance Facilities in Aden City (per district), 2019.

	Fully Functioning 	Partially functioning 	Not functioning 
Cadastral Affairs Department (if it exists in the city)	6	1	0
Civil Defense	3	0	0
Civil Registry	7	0	0
Complaint office/ hotline	7	0	0
Courts (if they exist in the city)	8	0	1
Death and Burial Office	6	0	0
Fire stations	6	0	0
Licenses office	9	0	0
Municipal complaint hotline	7	0	0
Municipal one-stop shop	10	0	1
Municipal police	1	1	0
Municipal services (building permits)	8	0	0
Other Governance Unit	1	0	0
Police stations	16	5	0
The slaughterhouse	22	1	0
TOTAL	117	8	2

Source: KI Survey: June/July, 2019

Rule of Law

The participants at the Joint Analysis and Recovery Planning workshop cited lack of rule of law, as well as safety and security issues as most pressing governance shortcomings after the crisis. The judicial system is similarly described as not fully functional since judges lack both the authority and independence of office they represent. Violent extremism and radicalization, especially among the youth segment of the population, is fast becoming a major security concern; pointing out the need for addressing measures to reduce risks affecting the overall security of Aden. This is an urgent problem given the wide proliferation and easy access to light weapons.

Police Stations

According to media reports, all police stations in Aden where shut down during the escalation of the conflict in 2015.⁵⁹ The break down in law and order and armed clashes resulted in many damaged facilities. In September 2015, UAE launched a rehabilitation program and provided equipment, vehicles, office furniture, weapons, training and salaries for police officers.⁶⁰ Five police stations, out of 18 identified, resumed normal operations by September 2015.⁶¹ Similar support continues to date.⁶²

⁵⁹ The National, "UAE Brings Stability Back to Life in Aden," September 23, 2015, <https://www.thenational.ae/world/uae-brings-stability-back-to-life-in-aden-1.132433> on 24/06/2019.

⁶⁰ Ibid.

⁶¹ Ash Shaikh Outhman, Al Cairo, Khur Maksar, Craiter and Al Mualla stations in Ibid.

⁶² Aden Press, "Shalal Meets the Swedish Envoy, Reassures Foreign Diplomatic Missions," March 2019, <http://en.adenpress.news/news/2823> on 24/06/2019

3. Conclusions

The LCs are arguably the most important public institutions in Yemen. They are responsible for providing basic public services to their electorate in education, health, water and sewage, waste collection, electricity, road repairs, and infrastructure but also important conduits gauging community issues and measuring the public's pulse. In practice, however, they have been handicapped by legal ambiguities, bureaucracy, lack of trained personnel, and disruptions by years of conflict. Nationwide, there is no single model that explains their range of functions and staffing practices beyond what is stated in LAL.

In Aden, the complex governance structures shared between the various political interests complicates local administration. While collaboration is commonplace in non-sensitive areas, such as delivery of basic services (water, electricity, etc.), it is polarized in matters of safety and security, justice, administration of police departments, and conflict resolution.

LCs were established as local district- and governorate- bodies, although they had unclear financial and administrative mandates, LAL simultaneously created a bloated bureaucracy with an insufficiently trained workforce. Moreover, the lower administrative functions continue to be staffed by long-serving clerks and secretaries, the middle and higher managerial and directorial positions are filled by appointed individuals.

1. Background/Overview

Aden is a socially cohesive city, united by shared experiences and current needs. In contrast to North Yemen, tribal affiliations in Aden were never a factor determining the nature of political engagement in Aden. Owing to its geographical location, the city has traditionally always been one of the most open and cosmopolitan places in Yemen. Reportedly, after the unification, the 1990s constituted the zenith of democratic liberties in Yemen, which, in turn, encouraged the expansion of NGOs.⁶³ According to the 2013 statistical yearbook compiled by the Yemeni government prior to the conflict, Aden traditionally boasted a vibrant cultural life. It possessed hundreds of both public and private cultural establishments, like civil and community societies, artisanal shops, bookstores, libraries, video stores, theater halls, commercial printing shops, art stores and the like. Only Sana'a and Hadramaut boasted similar numbers.

By the 1950s, the first trade unions emerged and, a decade later, interest in women's issues led to the founding of the first Arab Women's Association (AWA) in Aden.⁶⁴

2. Current State

In Aden, the fragmentation of political authority and governing institutions since 2018, has had two important consequences. In the light of current circumstances, civil society dynamics are increasingly being replaced by political tribalism and informal family and kinship ties. Within the context of the conflict, tribal loyalties have begun to assert themselves politically even in southern Yemen. On the other hand, the often fraught relationship between state and society – a consequence of conflict duration – has produced a cohesive public opinion that is equally dissatisfied.

The ongoing crisis has resulted in the increase of humanitarian aid IDPs and migrants by the international community and a variety of different actors. As a result, there has been a marked improvement of better access to services, protection, and basic needs. Nonetheless, it is not apparent that similar aid has reached most poor Adenis, either by the Yemeni government or international donors. One illuminating case is that of Dar Sad district where IDPs and the local population are in far more dire need of assistance than elsewhere in the city. In addition to humanitarian concerns, lack of aid brings associated risks on the fabric of district's social cohesion and may be a factor in arousing jealousies and animosities among its residents.

Conclusion

Longstanding tensions and the intensification of the conflict has polarized society; the public sphere has lost what little autonomy it enjoyed since the unification of Yemen in 1990. Windows of opportunity remain available and grassroots activism is endemic. This, and the level of disenchantment with the current political situation suggests that the potential for NGOs is great. Documentary evidence suggests high levels of frustration by those who feel neglected and left behind.

Non-Governmental Organizations (NGOs)

Civil society has a surprisingly long history in Yemen, albeit fractured and divisive. Its antecedents trace back to the second decade of the 20th Century south Yemen when activists in British-held Aden advocated the expansion of educational services by erecting schools and financing teaching and learning materials. This initial momentum gradually expanded to include a wide range of cultural activities, youth care, professional and labor, and local development.

Following the establishment of the PDY, the communist regime took over the role that NGOs played during the British period, without, however, undermining their socially progressive message.

NGOs in Yemen are active but their ability to affect legislation has traditionally been weak. For instance, the 2011 Revolution, which lasted from 27 January 2011 to 27 February 2012, represented a high point in the evolution of civil society organizations in Yemen. Nearly 8,300 voluntary associations and NGOs were registered in the few months that followed. Many of the demonstrations, rallies, and marches that occurred nationwide were organized by women who added to the national political debate neglected gender issues like, uneven literacy rates, social disparities between men and women, women's health, maternal mortality, and child marriage. Yemen has already ratified the Convention on the Elimination of all Forms of Discrimination Against Women (CEDAW) in 1984, and the NDC, held between March 2013 and January 2014, reserved 30% of its seats for women. The NDC did not, however, produce any appreciable change.

Conflict intensity, political instability, the transfer of the national capital from Sana'a to Aden in 2015, and the involvement of different key players, introduced new, different, and more complicated sets of agendas that further frustrated both the growth and evolution of NGOs.

⁶³ Laurent Bonnefoy and Marine Poirier, *Civil society and democratization in Yemen. Enhancing the role of intermediate bodies*, 2009, University of Amsterdam and Hivos,

⁶⁴ Moosa Elayah and Hadil Mohammed, *Civil Society Organizations and Peacebuilding After Yemen's Former President Ali Abdullah Saleh*, Governance and Peace-Building Center, September 2018, <https://www.kpsrl.org/sites/default/files/2018-09/Civil%20Society%20Organizations%20%28CSOs%29%20and%20Peacebuilding%20after%20Yemen%27s%20Former%20President%20Ali%20Abdullah%20Saleh.pdf>

1. Overview

None of Yemen's currently four recognized United Nations Educational, UNESCO sites are in Aden. However, Aden's own long history of shared cultural, political, and economic exchanges, however, has left an indelible mark in its cultural heritage and makeup. According to UNESCO field surveys, over 95% of heritage sites in the city have sustained significant damages from conflict related causes.

Aden is the first city in the Arabian Peninsula to establish a museum in the 1830s. However, none of Yemen's currently four recognized United Nations Educational, UNESCO sites are in Aden. However, Aden's own long history of shared cultural, political, and economic exchanges, however, has left an indelible mark in its cultural heritage and makeup. According to UNESCO field surveys, over 95% of heritage sites in the city have sustained significant damages from conflict related causes.

Indian Diaspora

Testifying to longstanding ties during the British colonial period in Yemen there is a vibrant Indian diaspora, largely descendants of a 2,000-strong garrison established in Aden in 1839 but also economic migrants engaging in trade and commerce. The number of this Indian diaspora in Aden grew to a recognized 16,000 in 1955, comprising about 15% of the estimated 100,000 Indians concentrated along the coastal regions in Aden, Al Mukalla, Shihr, Lahj, Al Mukha, and Al Hudaydah. By 2010, their number fell to an estimated 3 – 5,000. Those who remain constitute an important professional subset of Yemen's workforce, and are employed as nurses and hospital staff, teachers and university professors, and members of the free professions (doctors, clerks, Information and Technology (IT) professionals, lawyers, etc.).⁶⁵ However, the Hindu Temples, once numerous and vibrant, now lie either in ruins or in serious disrepair.



Damage to the Turkish Path in Khur Maksar (UNESCO 2019)

Khur Maksar

One of the most famous monuments in Khur Maksar is the Turkish Path Way, also mentioned in some sources as the "Fence" or the "Turkish Wall". It is a wall erected by the Ottomans during their presence in Yemen in the 16th and 17th centuries in order to protect the city of Aden from possible external attacks. It is about three kilometers long. The district is also home to other old fortresses such as Al-Nuba, Al-Garve, and Al Qufi.

Little Aden

Little Aden, located on the western branch of land enclosing Aden's bay, hosts some water-retaining cisterns, a fort, and a church.

Ash Shaikh Otman

In As Sheikh Outhman, on the inner coastline of the harbor, salt works were developed, characterized by the presence of windmills and salt-water drying basins. Until the decline of salt production in the first half of the 20th Century, it constituted an important economic facility and formed a unique man-made landscape. At some distance, is the important cultural heritage site of Qood Sela. This site was once famous, and unique in the Arabian Peninsula, known for the production of china pottery. Artisanal products and the variety of traded goods stand as proof of the central role played by Aden as a node of trade routes linking Yemen through the Silk Road to Afghanistan and Pakistan, and, by sea, with Far East Asia and China.

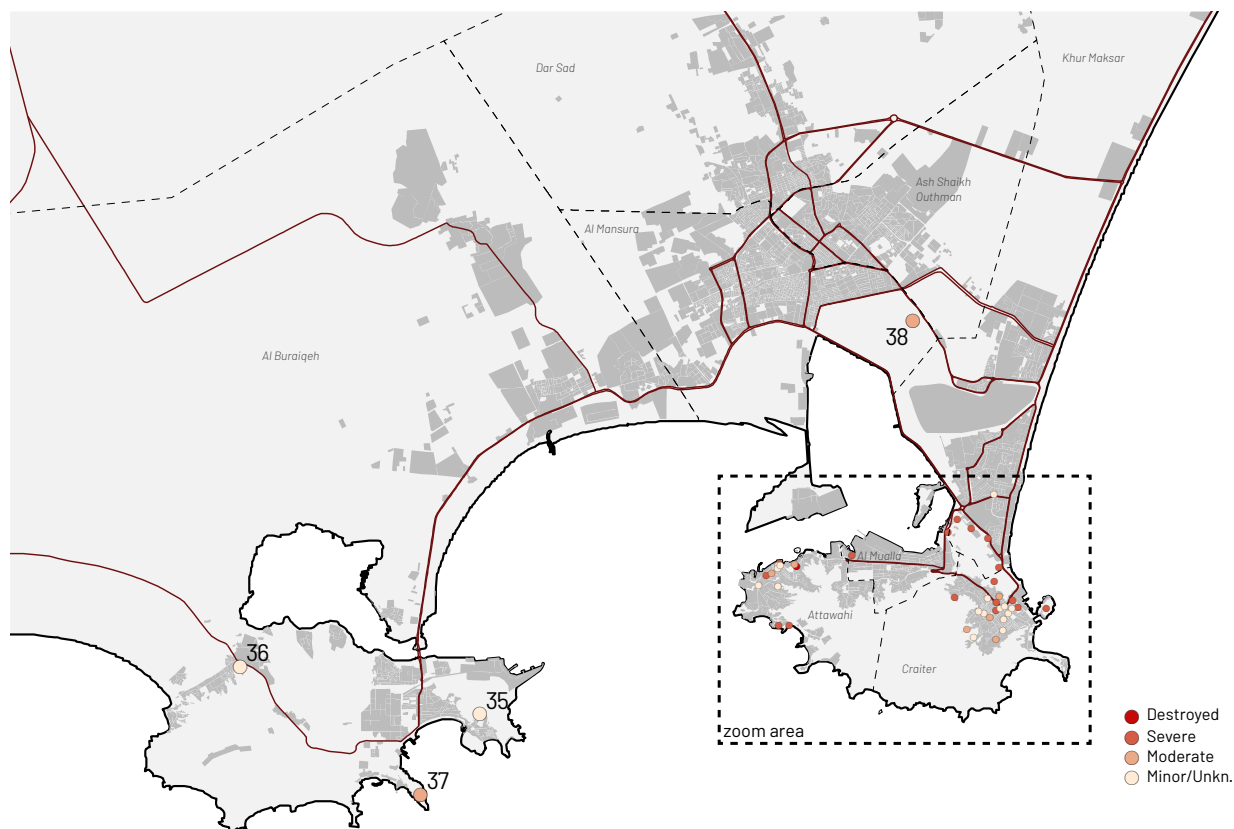
Sira Island

To the west of the old city, on Sira Island, a volcanic outcrop that dominates the old harbor of Aden, is the Sira Fortress. Built, according to local lore, in the 12th Century, it continually served as a military outpost guarding the old harbor. Although, its military significance declined after the Ottoman conquest, it continues to function a military installation and is now owned by the Yemeni armed forces.



State of Power House in Al Mualla (UNESCO 2019)

⁶⁵ Government of India, Ministry of External Affairs, "India - Yemen Relations," 2016, https://mea.gov.in/Portal/ForeignRelation/Yemen_Jan_2016_english.pdf ;See also, Hari Kumar, "India Concludes Evacuation of Its Citizens from Yemen," NYTimes, April 10, 2015, <https://www.nytimes.com/2015/04/11/world/asia/india-concludes-evacuation-of-its-citizens-from-yemen.html>; Indian Diplomacy, "Indian Heritage Sites in Aden," <https://www.youtube.com/watch?v=E22GVIHndIE>



#	Name		
1	Sira Island	Severe	
2	Tawila Cisterns	Moderate	
3	Aden Lighthouse	Minor	
4	Sultanate of Lahj - National Museum	Severe	
5	Military Museum	Severe	
6	Zoroastrian Temple	Unknown	
7	Bazarah National School	Unknown	
8	Tourist Deck Gateway	Severe	
9	Little Ben clock	Minor	
10	Old historical schools for girls	Unknown	
11	Hindu Temple (Elephant)	Severe	
12	Al Eidruss Mosque	Moderate	
13	Al Khadra Fortress	Severe	
14	Al Badri Cistern	Moderate	
15	Brick Kiln Chimney	Minor	
16	Municipality Building	Minor	
17	Al Zaweya Al Refa'aya Mosque	No	
18	Municipality Market	Moderate	
19	Tax Building (Jewish School)	Minor	
20	Home of the sons of Sheikh Mohammed Abdullah (The lawyer)	Minor	
21	Church of St. Joseph	Severe	
22	Legislative Council	Minor	
23	Al-Sulaimani Mosque	Minor	
24	Lotfi Jafar Aman School	Severe	
25	Goldmore Bridge	Severe	
26	Tourist Office	Destroyed	
27	Old Radio Station	Severe	
28	Church of Ras Marbut	Minor	
29	Ba Sahaib Hospital	No	
30	Crescent Hotel	Moderate	
31	Church of Mariana	Moderate	
32	Communications Building	Severe	
33	Ahmed Al Iraqi Mosque	Minor	
34	Marine Police	Minor	
35	Al Khaisa Cistern	Minor	
36	Salahddin Church	Minor	
37	Al Ghadir Fortress	Moderate	
38	Salt Drying Basins	Moderate	
39	Algarve Fortress	Severe	
40	Al Nuba Fortress	Severe	
41	Turkish Path Way	Severe	
42	Alqufl Fort	Severe	
43	School of the sons of the sultans	Severe	
44	Power House	Severe	
45	Tarmom and Bros House	Moderate	
46	Hindu temple (Cow)	Minor	

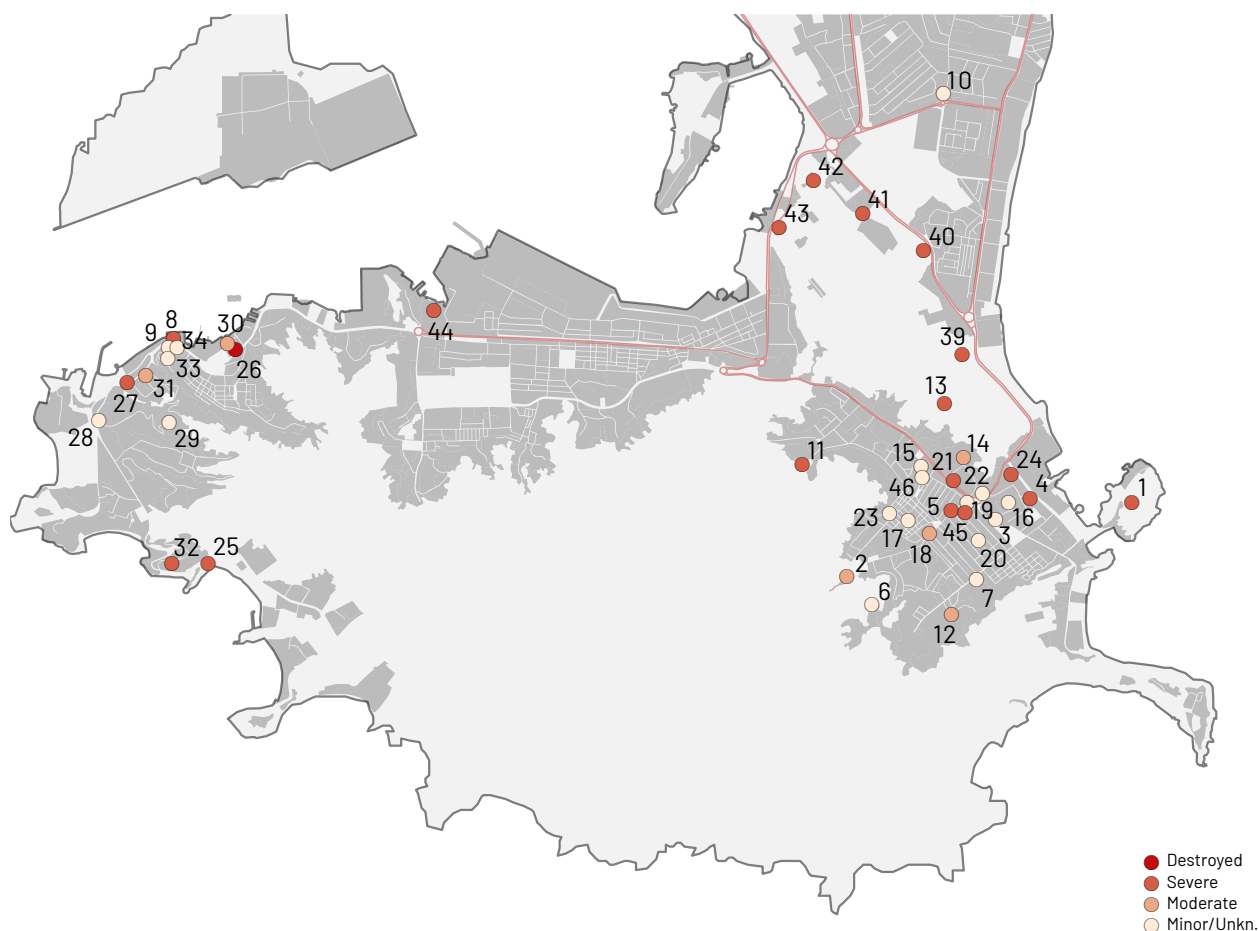
Figure 16: Aden heritage sites.

Most of the cultural and religious heritage sites are located in the areas of Attawahi, Al Mualla and Craiter, UN-Habitat (2019).

Source data: The damage classification is as per UNESCO Site Surveys (2019).

Attawahi and Craiter Districts

Craiter district, the administrative center of Aden, contains several sites of historical importance. Among the most important are the Minaret of Aden, the Palace of the Sultanate of Lahj, the National Museum, the Military Museum, the Rimbaud House, and the Zoroastrian Temple. In 1839 Aden became part of the British India whereupon the new colonial administration launched an ambitious redevelopment plan that transformed these districts' urban fabric. Monuments and structures built during this period, include schools, institutes, government buildings, hospitals, old markets, the headquarters of the British administration, the port of Aden, police headquarters, military sites, and financial institutions. Most are built with an architectural style adapted to the climate of Aden.

Figure 17: Heritage sites in Aden peninsula, UN-Habitat (2019).

Source data: UNESCO Site Surveys (2019).

Damage	# buildings	%	Description
Destroyed	1	2	Total collapse
Severe	17	37	Destruction of ceilings large and clear on the external and internal walls, significant damage to the foundations, bases, etc.
Moderate	9	20	Slightly damaged internal walls, minor cracks and cracks on the walls, collapse of plastering materials
Minor/No/Unkn.	19	41	Broken windows, broken hinges and windows

The windmills and the “Little Ben” clock, the gate of the dock of tourists at the port, and the headquarters of private newspapers, and the building of radio and television are also built in unique architectural features that give Aden its distinct character.

Cisterns of Tawila

Perhaps the best-known historic sites of Aden are the Cisterns (“tanks for storing water”) of Tawila. These are a series of water-catchment tanks designed to collect and retain rain that flows from the Shamsan mountain.

The cisterns also protect the city from periodic flooding. Their original construction dates back to the pre-Islamic polities of southern Arabia, and were most likely built over several historical periods, starting in the fifteenth century BC. Recent archaeological studies suggest that the Himyarite built huge water tanks, which stored about 13,638,275 litres of water, fed by channels of about 250 meters long. Since then, the cisterns have routinely fallen into disrepair and have been renovated several times. The British colonial authorities undertook an ambitious, although not thorough, restoration in 1854 and repaired 13 of the more than 50 cisterns

for a combined capacity of about 75 million liters.⁶⁶ Before the conflict, the Cisterns mainly functioned as a tourist attraction.

Figure 18: Cisterns of Tawila (UNESCO 2019)

⁶⁶ Sir Robert L. Playfair, *A History of Arabia Felix or Yemen, From the Commencement of the Christian Era to the Present Time: Including an Account of the British Settlement of Aden (Bombay [Mumbai]: Education Society's Press, 1859), 6-11; 95.*

2. Impact of the conflict

The recent conflict has severely, though unevenly, impacted heritage sites in Yemen. Despite the special protection afforded to them for their educational, cultural, and religious significance under international humanitarian law, many have been damaged or destroyed either by airstrikes or local offensives.

UNESCO has assessed several heritage sites with a field survey in order to understand how the conflict has affected the buildings. The survey covered 45 sites, among which 43 (96%) are affected. Of these, 42% have major damage and 2% have completely collapsed. The remaining 21% have moderate damage and 35% have minor damage. The assessment observed moderate damage to the historical Cisterns of Tawila.

About half of the surveyed sites are tourist buildings. An additional 15% are religious buildings, and the rest are public service buildings. About 25% of the sites require intervention in the form of consolidation, another 25% require protection in the form of temporary roofing, 15% require maintenance, 35% total or partial demolition due to the level of damage, and one building requires full reconstruction.

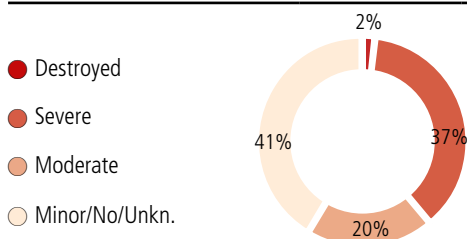
Structures that have been either completely or partially destroyed include many old schools' buildings as well as old houses with a distinctive architectural identity in the Old City. The infrastructure in Old Aden was also severely affected. In Attawahi, the gate of the tourist pier, known as the pier of Prince Wales gate, erected during the British rule, has been destroyed. Its restoration with private funds is currently under consideration. The building of the Ministry of Tourism, also in Attawahi, sporting a unique architectural façade that has also been destroyed.

Similarly, informal settlements and private construction works have mushroomed too close to, and often within, heritage sites, like at the Tawila cisterns, the Zoroastrian temple, the Little Ben clock, the Aden International Airport, and more. Priceless antiquities have also been looted and sold on the black market.

Figure 19: Breakdown of Aden heritage sites by function typology, 2019.

Almost half of the cultural and heritage sites had a touristic purpose.

Type of Function	Building No.	%
Tourist	22	49
Service (Store)	1	2
Administrative	4	9
Religious	7	16
Service	5	11
Cultural	2	4
Residential	2	4
Health	2	4



Source: UNESCO Site Surveys (2019).

Lack of coordination between international and local actors and use of outdated construction techniques are mainly to blame. To make matters worse, there has been a general freeze on rehabilitation and maintenance activities since 2015.

3. Management

Management and care of heritage sites is lacking. While access to facilities – places of worship, museums, theaters, and cultural institutions – remains open, sector experts indicate that it is limited. Loss of documents, archival records, electronic databases, and lack of specialized equipment and knowhow necessary for conservation projects, reduce access and pose a clear threat to the preservation of cultural heritage. Of particular concern are the slums and private construction growing at an alarming pace near or inside Aden's historic sites; at the Cisterns, the Sultan's Palace, the Little Ben clock, the old historical schools of the Girls College in Khur Maksar (established in 1956), and in the facilities of the port areas and the Aden International Airport.⁶⁷

In addition, the intensity of the conflict, the weakening of the national institutions, the fragmentation of political authority, and declining financial backing has shifted attention away from conservation of national heritage to the more pressing humanitarian needs. UNESCO's assessment also revealed that in addition to the damages inflicted by airstrikes, long-term neglect, natural factors (e.g. high soil salinity, a considerable rise in temperatures and humidity) and lack of maintenance exacerbated damage to heritage sites. Responding to UNESCO's assessment, the Yemeni authorities launched a National Strategy for the Preservation of Historic Cities, Sites and Monuments 2016-2020 to address national needs. It remains to be seen how Aden will benefit from this initiative. In January 2019, Aden's authorities proposed the restoration and inclusion of a tourist pier building into the UNESCO as a national landmark. Yet the implementation of the proposal continues to be hampered due to lack of financial resources and expertise.⁶⁸

4. Responses

In July 2015, NGOs collaborating with international partners directly surveyed and documented landmarks affected by military strikes and submitted their findings to the UNESCO office in Qatar. Recently, UNESCO launched a project, implemented in collaboration with the General Organization for the Preservation of Historic Cities in Yemen (GOPHCY) and the General Organization of Antiquities and Museums (GOAM) and Social Fund for Development (SFD) to assess the damage to buildings and monuments in the governorate of Aden. The findings also informed a workplan for immediate and long-term interventions through Cash for Work rehabilitation activities that will commence end of 2019. Sector experts claim that despite the attention it garnered, Aden has not received its share of international support for support and rehabilitation. However, in 2019, a financial grant from the European Union (EU) and UNESCO was announced for the rehabilitation of historic war damaged Yemeni landmarks in Aden, Sana'a, Aden, Zabid, and Shibam.⁶⁹ Aden's portion represents one of the largest shares of the cash-for-work rehabilitation budget.

⁶⁷ KI Survey, June/July 2019.

⁶⁸ Marketing and Information Department, Aden Port Plans to Register Tourist Pier Building in World Heritage Organization, Port of Aden News, January 25, 2019, <http://www.portofaden.net/NewsDetails.aspx?a=219>

⁶⁹ KI Survey, June/July 2019.

8 Housing, Land and Property (HLP)

1. General Overview

Driven by urbanization, demographic pressure, and high inflation, the demand for housing has always been a thorny issue in Yemen even before the current conflict turned it dramatic. Traditionally, Yemen has lacked the domestic stability, institutional framework, and an integrated national housing policy to address the needs of low-income families and overcrowding. The last two censuses, 1994 and 2004 reveal that on a national scale most of the housing in Yemen is characterized by detached individual houses. Recently, however, due to population growth in urban areas, such as Aden whose density stands at 203 persons per hectare, apartment housing is on the rise. Despite this, overcrowding remains a problem. In Aden, approximately 9,500 HHs share housing units and some 65% of HHs live with more than two people in one room.⁷⁰

In Aden, the second master plan for 2005 – 2025, developed as part of the World Bank's PCDPs in 2005, estimated that \$30 million were needed to improve public services and infrastructure. Although the viability of the Master Plan was challenging given the associated high costs, the proceeded as planned until 2010. The eruption of the Yemeni Revolution (Arab Spring) in 2011 put a halt on some activities, which then were abandoned altogether from the intensification the conflict after 2014.

The Master Plan was developed to meet the need of the existing (2005) population of 700,000 in Aden, but also addressing the future needs of the projected demographic growth of 1.5 million by 2025. Based on this forecast, the plan also suggested 15 new neighborhoods in Aden and the construction of new commercial centers in Dar Saad, including the expansion of the existing industrial zones. The planned growth of the city was, for the most part confined to areas north and east of Aden, thus Dar Sad and Al Buraiegh. The plan also included extending protection to delicate and endangered environmental ecosystems.

Housing Finance

Given the underdeveloped infrastructure and the weakness of national institutions in the post-unification period, housing finance in Yemen is in its infancy. For the most part, people build or finance their houses either through their own savings or by obtaining informal loans from better-off family members and friends. A significant constraint is the prohibition to use personal property as collateral against the loans. Loans by commercial banks are available but economic instability and a weak Yemeni rial has limited lending only to the well-off businesses and to a selected group of consumers who can either claim steady incomes, or the ultra wealthy. More often this means only those who have benefitted financially during the crisis or those who have grown rich in emigration.

This type of activities is endemic to the entire banking system of Yemen. In 2005, the CBY issued new capital requirements to curtail speculation and protect deposits. Yet, the large volume of non-performing loans, low capitalization, and weak enforcement of regulations means that the entire banking system holds less than 60% of the money supply, leaving the bulk of the economy to operate with cash.

Housing Credit Bank (HCB), established in 1977, is the main financial institution for lending credit to facilitate building and ownership of housing. It is under joint public and private ownership, with the government owning 93% of its capital and the remaining 7% by private shareholders. Since the start of the conflict, HCB has reduced loans by requiring automatic deduction of repayments from its debtors. This has limited loans largely to wealthy businesses and civil service officials who enjoy a steady income. By presidential decree, HCB is expected to merge with the Cooperative and Agricultural Credit Bank (CAC Bank), but this has yet to happen.⁷¹

Table 2: Clusters of Potential Urban/ National Economic Growth per City

Cities	Clusters of Greatest Prospects for Near Term Productivity Growth
Sana'a	Tourism, handicrafts and traditional manufacturing, private health services, private education services and real estate and construction.
Aden	Maritime, tourism, and manufacturing industries.
Al Mukalla	Hospitality and Tourism; Fishing and Fishing Products; and Construction and Real Estate Development.
Al Hudaydah	Agribusiness; Fishing and Fishing Products; and Industrial Logistics.

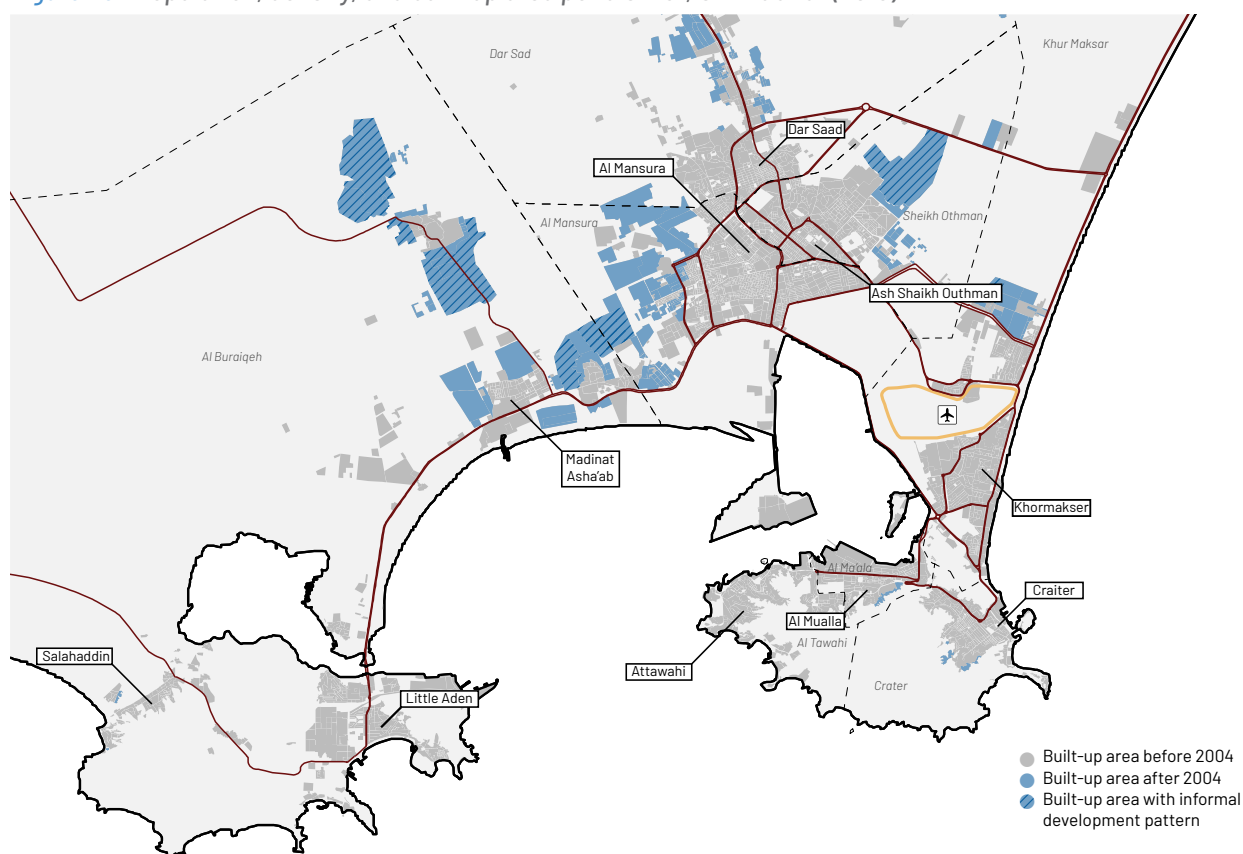
Sources: World Bank, Sana'a: A City Development Strategy, and Aden: Commercial Capital of Yemen Local Economic Development Strategy (2012).

Mukalla: Gateway to the Hadramout Local Economic Development Strategy, and Al Hudaydah: Agro-Industrial Capital of Yemen Local Economic Development Strategy (2009)

⁷⁰ UN-Habitat and the Republic of Yemen, National Report Third United Nations Conference on Housing and Sustainable Urban Development – HABITAT III, (Quito, Ecuador: 2016), <http://habitat3.org/wp-content/uploads/Yemen-National-Report-September-2016.pdf>

⁷¹ Ibid., 34–35. See also, World Bank, Aden: Commercial Capital of Yemen; Local Economic Development Strategy, 2012, <https://ideas.repec.org/p/wbk/wboper/12565.html>

Figure 20: Population, density, and built-up area per district, UN-Habitat (2019).



Urban Expansions 2004-2019

Historically, Aden consisted of urban centres, 'islands', of similar sizes. Looking at the trend of the last 15 years, most growth took place as low density urban fabric, sometimes in the shape of planned development that resulted in the construction of residential compound made of villas or small multi-family condos, sometimes as single houses scattered on the empty land surrounding the city. Satellite imagery analysis suggests that the size of the residential fabric almost doubled in 15 years (+85%) as a result.

Due to geographic constraints, urban centres have seen different development patterns. Where in most districts, and in particular in Attawahi, the density increased, in Al Buraiqeh and Al Manaurah the density decreased significantly due to the urban sprawl. Furthermore, only about 30% of IDPs have been registered to have settled in the new expansion areas, and 70% have been registered to have settled within one of the city's cores.

Table 3: Urban Population and Densities

Districts	Population 2004	Population 2019	%	Area 2014	Area 2019	%	Density 2004	Density 2019	%
Dar Sad	71,300	138,606	+94%	374	714	+91%	191 pop/ha	194 pop/ha	2%
Ash Shaikh Outhman	99,300	176,071	+77%	473	794	+68%	210 pop/ha	222 pop/ha	6%
Al Mansura	116,800	175,345	+50%	480	1,010	+110%	243 pop/ha	174 pop/ha	-29%
Al Buraiqeh	58,800	110,409	+88%	604	1,652	+174%	97 pop/ha	67 pop/ha	-31%
Attawahi	60,700	92,686	+53%	169	169	+0%	360 pop/ha	549 pop/ha	53%
Al Mualla	56,800	84,220	+48%	104	113	+8%	545 pop/ha	745 pop/ha	37%
Craiter	91,600	130,584	+43%	173	183	+6%	531 pop/ha	715 pop/ha	35%
Khur Maksar	45,000	79,079	+76%	439	568	+30%	103 pop/ha	139 pop/ha	36%
TOTAL	600,300	987,000	+64%	2,815	5,202	+85%	213 pop/ha	189 pop/ha	-11%

Source: latest population from HNO 2019, Population 2004 from Aden Masterplan 2006 and Area calculation from analysis satellite imagery available on Google Earth (2004-2019).

Correspondingly, this has led to different hosting conditions for IDPs. Hosting types require different responses, that can be broadly defined as follows:

a. Dispersed settlements

Dispersed settlements are likely to be built on land not owned by the occupant, and may not be officially recognized. On the short term, protection support related to housing, land and property rights as well as shelter upgrading response would be required. On the medium terms, these types of settlements would benefit from local area planning, as well as roads and public space upgrading. More research on land and land rights is required here to tailor the support

b. Rented accommodations

Cash for rent in addition to livelihood programs would be in place here. Care should be taken to make agreements with landlords in these areas in order to prevent rent inflation, which in a restricted rental market could undo the benefits of rent support.

c. Host families and other types of accommodations

Host families (relative and non-relative) appear to mostly be located in areas with individual (non-apartment building) houses. This has likely to do with the size of the houses. In these areas, community development programmes would be appropriate that could help upgrade markets, infrastructure and public spaces so that the additional strain of IDPs does not lead to a decrease in living standards.

Locating these hosting types within Aden, we can identify the following areas:

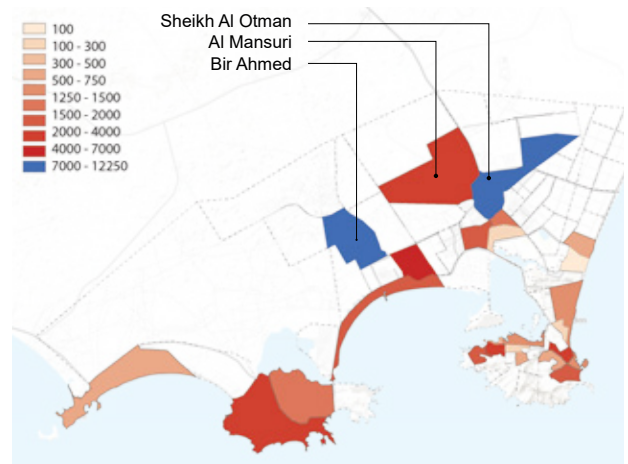
Attawahi, Al Mualla and Craiter

In these areas, which developed during British Rule, geographic constraints and the strategic location next to the port area led to a densification process, leading to a prevalence to multiple-story buildings with apartments owned by landlords (rather than family-owned individual dwelling-units). In these areas, IDPs almost exclusively rent apartments as shown in the diagram on the right. Adjacent to these historical areas, however, there has been significant unplanned development of housing units on the mountain slopes, even in recent years and mostly by poorer families, where hosting by families has taken place as well.

Ash Shaikh Outhman and Al Mansura

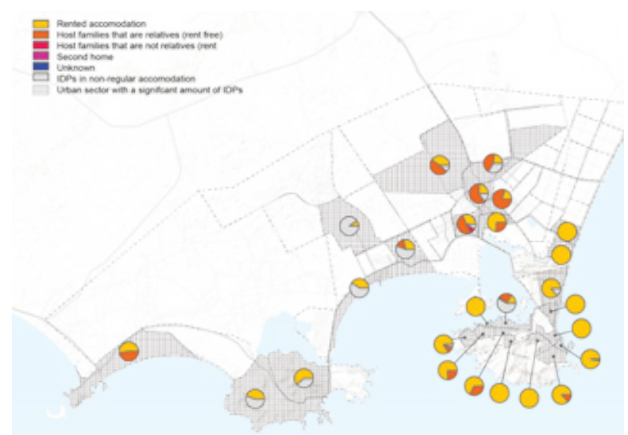
On the main flat mainland, the old urban cores of Ash Shaikh Outhman and Al Mansura have been restricted mainly by small industries to their south. The planned areas close to these commercial activities have densified as well, with many multiple story apartment buildings. On the axis that stretches along the north-south corridor connecting Aden to Lahij, residential areas and small factories, warehouses and commercial buildings emerged and medium-large, as well as a satellite city called Green City started in 2004 and seems to have stopped in 2014.

Figure 21: IDPs residing in regular accommodation, UN Habitat (2019).



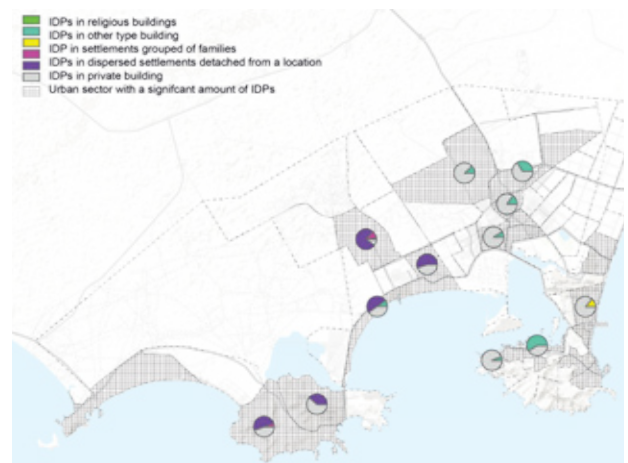
Source: IOM DTM Round 37

Figure 22: Urban sectors with significant amount of IDPs, UN-Habitat (2019)



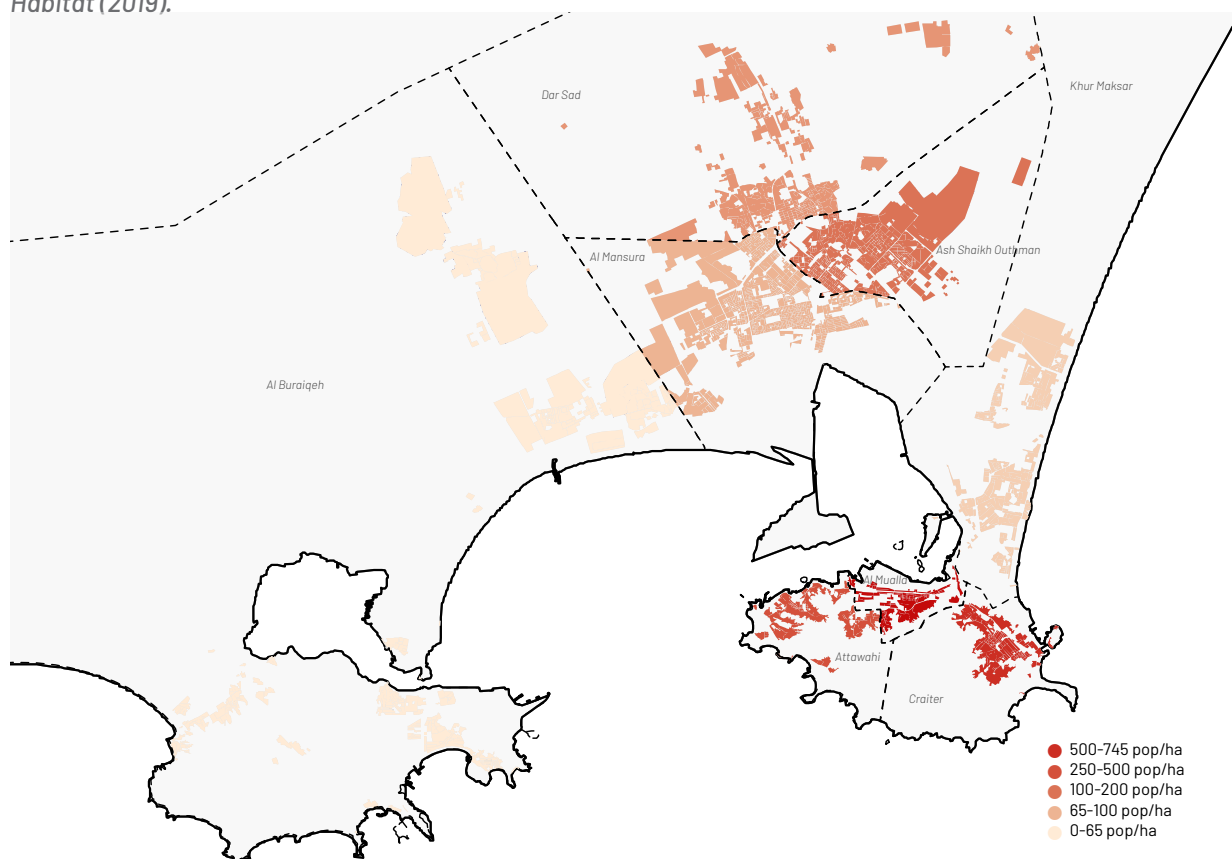
Source: IOM DTM Round 37

Figure 23: IDPs residing in non-regular accommodation, UN Habitat (2019).



Source: IOM DTM Round 37

Figure 24: Urban densities in different districts, UN-Habitat (2019).



Source: Yemen HNO 2019

Al Buraiqeh, Bir Ahmed village

Another infrastructural connection heads north-west from Aden towards Taizz. Here, recent developments have been mainly residential, around the original rural village of Bir Ahmed, characterized by a very low density apart from a few exceptions of small compounds with five-storey buildings. Land between the two infrastructural axes is known for the presence of groundwater, with farms and water wells as it lies in a wadi. This area hosts the largest number of IDPs living in dispersed settlements.

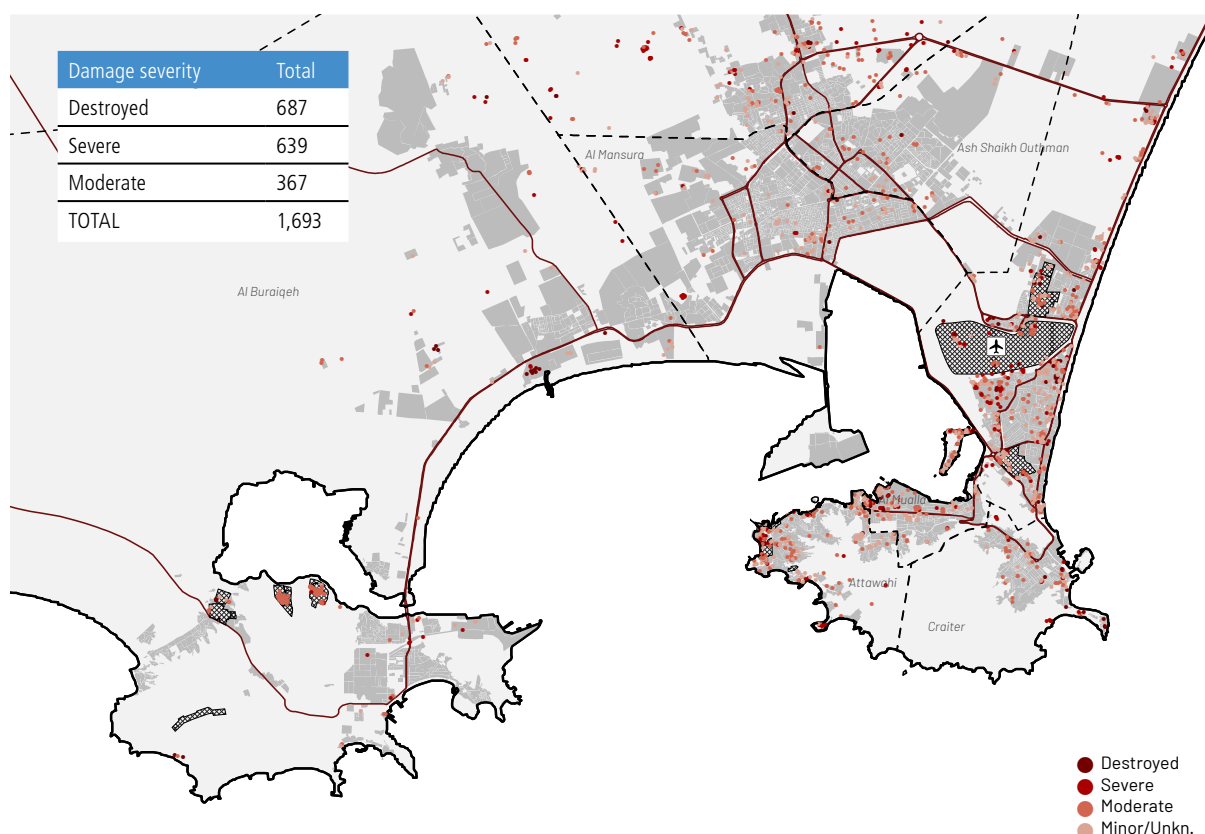
Khur Maksar

Aden city is expected to grow further, and the area located along the coastline to the north of the airport on the road towards Zinjibar is already demarcated with a regular grid of roads for new developments. Although the area has some IDPs in rented locations, there are few informal settlements, even though the location is strategic. Likely reasons are the security situation because of its situation at the frontline at the bottleneck of Aden airport, and because of the demarcation of roads on the ground very clearly indicates a claim by landowners.

2. Current State

The housing market has experienced similar slumps. Rapid urbanization, poverty, unemployment, and increasing numbers of IDPs and returnees have led, instead, to a surge of slums and informal housing. Major cities like Aden bear the brunt of such trends given their status as Yemen's economic mainstay. While the demand is high, the downward economic trend means that few can afford buying, financing, or even renting. It is estimated that some 60% of Yemen's population lives in informal settlements that are associated with poverty, marginalization, and precarious conditions.⁷² The Ministry of Public Works and Highways (MPWH) defines informal settlements into two types; squatters and slums. The former are settlements that lack access to basic urban services and are not included in any formal urban plans. The latter are further subdivided into legal and illegal types.

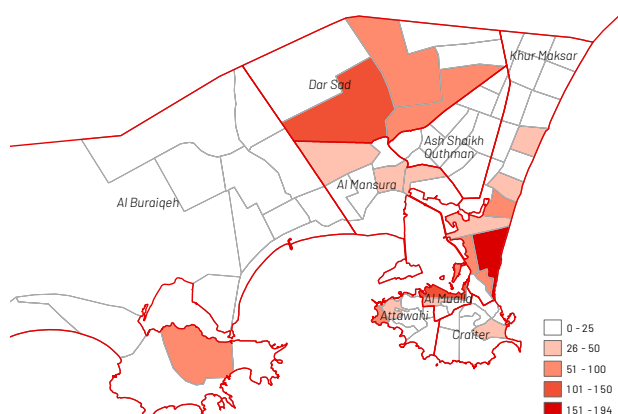
⁷² Republic of Yemen, Republic of Yemen National Report: Third United Nations Conference on Housing and Sustainable Urban Development.



The legal type are those that have been built on the owners own land depending on whether the land itself is zoned for such purpose or not. The illegal type, on the other hand, is the occupation and building of tenements on vacant land, whether they are zoned or not, including valleys, hills, and/or mountains.

The legal type prevails in rural areas, where most land is privately owned. The illegal types, however, dominate in and around major urban areas where land is owned by the government. While both have fallen prey to uncontrolled urban sprawl, the issue is far more severe in urban areas where public land suitable for affordable housing is scarce.

Figure 25: Damage assessment in Aden (above) and destroyed sites per urban sector (below), UN-Habitat (2019)



Source: Satellite damage assessment JRC January 2019.

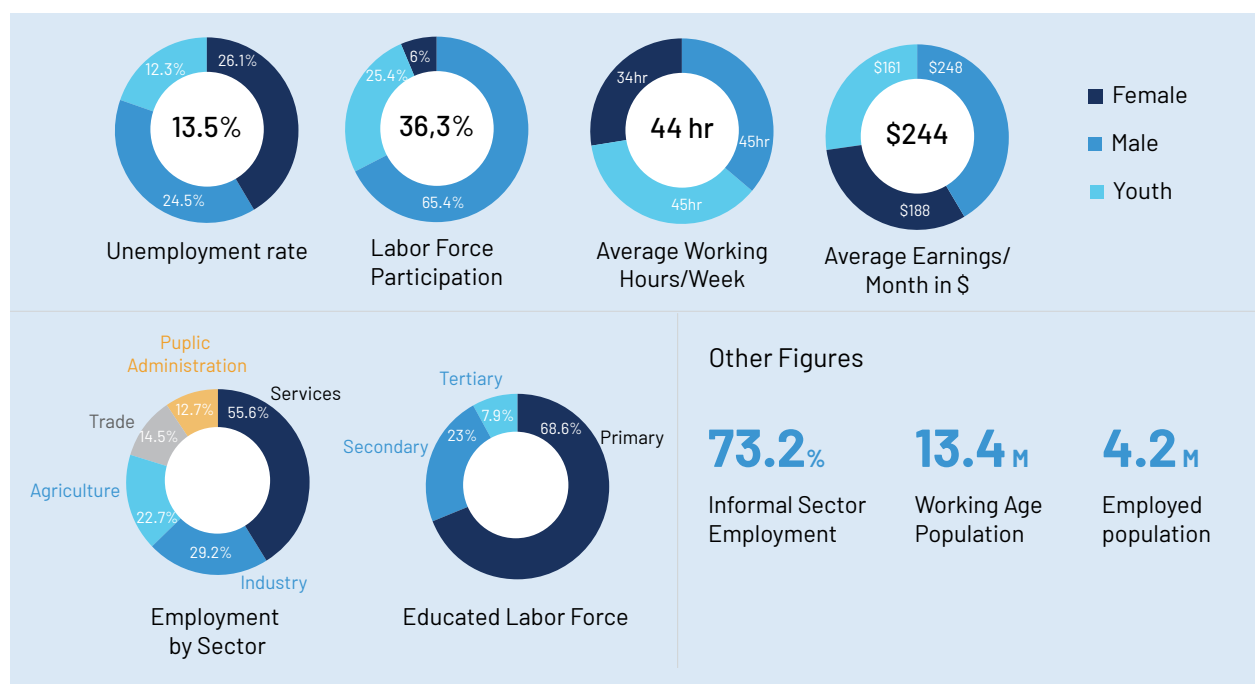
The conflict has severely damaged parts of the housing stock as well. Satellite damage assessments suggests that at least 1,693 structures were damaged during hostilities. A verification of the damage by the participants at the joint Analysis and Recovery Planning Workshop has confirmed a total of 12,260 houses damaged by October 2019. The area with the highest concentration of damages is in neighborhoods that lie in proximity to key government and economic sites. These includes Khur Maksar, Al Mualla and Attawahi. For instance, 341 houses have been already rehabilitated in Attawahi, although this represents a fraction of the total 1,270 damaged in that district.

Although the Public Works Office in Aden oversees rehabilitation projects, its work remains underfunded. An estimated USD166 million is needed to rehabilitate the aforementioned total of 12,260 houses. Surveys suggests that if the houses are not rehabilitated in the near future, the damage will further increase due to the weather conditions and wear and tear. Approximately 73,560 individuals will be affected as a result.

Highlights

- Aden's economic infrastructure is unevenly spread across its eight districts with the port facilities and industry at a more sophisticated state. Traditional, light industries, like textiles, have declined substantially after the conflict intensified in 2015 and others are nearly defunct.
- Shipping remains the most active sector of industry. Despite damages inflicted during sporadic conflict the port remains fully operational. Given conflict duration, exports are virtually non-existent. In contrast, imports have dramatically increased, consisting mostly of foodstuffs and construction materials.
- Fishing, once a major source for the national GDP, has declined considerably. Among the many contributing factors accounting for the decline are securing proper documentation and licensing, funds for equipment such as boats and nets, and limitations placed on the number of operational vessels.
- The financial sector has been severely handicapped by the CBY lack of access to credit and absent relationship with international financial institutions, which, in turn, has impacted its ability to trade and halt the manifestation of parallel financial transactions. Informal money networks, private institutions, and hand to hand transfers are favored over banking transactions. The Craiter district, where most government is located, fares better than the other seven districts as reported by CFPs.
- Conflict duration has resulted in severe losses reflected in labor, market confidence, inability to pay salaries for civil servants, investments. Casual work and safety nets (e.g. pensions and savings) constitute primary sources of income followed closely by salaries and informal financial assistance by loans, family members, and relief organizations as reported by CFPs.
- Small-scale projects funded through cash-for-work aim to revitalize local economy and improve quality of life

Box 1: Eve-of-Conflict National Key Figures⁷³



⁷³ ILO, Labor Force Survey, 2013-2014.

1. Overview

Favored by its geographical location, Aden has historically functioned as one of the main economic hubs in the southern Arabian Peninsula. Aden's strategic significance increased during the British colonial period as one of the busiest refueling stations in the world, a global transit point, and a major regional transportation hub. In the early 20th Century, Aden became a notable center of coffee and salt production. In addition, fishing, potash production, and agriculture were also well represented and considered significant sources of livelihoods.

The local economy of Aden differs from the rest of the country in several ways. As a former British colony, and subsequently capital of the PDRY, the gradual modernization of physical infrastructure and services were major factors for the emergence of business and commerce. These, in turn, encouraged the manifestation of an influential and substantial middle class. This segment of society was the catalyst for the later development of political parties, labor movements, and independent voluntary associations.

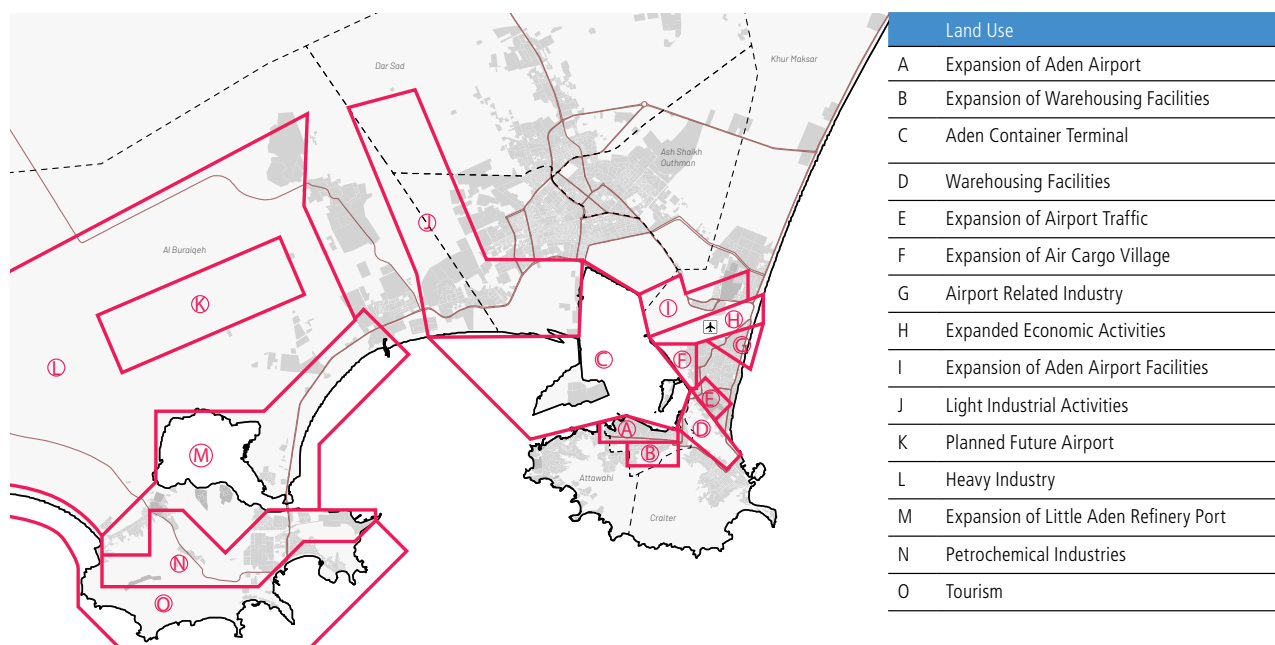
Since 1990, the AFZ has enhanced its role as the economic and commercial capital of Yemen. Heavy investments by the GoY and foreign donors saw the expansion of port and airport facilities and the overall infrastructure which had been damaged by the civil war in 1994. The port facilities, the mainstay of economic activity in Aden, received the bulk of these investments. The maritime sector remains Aden's most promising growth cluster. The ACT was opened in March 1999, adding to the already existing industrial complexes centered on oil refineries operational since 1954. To accommodate intermodal freight transport ships, the channel was dredged to a depth of 15 meters. Centered in the Al Mualla wharves, the port has the capacity to handle over 5.5 million tons per year. It consists of the ACT, the Mualla Multipurpose and Container Terminal, the Oil Harbor at Little Aden, the Aden Gulf Terminal and Passenger Terminal, as well as bunkering and anchorage areas at the outer harbor. This dramatically increased the volume of transshipped good between 1997 and 2001 by 28-fold.⁷⁴

Prior to the conflict, Aden outperformed other urban areas of Yemen in job creation. Although it accounted for only 3.6% of national employment, Aden's share in three key economic activities, mining and quarrying, transportation and storage, and real estate stood significantly higher than the national average, followed by fishing and manufacturing. But while it enjoys high labor force participation rates (above national average 36%), it simultaneously possesses relatively high unemployment rates (above 13.5%).⁷⁵

⁷⁴ The World Bank Group, Republic of Yemen: Port Cities Development Program Project, Paper Drafted by Sameh Wahba, (Beirut: Lebanon, 2004), 4.

⁷⁵ Ibid.

Figure 26: Aden Free Zone Sector Masterplan, UN-Habitat (2019).



Source: World Bank, Aden Local Economic Development Strategy, 2008.

2. Shipping

The first formal port in Aden was built in the Craiter district and consisted of warehouses and a customs post. As trade increased there was a conscious shift of activities to the more sheltered main harbor in Al Mualla which offered more opportunities for expansion. By 2002 about 850 container, 650 tanker and 400 general and bulk cargo vessels called on the port. The increase in shipping traffic reflected an ambition to turn the port into a major transshipping hub and warehousing and re-export center in the region. Consistent with this vision outside investments and partnerships became necessary. In 2008, the Dubai Ports World (DPW), a public UAE company, took over management of the port of Aden. However, investments failed to materialize and ultimately the DPW did little to revitalize the port. In 2012, GoY terminated the contract with the DPW and assumed direct control of the port's facilities.⁷⁶ In 2013, China Harbor Engineering Company Ltd. and Yemen Gulf of Aden Ports Corporation signed an agreement for a \$507 million project funded by the Chinese government to deepen and expand the ACT.⁷⁷ The Chinese government also reached an agreement with GoY to build coal and gas-powered power plants.⁷⁸

Figure 27: Containers Loaded and Discharged at the Port of Aden, 2015 – 2019

Containers Loaded and Discharged at Port of Aden, 2015-2019



Source: Port of Aden, 2020.

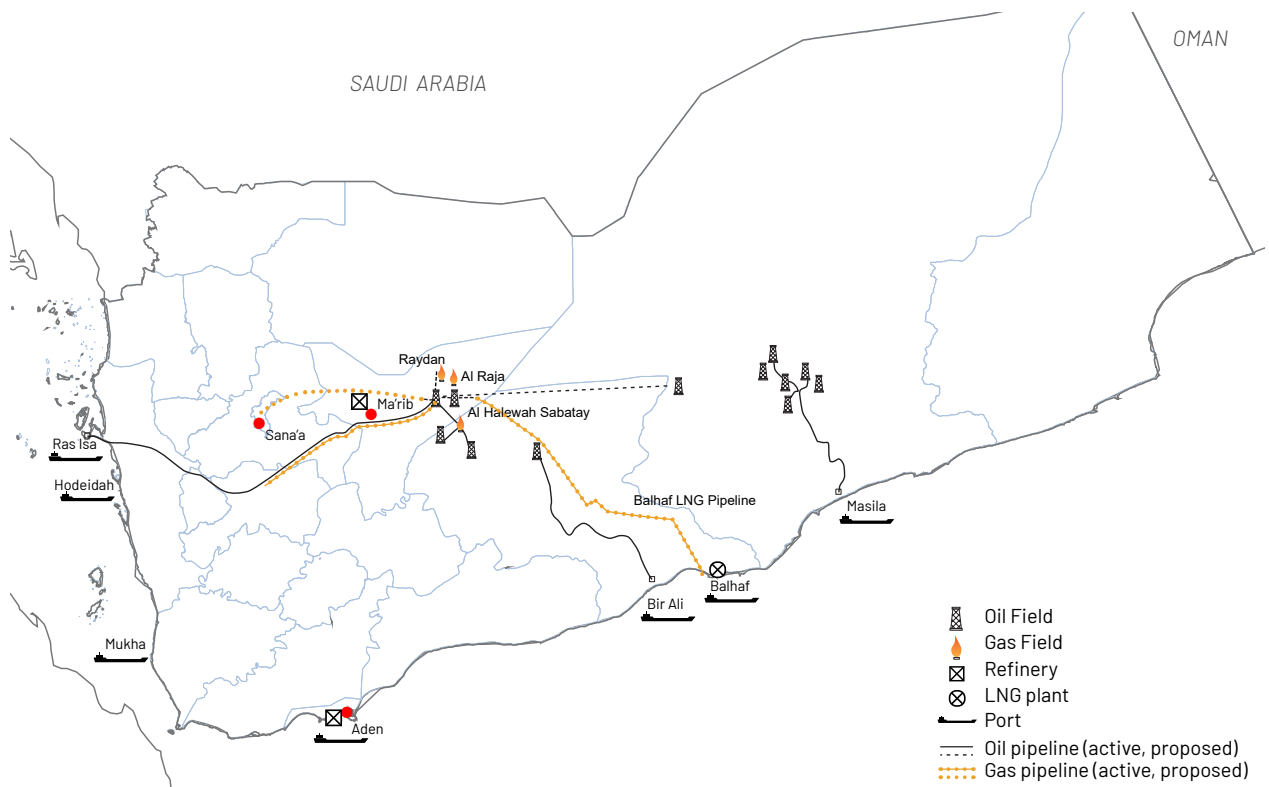
Prior to the conflict, most of the cargo loaded and unloaded in Aden consisted of oil, respectively representing 95% and 68% in terms of total tonnage. Non-oil dry cargo represented a negligible amount. This disparity led to trade gaps and imbalances. According to official Port of Aden data, the port facilities have remained consistently busy throughout the conflict. Shipping traffic came to a halt when the conflict reached Aden between March and July 2015, but business as usual was restored to pre-March levels by September of the same year. By the end of 2016, total freight tonnage processed through Aden ticked up a slight 1.7%. In subsequent years, however, the percentage increase in relation to 2015 jumped by 23% in 2017 and 42% in 2018. Until April 2019, freight volume by Gross Registered Tonnage (GRT) exceeded the 2018 levels for the same period by 11.5%. If the same numbers hold steady and barring any major political disruptions, FY2019 may well register yet another record rise in freight volume", change to.. "the numbers are increasing steadily, FY2020 registered another record rise in freight volume. The percentage increases reflect Aden's status as a temporary capital and as a free trade zone, unique in Yemen, but it is also a product of wider conflict dynamics. It has benefitted from the decline of shipping traffic in the Red Sea port of Al Hudaydah which has shifted the focus of main commercial activities and, partially, the relief aid to Aden.

⁷⁶ Sana'a Center for Strategic Studies, Beyond the Business as Usual Approach: Combating Corruption in Yemen, November 2018, http://sanaacenter.org/files/Rethinking_Yemens_Economy_No4_En.pdf on 26/5/2019. GoY had to subsequently pay a hefty fine for breach of contract.

⁷⁷ World Maritime News, Yemen and China Enter Aden Port Development Agreement, November 15, 2013, <https://world-maritimeneews.com/archives/97733/yemen-and-china-enter-aden-port-development-agreement/>

⁷⁸ Reuters, "China to Build Power Plants in Yemen, Expand Ports," November 16, 2013, <https://www.reuters.com/article/us-yemen-china-power/china-to-build-power-plants-in-yemen-expand-ports-idUSBRE9AF05A20131116> on 04/06/2019

Figure 28: Oil fields and pipelines in the region. There is no significant oil pipe that ends in Aden, UN-Habitat (2019).



Source: Small Arms Survey (Fault Lines: Tracking Armed Violence in Yemen, 2010) with updated information of US Energy Information Administration.

3. Oil

The conflict has dramatically affected the energy sector. Before the conflict, oil income represented an estimated 75% of government revenue and 90% of export revenues.⁷⁹ Yet, the conflict caused the cessation of all production in the national oil and natural gas field and the departure of all foreign firms operating in Yemen due to worsening security reasons. As a result, production declined drastically. If before the conflict, in 2014, Yemen petroleum and other liquids' production amounted to 125,000 barrels per day (bbl/d), in 2018 it declined to a negligible 16,000 bbl/d. Similarly, natural gas fell from 328 billion cubic feet (Bcf) in 2014 to 17 Bcf in 2017.⁸⁰ Furthermore, following the split of the country into two, Sana'a- and Aden- dominated, halves, the former took control over the capital and the oil terminal of Ras Issa on the Red Sea coast, while the latter took possession of the oil field in Shabwa and Hadhramaut.⁸¹

Of these the Masila Basin in East Shabwa holds the 80% of the proven total Yemeni oil reserves

In the summer of 2016, production ticked upward to about 50,000 bbl/d and some limited crude was exported later in the fall to China, Thailand, and, very little, to Italy. These levels, however, did not constitute a resumption of operations to pre-conflict levels. Although a 2010 United States Agency for International Development (USAID) estimate that a depletion of oil reserves in Yemen would occur by 2010 proved premature, there is very little hope that appreciable levels still exist. Despite this, Yemeni officials have routinely made pronouncements about increasing production. For instance, Safer, an oil company owned by the IRG publicly expressed expectations in October 2019 to ramp up pipeline throughput to 15,000 bbl/d, up from the current 5,000 bbl/d. As of 2018, the only foreign company working in Yemen is the Austrian OMV operating in Shabwa's Haban field.⁸²

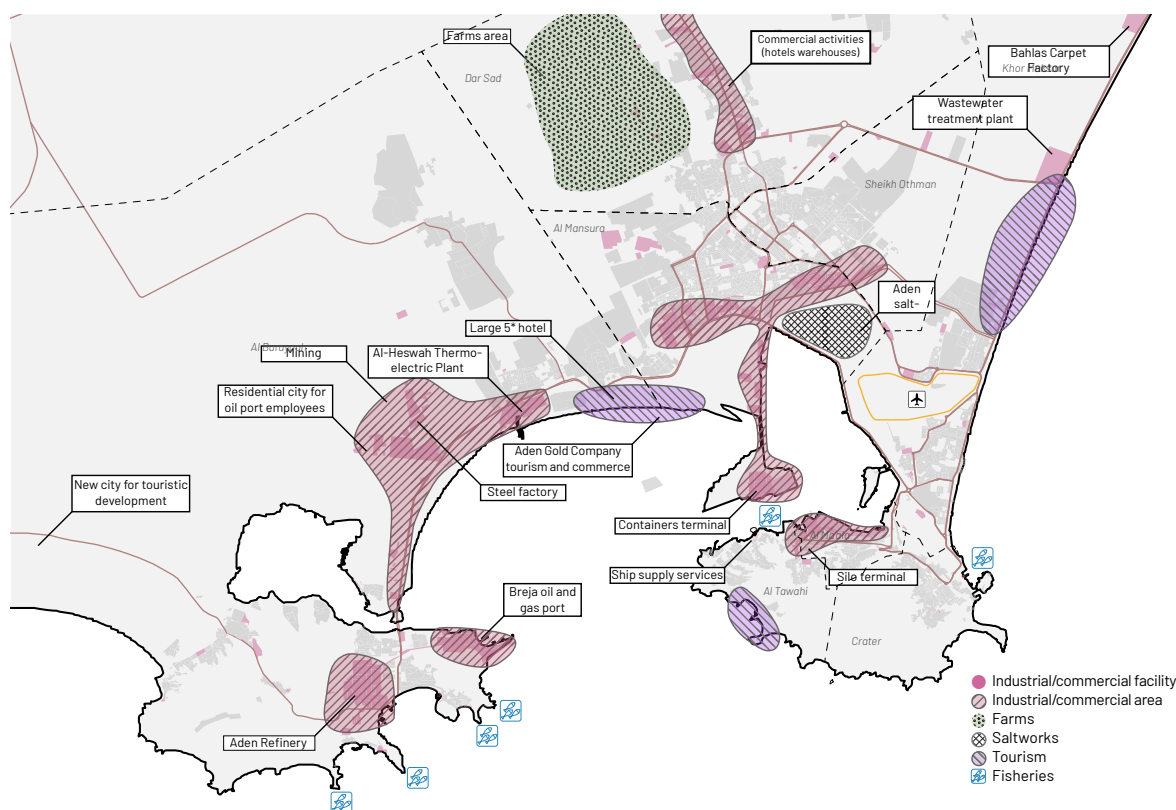
⁷⁹ USAID, Property Rights and Resource Governance: Yemen, USAID Country Profile, 2010, https://www.land-links.org/wp-content/uploads/2016/09/USAID_Land_Tenure_Yemen_Profile-1.pdf

⁸⁰ US Energy Information Administration, Yemen Update, April 23, 2019, <https://www.eia.gov/beta/international/analysis.php?iso=YEM>

⁸¹ Reuters, "Update 1 - Yemen's Safer Oil Company Resumes Pumping to Arabian Sea Terminal - Official," October 16, 2019, <https://www.reuters.com/article/yemen-economy-oil/update-1-yemens-safer-oil-company-resumes-pumping-to-arabian-sea-terminal-official-idUSL5N27114I>

⁸² US Energy Information Administration, "Yemen Update".

Figure 29: Aden production zones, UN-Habitat (2019)

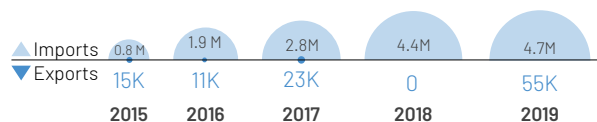


Source: Satellite images, google Earth 2019.
The space between the original urban "islands" of Aden are largely being occupied by small and medium sized industries. As these are the most valuable areas, there is significant competition for space in these lands.

4. Industry

The main industrial areas in Aden are the oil refinery at Little Aden, the light industry Al Durain and the AFZ. Expansion and infrastructure improvements conducted under the auspices of World Bank's Port Cities Development Program launched in July 2002, sought to expand the number of light industrial complexes at Al Durain to 165, bring up the annual capacity at the oil refinery to approximately 150 million metric tons, and turn the Free Zone into a hub of international trade. In addition, there are eleven saltworks in Aden which until recently processed, refined, and packed 150,000 metric tons of salt a year.⁸³

Figure 30: Export and Import Tonnage Passing Through Port of Aden, 2015 - 2019



Source: Port of Aden, 2020

Manufacturing, chemicals, and light industry; wood production, plastic footwear, paint, food, beverage, and tobacco products, also counted for a share in Aden's economy. Jointly, these dominated industrial production between 1998 and 2002, but have since declined.

The intensification of the conflict in 2015 caused a significant decline in commercial activity. Crude petroleum production decreased by 80% owing to the virtual halt of all related activities and the departure of international oil companies. The concomitant decline in Liquefied Natural Gas (LNG) production brought up that decline to 84.5%. This brought down the total value of the national oil sector by about 76% and caused a national economic loss of \$3.6 Billion in revenues. Refinery work and exports came to a halt in June 2015, which, in turn, impacted workers' jobs and livelihoods. Since then, owing to the freeze in conflict frontlines, national production selectively picked up again with crude oil and gold accounting respectively 41% and 32% of total national exports in 2017; followed by fruits and vegetables and scrap metal. Yet, according to Aden Port statistics, exports from there registered a meager 15,025 tons in 2015 for only wheat bran and salt, with approximately similar numbers for 2016 and 2017, but no available numbers for 2018. In contrast, imports ballooned to more than 4.4 million tons in 2018 from slightly less than 800,000 tons in 2015. Foodstuffs and construction materials outpaced any other commodities.

⁸³ Mowafa Taib, The Mineral Industry of Yemen, United States Department of Interior: United States Geological Survey, April 2009, <https://prd-wret.s3-us-west-2.amazonaws.com/assets/palladium/production/atoms/files/myb3-2015-ym.pdf> (accessed September 20, 2019).

According to data published by the Port of Aden authorities, total tonnage unloaded in the first three months of 2019 have already outstripped the total tonnage unloaded for the same period in 2018 by 8% for foodstuffs and 33% for construction materials. The recent focus on dry cargo represents a reversal of the pre-conflict emphasis on oil. Furthermore, the dominating share of imports on construction and foodstuffs reflects not only the decline of the national industrial productivity but also underscore the severity of food insecurity in Yemen.

5. Fisheries

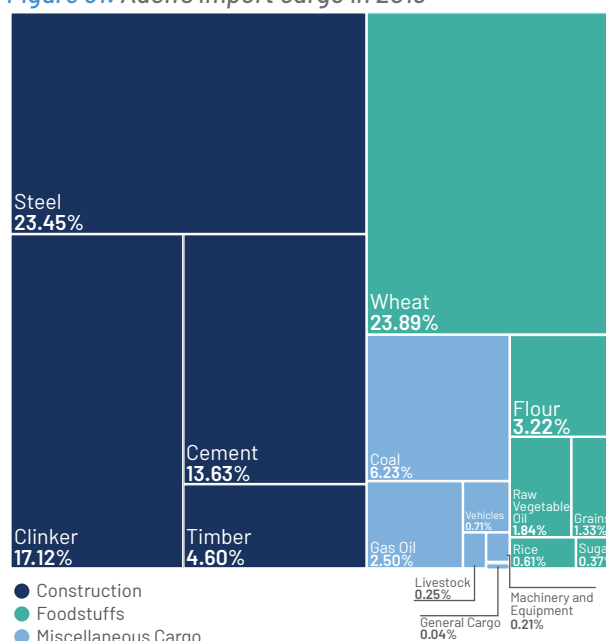
Until 1999, fisheries came under the purview of the Ministry of Agriculture before becoming the responsibility of the newly established Ministry of Fish Wealth (MFW).⁸⁴ Since the unification of Yemen, national policy has encouraged investments in the fisheries sector with an eye toward increasing total yield catch of the industry. The fishing industry is dominated by small-scale sector. The gross value of fisheries input in 1999 was valued at \$125 million, including \$40 million in imports and \$19.8 million in exports.⁸⁵ Ten years later, in 2009, the fisheries sector contributed \$26.24 billion or 1.9% of the national Gross Domestic Products (GDP). After oil and gas, fisheries constituted the largest export earner and accounted for 1.5% of the national labor force in the pre-conflict era. Indeed, of 2014, small scale fishing supported the livelihood of some 83,000 fishermen and 583,600 of their dependents for a total of some 667,000 people.⁸⁶

Following the eruption of the current conflict, severe food deficits, elevated hunger, and risk of starvation have caused a virtual collapse of assets needed to secure livelihoods. Fishing, like agricultural production, has plummeted by more than a third of its pre-conflict levels and caused the displacement of many fishermen and their dependents from conflict insecure areas.⁸⁷

Since 2015, conflict intensity has resulted in a severe depression in the fisheries sector. Individuals whose primary income relied on fishing have been displaced and many fishing companies have gone out of business. Those that remain are hamstrung by government bureaucracy and inaction to support the industry. Bureaucratic obstacles include contradictory regulations, burdensome regulatory fees, and an apparatus unresponsive to the industry's demands. The situation in Aden, however, appears, until recently, less severe than elsewhere since many fishermen from other coastal cities seek new fortunes there.⁸⁸

In Aden, KI interviews conducted in June/July 2019 report the existence and operation of a significant number of fishing vessels in three districts of the city calling port in six of the city's docks; 5,000 in Attawahi, 1,500 in Craiter, and 6,200 in Al Buraieq. In addition, the fishing industry as a whole is also represented by two fishing farms and four fish processing and packaging farms. In addition, there are also four icing plants, which process, and store catch before exporting it from the city for either domestic consumption elsewhere in Yemen or transshipped to Chinese and European markets.

Figure 31: Aden's import cargo in 2018



Source: Port of Aden, 2020

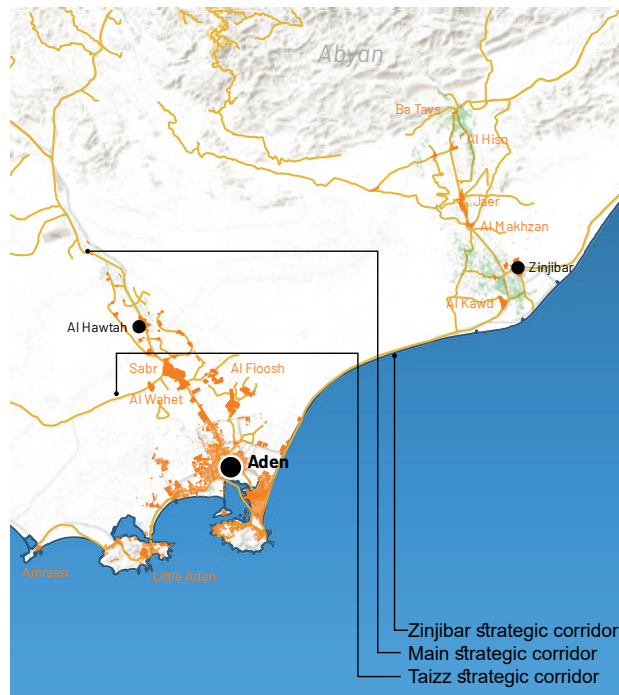
⁸⁴ Natheer Alabsi and Teruhisa Komatsu, "Characterization of Fisheries Management in Yemen: A Case Study of a Developing Country's Management Regime", Marine Policy 50, (2014), 89-95.

⁸⁵ FAO, Fishery Country Profile - THE REPUBLIC OF YEMEN, February 2002, <http://www.fao.org/fi/oldsite/FCP/en/YEM/profile.htm>

⁸⁶ Natheer Alabsi and Teruhisa Komatsu, "Characterization of Fisheries Management in Yemen: A Case Study of a Developing Country's Management Regime".

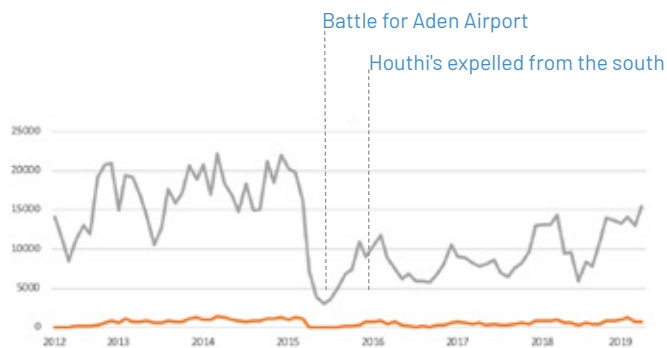
⁸⁷ Paul Ireland, Yemen: How Fishing Communities Are Fighting Back, NRC, <https://www.nrc.no/shorthand/stories/yemen--how-fishing-communities-are-fighting-back/index.html>

⁸⁸ Ibid.

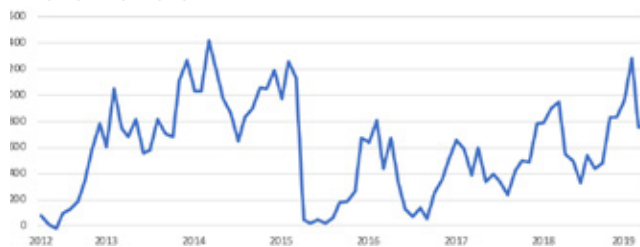
Figure 32: Aden in the region, UN-Habitat (2019).

Source: Esri Topographic basemap 2019.

Aden has historically functioned as one of the main economic hubs in the southern Arabian Peninsula. It is connected to the rest of the country through three main corridors; one connecting through the agricultural hinterland in Lahj towards the centre of the country. This presents the city with three economic growth corridors in which development will take place, planned or unplanned. The informal settlement formation in Ber' Ahmed within Buraikah can be explained by this. Furthermore, these three corridors are the strategic lines of control of the economic viability of Aden, controlling its capacity to supply the hinterland, and to receive goods for export. On a city-scale, nightlight output has a correlation to the GDP, and can provide useful insights into urban recovery, or to understand the presence and appearance of new areas. Between 2014 and 2015 Aden has seen a significant drop of about 50% of nightlight output, indicating that most likely the economic output dropped significantly during this time. Furthermore, even Aden emitted in general much more light than Zinjibar, the graphs followed a similar loss and recovery pattern, suggesting that their economies continued to be integrated during the course of the conflict.

Figure 33: Nightlight output comparison Zinjibar and Aden, UN-Habitat (2019).

Nightlight output in Aden and Zinjibar. National Centers for Environmental Information.



Nightlight output in Zinjibar alone.

unit: nanoWatts/cm2/sr. Source: Earth Observation Group, National Oceanic and Atmospheric Administration (NOAA), NCEI. Data processed by PNGK.

Year	2013	2014	2015	2016	2017	2018
Zinjibar	+231%	+26%	-60%	-10%	+31%	+41%
Aden	+14%	+11%	-48%	-16%	+8%	+30%

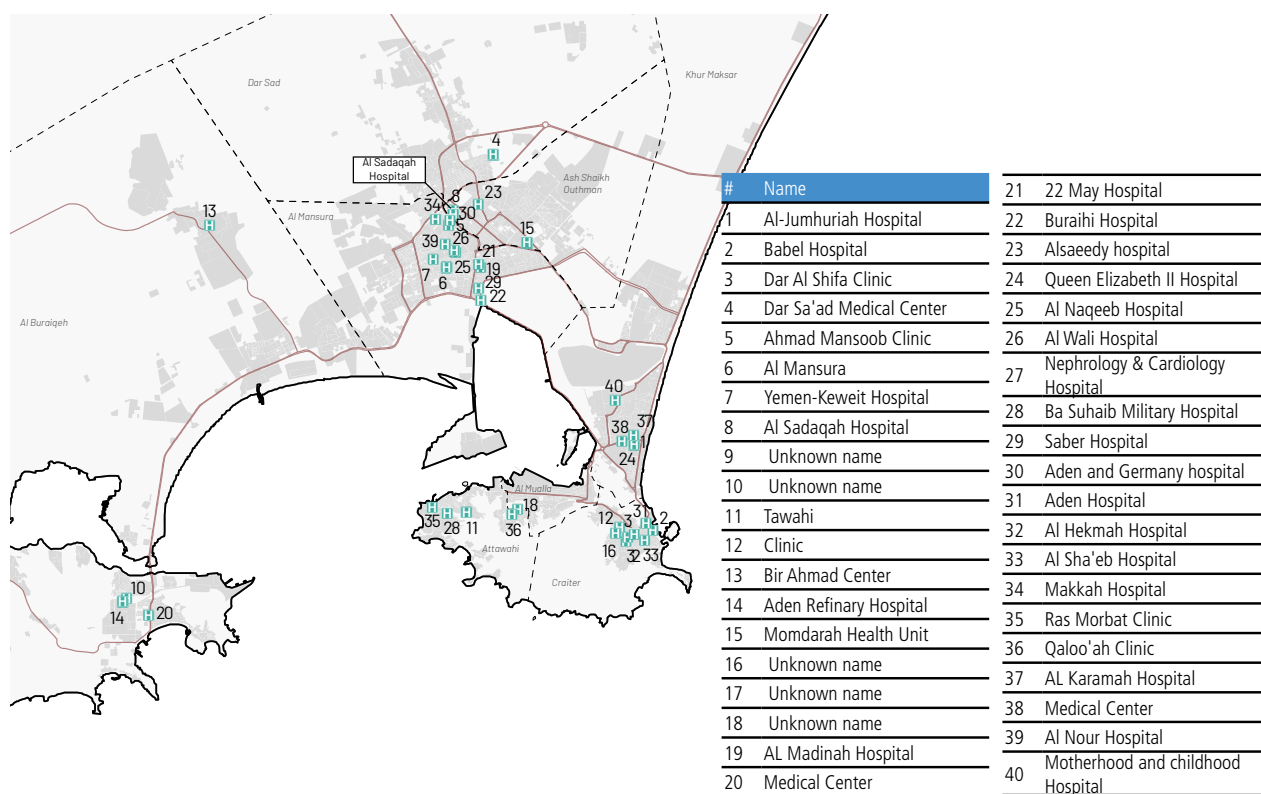
Year-on-year nightlight average nightlight change in Zinjibar and Aden.

Source: Earth Observation Group, NOAA , NCEI (2012-2019) Data processed by PNGK.

Highlights

- Healthcare was identified as the most needed critical service in Aden, over 80% of CFPs selected this option. The need is the most pressing in Attawahi, where all respondents highlighted this issue.
- 23 health facilities in Aden are non-functioning, including 10 private specialized clinics, seven pharmacies and dispensaries, three health centers, two private hospitals and one public hospital. 18 out of these 23 facilities are located in Craiter. Furthermore, there are 30 health facilities which are partially functioning: 14 health centers, 14 pharmacies and dispensaries, one public hospital and one health office. 25 of these 30 facilities are located in Al Buraiqeh district.
- Limited health services are available throughout the city. However, there is a clear lack of the number of facilities as well irregular medicines supply. This coupled with lack of insufficient health workers disproportionately affects people with chronic and acute diseases.
- Emergency and major surgery services are unavailable in half of the districts. In Ash Shaikh Outhman district, most of the services are unavailable, including out-patient department, reproductive health care and maternal and child health.
- Overall, older Yemenis face more challenges accessing healthcare. Walking to the nearest health facility can take up to one hour. Transportation can also be hindered due to high fuel prices and damaged roads.

Figure 34: Main health facilities in Aden, UN-Habitat (2019).



Sources: OpenStreetMaps contributors and WikiMapia, 2019.

1. Overview

Limited healthcare services are available throughout the city, including health units, health centers and hospitals. Aden is also one of two Yemeni cities which offers tertiary healthcare services. This, however, puts additional pressure on the healthcare system as people from the neighboring areas travel to Aden to receive treatment.

There is a lack of health facilities, as well as medical personnel throughout the city and certain services, including emergency and major surgery, are not available in most districts.

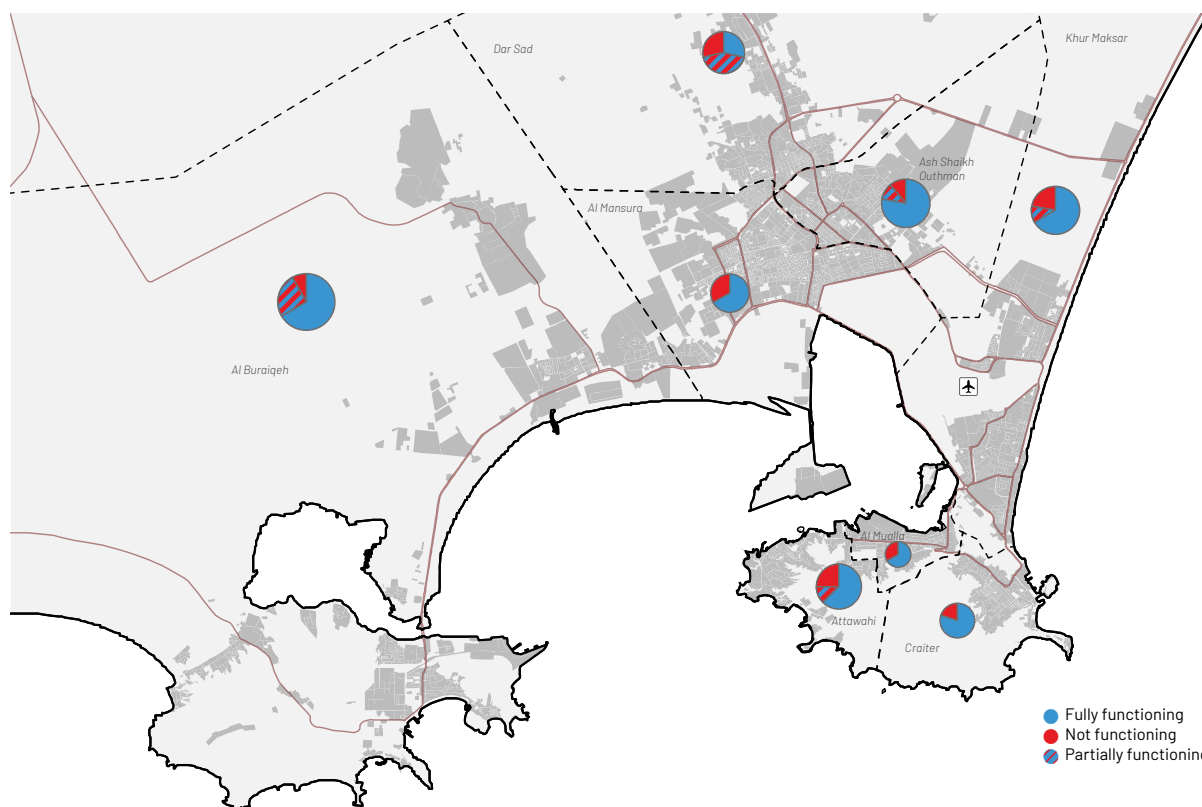
Furthermore, already prior to the conflict, the quality of healthcare services, especially specialized ones, was poor, with many travelling abroad to receive treatment. Currently, sector experts confirm that quality remains an issue in Al Buraiqeh, Al Mansura, Attawahi and Khur Maksar.

2. Institutional and legal framework

The Constitution of the Republic of Yemen guarantees the right of healthcare for all Yemeni citizens. At the national level, the main body responsible for managing the health sector in Yemen is the Ministry of Public Health and Population (MPHP). Following the decentralization law passed in 2000, the governorate health offices became responsible for providing healthcare at the governorate level, while the district health offices manage the local level.⁸⁹

Already prior to the conflict the health sector heavily relied on private financing, with 76.42% of the health expenditure coming from the out-of-pocket sources.⁹⁰

Figure 35: Percentage of functioning health facilities per district, UN-Habitat (2019).



Source: WHO, Health Resources Assessment, 2018.

Table 4: Number of Health Facilities Available in Aden (2017)

Public		Grand Total 1,117	Private	
Health Unit	11		Hospital	9
Reproductive Health Care establishment	45		Polyclinic	21
Health Public establishment	32		Health Center	37
Primary Health Care Units	1		Physicians Clinic	30
Health Center without beds	25		Specialized Clinic	259
Health Center with beds	0		Radiology Clinic	17
District Hospital	2		Primary Health Center	8
Governmental Hospital	4		Pharmacies and Drug Stores	616
Total	120		Total	997

Source: Central Statistics Organization (CSO), Data from Statistical Yearbook 2017

⁸⁹ Qirbi, N., and Ismail, S. A. Health system functionality in a low-income country in the midst of conflict: the case of Yemen, *Health Policy and Planning* 32, 6 (2017): 911-922

⁹⁰ Ibid.

3. Health Infrastructure




The healthcare in Aden consists of primary, secondary and tertiary facilities, as well as specialized clinics. In 2013, according to the Statistical Yearbook, there were a total of 472 health facilities in Aden governorate, out of which only 91 were public. In addition, there were 97 dental clinics, 10 dental labs, 180 laboratories and 33 optics.


Recent data indicate that the total number of health facilities has increased by almost 20% between 2013 and 2019. However, a 15% increase is observed in pharmacies and drug stores numbers. Data comparison is further complicated due to different classification of the facilities used. Currently, most of the health facilities are fully functioning, except for several health centers, pharmacies, specialized clinics, hospitals and a health office as shown in Table 5.

According to the participants for the Joint Analysis and Recovery Planning workshop, 70% of primary health care facilities are operational while most of the secondary health care facilities are not operational. Private hospitals are still open to receive the patients, in order to fill this gap of the public hospitals. The Red Crescent has one center for surgical support.

After the war, many hospitals only focus on primary healthcare, with some exceptions. For instance, AS Sadaaqa hospital provides health care for children and reproductive health, as well as training for faculty medicine. But the hospital is overcrowded all the time, with limited beds availability. Infrastructure for the psychiatric hospital has been destroyed and most of the equipment is out of order. Also, most of the psychiatric doctors are retired and there is a lack of new staff coming to work in the hospitals because there is no good education offered for new doctors nowadays. Sometimes patients need to look for private hospitals to receive proper treatment, however, this can be costly.

Table 5: Total Number of Health Facilities and their Functionality in Aden City, 2019.

	Fully Functioning	Partially functioning	Non-functioning
			
Blood Bank	1	-	-
Health Center	86	14	3
Health Office	7	1	-
Local Clinic	12	-	-
Mobile Healthcare Unit	3	-	-
Other health & emergency unit	163	-	-
Pharmacy/ Dispensary	762	14	7
Private Hospital	16	1	2
Private Specialized Clinic	243	-	10
Public Hospital	6	-	1
Rehabilitation Center	4	-	-
University Hospital	1	-	-
TOTAL	1,304	30	23

 No facilities belonging to this category were identified by KI

Source: KI Survey, June/July 2019

According to a MPHP and a WHO report published in 2016, there were 14 beds per 10,000 persons.⁹¹ This represents a decrease from a ratio of 20 beds per 10,000 in 2013.⁹² While the ratio has decreased since the escalation of the conflict in 2015, it is the highest in Yemen, second only to Marib governorate.

⁹¹ MPHP and WHO, Service Availability and Health Facilities Functionality in 16 Governorates, 2016.

⁹² CSO, Statistical Yearbook 2013.

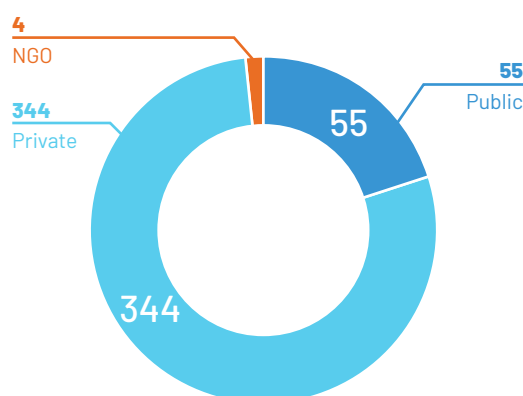
Tertiary Health Care in Yemen

Despite significant progress, the tertiary health care system in Yemen remains underdeveloped. Only Aden and Sana'a possess tertiary referral hospitals which, simultaneously, serve as training institutions. The infrastructure is inadequate, there is a persistent lack of specialized equipment, and a shortage of doctors and specialists. Emergency services are likewise either scarce or non-existent. As a result, many residents opt to travel abroad for treatment.⁹³ One report suggests that 25,000 people travelled abroad in the year 2013-2014 (pre-conflict) to receive medical treatment, of whom 75% selected India.⁹⁴ The escalation of the conflict in 2015 put additional burdens on the healthcare system with wartime casualties and epidemic- and pandemic- prone diseases. One relief group, estimated that only in the summer of 2015, 5,000 wounded patients sought treatment abroad.⁹⁵

4. Operational Capacity

As of October 2016, 78% of the health facilities in Aden were fully functioning (35 out of 45), with 4 health centers partially functioning, and 6 non-functioning.⁹⁶ There were also 7 operating ambulances.

Figure 36: Number of Health Facilities (Private and Public) in Aden City, 2019.



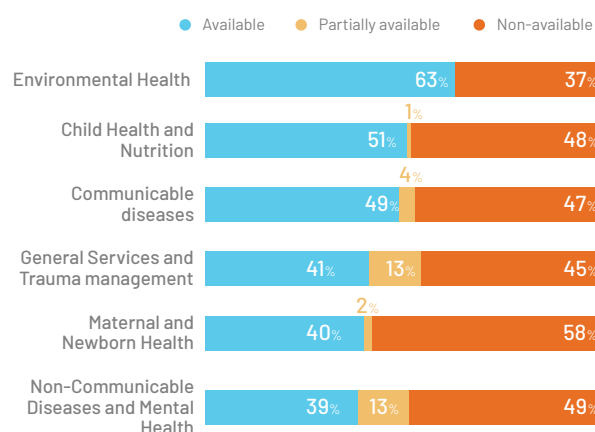
*This includes hospitals, health centers, clinics, rehabilitation centers and mobile healthcare units.

Source: KI Survey, June/July 2019.

Furthermore, according to the 2017 Health Cluster Annual Report,⁹⁷ there are five district hospitals, five governorate hospitals, 26 Health Centers, 10 Health Units, four Mobile Teams and one Specialized Center supported by health partners in Aden governorate. As of October 2016, one of these healthcare facilities was completely damaged in Aden, while 11 were partially damaged.⁹⁸ It is important to note that residents of nearby villages and other governorates travel to Aden to seek healthcare, thus placing additional strains on hospitals, staff, and their ability to deliver treatment. According to local sources, the quality of services is perceived to be better in private hospitals, which, however, are not accessible for most residents due to high costs.

As of October 2016, there were a total of 3,932 medical workers in Aden.⁹⁹ This number includes 1224 nurses, 347 midwives, 450 specialists, 274 general practitioners, 120 assistant doctors and 1517 other health workers. This represents a ratio of 42.7 healthcare staff per 10,000 people, one of the highest in Yemen. However, the shortage of health care workers and hospitals staff were raised as concerns from the participants at the Joint Analysis and Recovery Planning workshop.

Figure 37: Availability of Services in Health Facilities in Aden City, 2019.



Source: Ministry of Public Health & Population, Service Availability and Health Facilities Functionality in 16 Governorates, October 2016

Service availability in health facilities is generally poor. In almost half of the facilities, services for child health and nutrition, communicable and non-communicable diseases, as well as mental health services are not available.¹⁰⁰ Service availability is the lowest in terms of maternal and newborn health, which is only available or partially available in 42% of facilities.

⁹³ WHO, Health System Profile Yemen, (Cairo: WHO, 2006), <http://apps.who.int/medicinedocs/documents/s17314e/s17314e.pdf>

⁹⁴ Anes Salah Mohammed Hasan and Mehmood Gulab Sayyad, Current Health Care Condition in Yemen (Aden), American Journal of Clinical and Experimental Medicine 6, 1 (2018): 18-21.

⁹⁵ Fawaz Al-Haidari, "Aden's Overwhelmed Hospitals Turn into Hospices," Middle East Eye, July 7, 2015, <https://www.middleeasteye.net/news/adens-overwhelmed-hospitals-turn-hospices>.

⁹⁶ MPHP and WHO, Service Availability and Health Facilities Functionality in 16 Governorates, 2016.

⁹⁷ Health Cluster Yemen, Annual Report 2017, 2017, <https://www.who.int/health-cluster/countries/yemen/Yemen-HC-annual-report-2017.pdf>

⁹⁸ MPHP and WHO, Service Availability and Health Facilities Functionality in 16 Governorates, 2016.

⁹⁹ Ibid.

¹⁰⁰ Ibid.

5. Current population needs

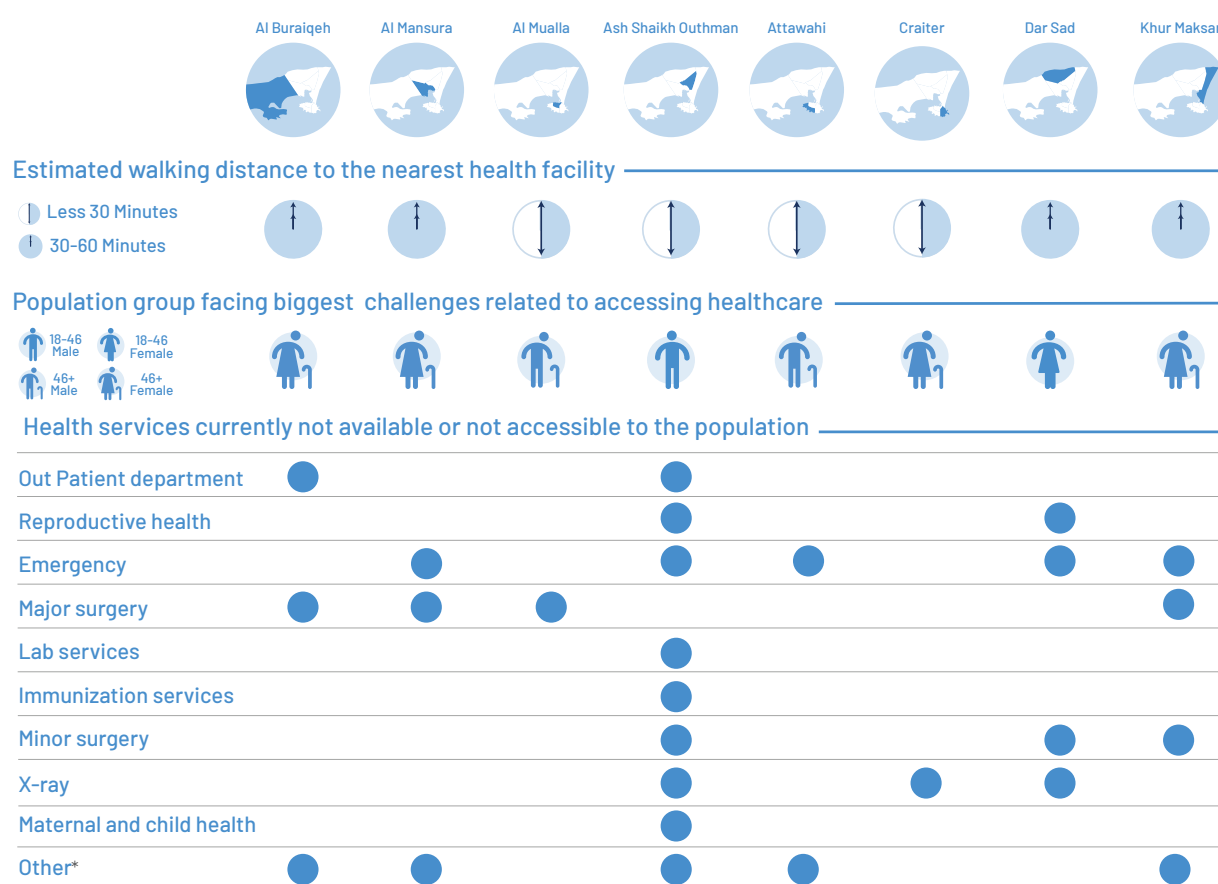
According to the Humanitarian Needs Overview (HNO) there currently are 505,958 people in need of healthcare assistance in Aden governorate, of whom 55% are in acute need.¹⁰¹ Furthermore, an estimated 245,661 people in Aden governorate are in need of nutrition assistance, with 156,127 people in acute need.

Over 80% of CFPs selected provision of healthcare services, including health facilities, health personnel and health services, as a critical need for the population in Aden. This is followed by a need for health commodities, i.e. medicines and equipment, which were selected by 72% of the CFPs. Transportation to healthcare facilities was identified by almost half of the CFPs to be amongst the critical needs across the city, with the highest need in Al Buraiqeh, Al Mansura and Dar Sad.

Sector experts indicate that emergency and major surgery services are unavailable in most districts. The most serious problems related to access of healthcare were identified as lack of health facilities or staff, lack of variety of services, irregular medication supply, and lack of specialized medical staff. Furthermore, treatment of acute and chronic diseases and mental health services were identified as priority health needs among the population. Shortage of medicines and medical supplies was reported at different stages of the conflict and it especially affects those suffering from chronic illnesses.

When asked about the most serious problems that require immediate intervention, sector experts selected lack of Health Facilities (HFs) (including overcrowded HFs and lack of staff in the facility), lack of variety of services and poor quality.

Figure 38: Health Needs in Aden City (per district), 2019.



* Other services include obstetric emergencies, specialized clinics, nutrition services, tuberculosis treatment and rehabilitation and ambulances.

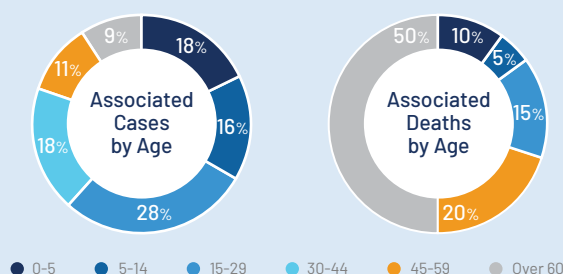
Source: KI and CFP Surveys, June/July 2019.

Disease outbreaks

Yemen has been affected by disease outbreaks, including cholera and diphtheria, which has been linked to the lack of healthcare services and poor water and sanitation conditions. The first cholera cases in Yemen were detected in early October 2016 in Sana'a.¹⁰² From there, the outbreak quickly spread southwards and the first death case in Aden governorate was reported in the same month. By the end of the month,¹⁰³ Aden governorate had the second highest (after Taizz) number of Cholera and Acute Watery Diarrhea (AWD) cases across Yemen, with over 500 suspected cases.¹⁰⁴ The second cholera outbreak began in April 2017. In response, WHO and the Medicines Sans Frontiers (MSF) set up the treatment center at the Al Sadaqah hospital, which was admitting patients from across the south of Yemen. The first case of diphtheria was recorded in Aden's Al Sadaqah hospital in November 2017. According to the participants at the Joint Analysis and Recovery Planning workshop, there was an increase of malaria and diarrhea in Aden in October 2019, with some reported cases of Cholera.

The graph below presents the numbers of cholera associated cases and deaths in Aden city from January to August 2019. The highest number of suspected cholera cases is found in Dar Sad district. It hosts the second highest number of IDPs in the city, as well as many from the Muhamasheen community. Older people are disproportionately affected by cholera associated deaths due to more vulnerable immune systems and lack of basic services, including water and sanitation.

Figure 39: Cholera Associated Cases and Deaths by Age in Aden City, January-August 2019



Source: Health Cluster Yemen. Available at <http://www.yemeneoc.org/bi/>

6. Humanitarian Interventions

Several humanitarian organizations are involved in supporting the health sector in Aden. Support includes providing assistance to perform surgeries, and providing support in dealing with communicable diseases, reproductive healthcare, mental health, nutrition and immunization. Other types of support include provision of water, fuel, staff incentives and training.

Media reports that the UAE, represented by its humanitarian arm, the ERC, rehabilitated hospitals in Aden and provided medicine and equipment.¹⁰⁵

¹⁰² WHO, Cholera Cases in Yemen, (WHO Regional Office for Eastern Mediterranean, 2016), <http://www.emro.who.int/pandemic-epidemic-diseases/cholera/cholera-cases-in-yemen.html>.

¹⁰³ WHO, Cholera update in Yemen, (WHO Regional Office for Eastern Mediterranean, 2016), <http://www.emro.who.int/pandemic-epidemic-diseases/cholera/cholera-update-in-yemen-23-october-2016.html>

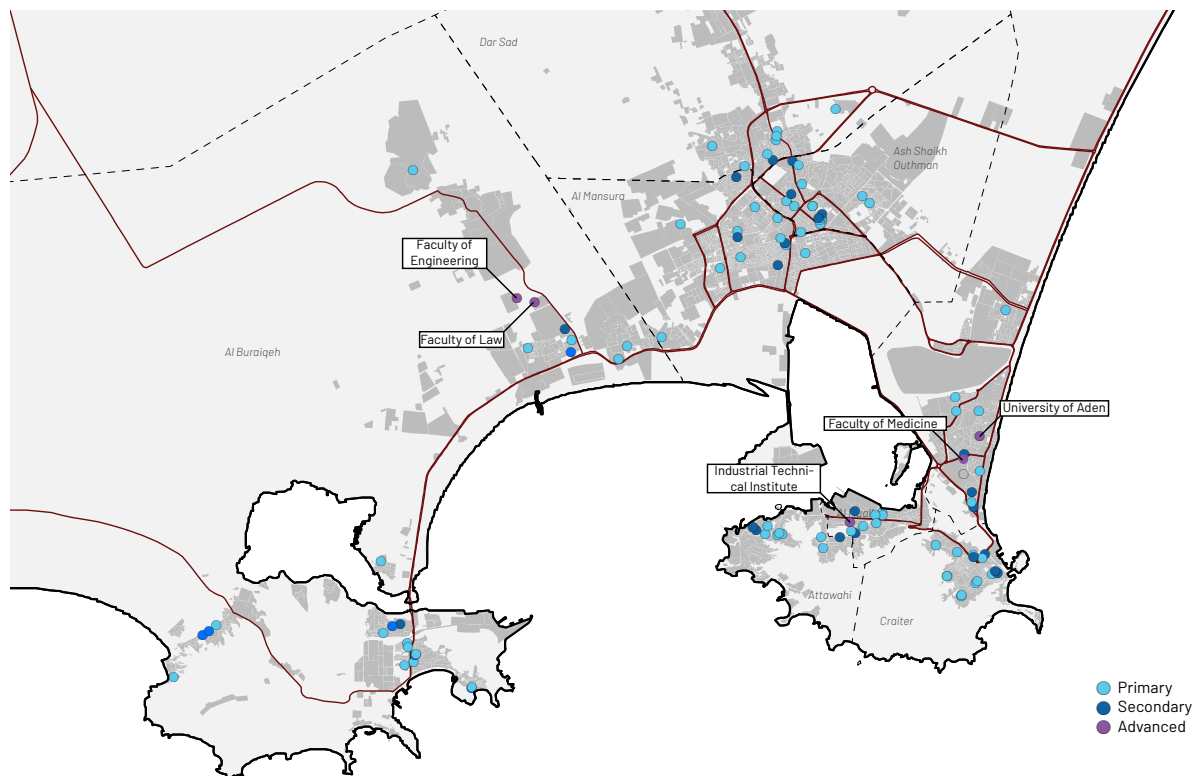
¹⁰⁴ WHO, Situation update for cholera for Yemen, October 2016, (WHO Regional Office for Eastern Mediterranean, 2016), <http://www.emro.who.int/pandemic-epidemic-diseases/cholera/situation-update-for-cholera-for-yemen-october-2016.html>

¹⁰⁵ Mohammed Al Qalisi, "Restoring Hospitals Becomes the Priority in Yemen's Aden," The National, September 4, 2015, <https://www.thenational.ae/world/restoring-hospitals-becomes-the-priority-in-yemen-s-aden-1.128148>

Highlights

- Since the 1980s, enrollment rates in secondary and tertiary education have been steadily increasing. Many of the education facilities are working at a stretched capacity, with largely insufficient numbers of teachers and space.
- Admission and progression rules are complex and can lead to drop-outs. The system lacks flexibility and admission rules for university are strict.
- Several schools were damaged during the escalation of the conflict in 2015, however, most have already been rehabilitated. Currently, only six education facilities are not-functioning in the city, which includes three primary and one secondary school, one education office and one pre-elementary school.
- According to KI survey lack of teachers was reported as the most serious problem related to education in seven districts (all districts except Khur Maskar), followed by the lack of learning spaces and basic amenities, such as clean water, segregated toilets, and electricity, which were reported in six districts (all districts except Al Mualla and Attawahi), and lack of studying materials which was reported in five districts (all districts except Ash Shaikh Outhman, Craiter and Dar Sad).
- Levels of school attendance vary across the city. However, the lowest rates of attendance across all age groups are found in Al Buraieqeh, Al Mualla, Dar Sad and Khur Maksar.
- There is a severe shortage in teachers and classroom space throughout the city. In Al Buraieqeh, Craiter and Ash Shaikh Outhman, some children do not go to school due to insufficient number of classrooms. Lack of teachers is particularly acute in Al Buraieqeh and Al Mansura districts, where teachers' numbers are largely insufficient for both male and female students aged between 3-17. The problem of teachers' absenteeism was already reported on prior to 2015 and has exacerbated since then.

Figure 40: Education facilities, UN-Habitat (2019).



Source: OpenStreetmaps Contributors and WikiMapia, July 2019.

Table 6: Public vs. Private Schools in Aden per Type, 2017

	Public	Private
Basic	83	41
Secondary / Basic	11	24
Secondary	25	0
Total	119	65

Source: CSO, Statistical Yearbook 2017.

1. Overview

From the 1980s onward, both Northern and Southern Yemen made the development and expansion of their respective education systems a top priority. The share of the budget dedicated to education remained equally high following the unification of the two previously independent countries in 1990. Between 1977 and 2000, illiteracy rates declined from 90% to 45% and enrollment rates climbed steadily from 0.5 million to 3 million students. This represents an increase from 7% to 17% of the share of population enrolled in higher education. Enrollment in higher education witnessed significant growth, from 5,000 to 175,000 students for the same period.¹⁰⁶ The education sector in Yemen is managed by three separate ministries, each overseeing a specific level of education. Admission and progression rules are complex and their rigidity results in high drop-out rates. There are public and private educational establishments in Aden, with private ones reportedly providing better quality of education. However, private education is also associated with higher costs which limits accessibility to only those selected few that can afford it. Following the escalation of the conflict in 2015, all schools suspended activities in August 2015. The start of the 2015-2016 academic year was delayed by one month.

According to the Joint Education Needs Assessment, an estimated 20 percent of children were out of school in Aden in 2016.¹⁰⁷ Teacher absenteeism, lack of studying materials and overall poor quality have further deteriorated the situation. Most of the schools that sustained damage have been rehabilitated by the end of 2016. During the rehabilitation, many students were able to attend lessons at nearby schools. Despite this, lack of learning spaces and an insufficient number of teachers remain a major problem in Aden.

Organizational Structure

Key legislation includes the Education Act (1964), which establishes different levels of education, and the Education Act (1965), which sets up scholarships and fellowships.¹⁰⁸ Prior to the conflict, the education system was highly centralized. Currently, there are several ministries that manage the education system at different levels. General education falls under the purview of the Ministry of Education (MoE). Vocational schools and community colleges are managed by the Ministry of Technical Education and Vocational Training (MoTEVT), first introduced in the 1970s under the MoE, but then established as a separate system in 2001.¹⁰⁹ Finally, the tertiary level is managed by the Ministry of Higher Education and Scientific Research (MOHESR), first established in 1990 and, after a brief hiatus, reestablished in 2001.¹¹⁰ The government of Yemen subsidizes public education at all levels.¹¹¹ The Literacy and Adult Education Organization (LAEO), is an autonomous technical agency within the MoE that measures and reports on national literacy rates.

¹⁰⁶ World Bank, Yemen - Education status report : challenges and opportunities (English), (Washington, DC: World Bank, 2010), <http://documents.worldbank.org/curated/en/182051468154759836/Yemen-Education-status-report-challenges-and-opportunities>

¹⁰⁷ Save the Children, Yemen Education Cluster, Joint Education Needs Assessment Report, Aden - Yemen, 2016, https://resourcecentre.savethechildren.net/node/12526/pdf/aden_2016_joint_education_needs_assessment.pdf

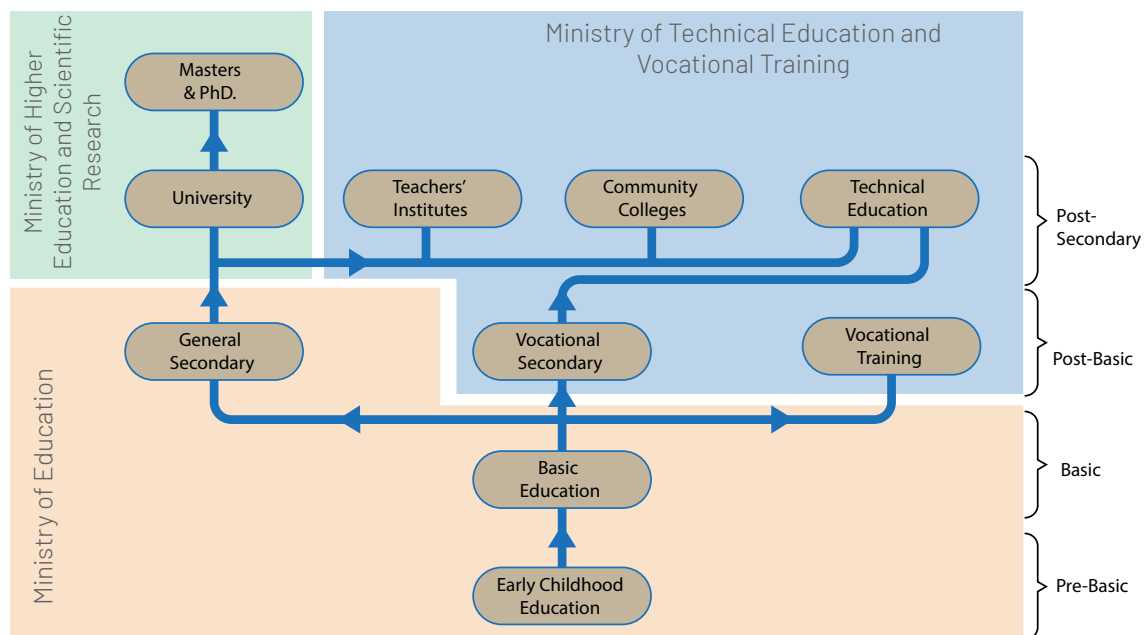
¹⁰⁸ World Bank, Yemen - Education status report: challenges and opportunities (English). (Washington, DC: World Bank, 2010).

¹⁰⁹ Ibid.

¹¹⁰ Ibid.

¹¹¹ Ibid.

Figure 41: Educational System in Yemen



Source: UNESCO, *World Data on Education VII Ed., 2010/2011* and The World Bank, *Yemen - Education status report : challenges and opportunities* (English), 2010.

Structure of the Education System

The education cycle in Yemen begins at early childhood, or pre-school, which, however, is non-obligatory. Next, basic education is compulsory for all children, generally starting at the age of six or seven. Following nine years of basic education, students proceed either through a general secondary path or a vocational path (which consists of either vocational secondary or vocational training education).¹¹²

Secondary school lasts three years. The first year is general education and consists of literary and scientific subjects.¹¹³ During the second year, students may choose to pursue either humanities or exact sciences. After the general secondary education, students may choose to pursue higher education at a university, a teachers' institute, a community college, or receive a technical education. To be admitted to postgraduate studies, one must complete a bachelor's degree amongst other prerequisites. Entering into the labor market is possible following any level after the completion of basic education. Following vocational secondary education, the student may opt for a technical education.¹¹⁴

Admissions and Progression

The regulations governing admissions and progression are complex and can prevent students from obtaining further education. Already prior to the conflict, the number of students repeating a school year in Yemen was high. According to a 2010 World Bank report, it took 15.9 years on average to complete the compulsory nine years of education.¹¹⁵

Students who choose to proceed to vocational education upon the completion of basic education legally lose the opportunity to attend university in the future.¹¹⁶ Moreover, both the TEVT post-basic and TEVT post-secondary institutions have set age limits for admission purposes. Since most students require more time to progress out of basic education, some might not even qualify for a TEVT path solely due to age restrictions. Furthermore, there are no regulations allowing for reentry into the basic education system following a dropout.¹¹⁷ In such instances, the only possible path is Alphabetical Programs, whose mandate is only to teach reading and writing.

To be admitted to a public university, a secondary education diploma is required. However, upon finishing secondary education, graduates cannot directly apply or enroll for a tertiary education. A one-year-long hiatus is legally mandated. Although unclear, the reason is generally attributed to the obligatory performance of the national military service upon reaching the age of 18 years old. After the year has elapsed, secondary education graduates have only up to three years to apply for admittance to the university. If unable, they lose the privilege to attend a tertiary education institution for life.¹¹⁸ The complexity of the system thus prevents not only further education but also the attainment of qualifications necessary to transition into the labor market.

¹¹² ILO, *Demographic and Labour Market Trends in Yemen*, (2014), https://www.ilo.org/wcmsp5/groups/public/-arab-states/-ro-beirut/documents/publication/wcms_358144.pdf

¹¹³ Ibid.

¹¹⁴ Ibid.

¹¹⁵ World Bank, *Yemen - Education status report: challenges and opportunities* (English). (Washington, DC: World Bank, 2010).

¹¹⁶ Ibid.

¹¹⁷ Ibid.

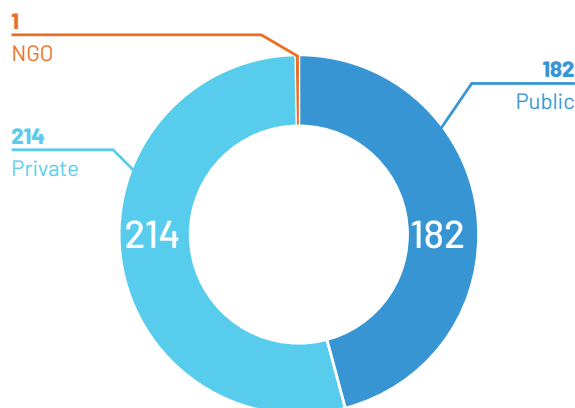
¹¹⁸ Ibid.

2. Infrastructure

According to the Joint Education Needs Assessment conducted by Save the Children in 2016, there were 168 basic schools in the academic year 2012-2013, and 185 basic schools in the subsequent academic year, representing a 10% increase.¹¹⁹ During this period, the number of public schools increased from 98 to 119, while the number of private schools decreased from 70 to 66.

Currently, there are 97 public and 99 private primary schools, suggesting the number of basic public schools has decreased, while the number of private schools has increased.¹²⁰ This can be attributed to a lack of financial resources and teaching staff in public schools. Further, the number of secondary schools has almost tripled since 2013, to 69 (35 public and 34 private) schools in 2019. For schools offering both, basic and secondary education, the number of public schools decreased from 11 to 10 in 2019, while the number of private schools saw a sharper decrease from 24 in 2013 to 13 in 2019. The graph below presents the numbers of public and private educational facilities in Aden, including schools, colleges and universities, education offices and university housing.

Figure 42: Public vs. Private Education Facilities in Aden City, 2019.



Source: KI Survey, June/July 2019.




Currently, most schools are fully functioning, except for three primary schools located in Ash Shaikh Outhman, Al Mansura and Craiter, one secondary school and education office in Khur Maskar and one pre-elementary school in Al Mualla.¹²¹


¹¹⁹ Save the children, Yemen Education Cluster, Joint Education Needs Assessment Report, Aden – Yemen, (2016).

¹²⁰ KI Survey, June/July 2019.

¹²¹ Ibid.

Table 7: Total Number of Education Facilities and their Functionality in Aden City, 2019.

	Fully Functioning 	Partially functioning 	Not functioning 
Boarding School, Elementary Level	-	-	-
Boarding School, Middle School	-	-	-
College/University	10	-	-
Dorms/University housing	6	-	-
Education Office	8	-	1
Other Educational Type	2	-	-
Pre-Elementary School	79	-	1
Primary and Secondary School	23	-	-
Primary School	193	-	3
Secondary School	68	-	1
Vocational School	2	-	-
TOTAL	391	0	6

 No facilities belonging to this category were identified by KI

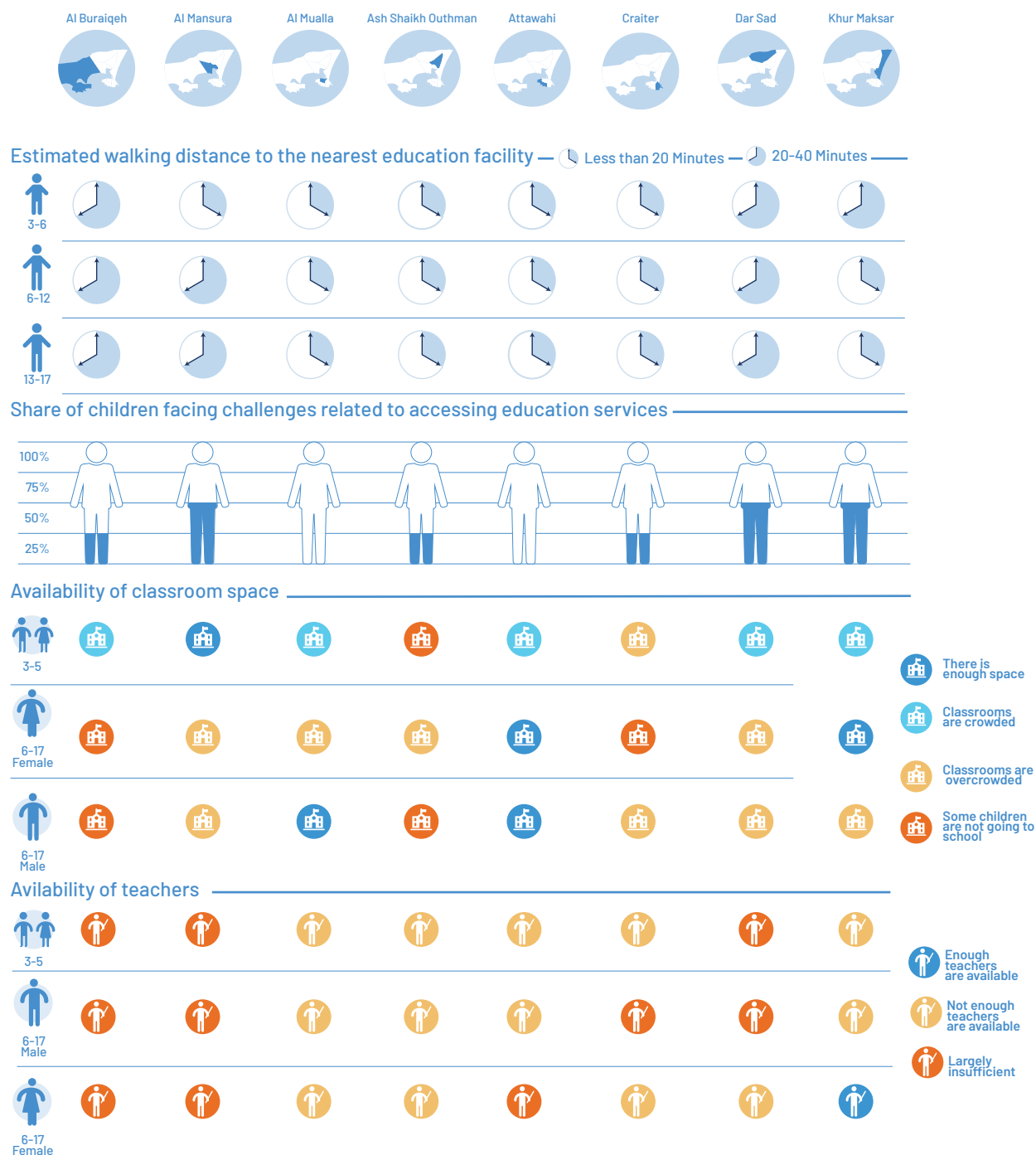
Source: KI Survey, June/July 2019.

Aden University is the only public university in Aden city. It has 22 faculties and, as of 2017, 39,491 enrolled undergraduate students and 371 students in graduate studies. Additionally, there are several other, private universities in Aden.¹²²

3. Population Needs

Sector experts suggest that lack of infrastructure facilities, insufficient number of teachers, a shortage of teaching materials, and inability to pay school fees are main issues hampering the development of education.

Figure 43: Education Needs in Aden City (per district), 2019.



Source: KI and CFP Surveys, June/July 2019.

School supplies, including stationery and books, were identified as critical goods needed across Aden by 56% of CFPs.¹²³ Top three districts where this option was selected are Ash Shaikh Outhman, Dar Sad and Khur Maskar. Furthermore, 100% of the CFPs identified education as a critical service the population needs in Attawahi and Dar Sad districts, followed by Ash Shaikh Outhman, where over two-thirds of the CPFs selected this option. Transportation to school facilities was identified by a third of the responds across the city, however, in Al Mansura this issue was highlighted by 86% of the CFPs.

123 CFP Survey, June/July 2019.

Enrollment and attendance

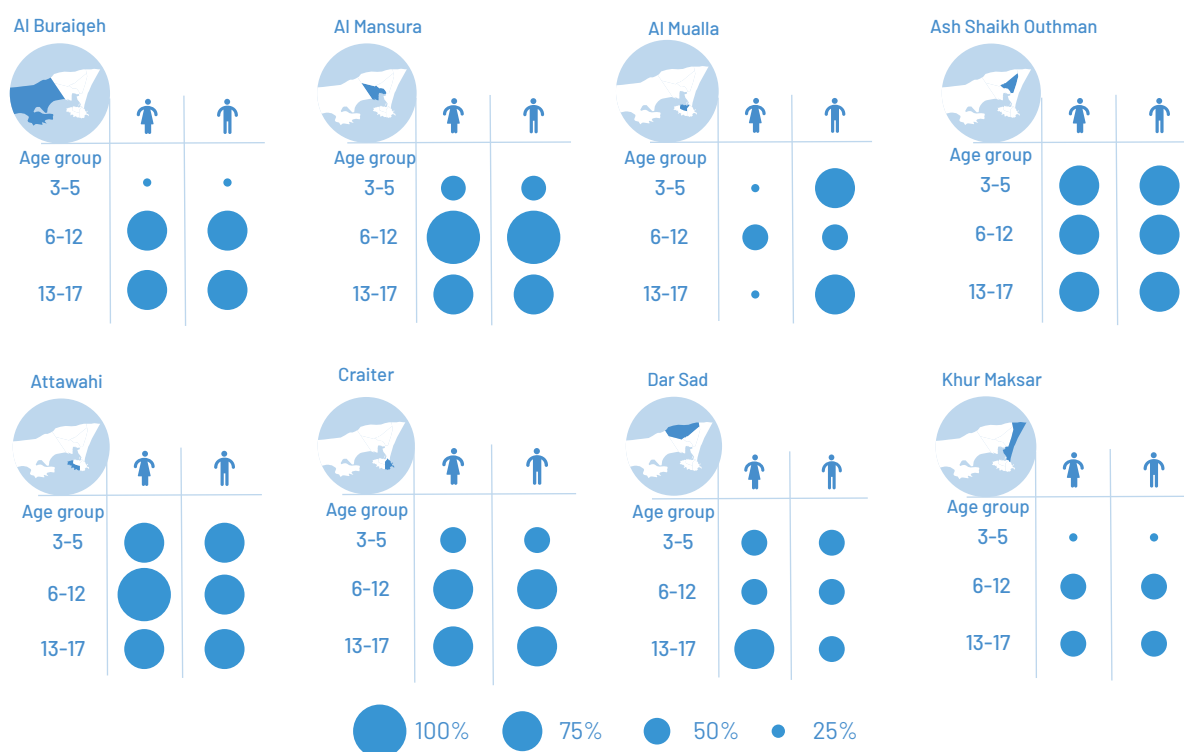
In 2013, the total enrollment for basic education in Aden was 80%, of which 66% attended public and 14% private institutions.¹²⁴ The following year, the enrollment rate was estimated to be 77% (79% male and 75% female), of which 63% attended public and 14% private institutions.¹²⁵ A 3% decrease is observed for male students in public schools. Currently, attendance varies from one district to another, with the lowest rates observed in Khur Maskar. Female students aged 3-5 and 13-17 are disproportionately affected in Al Mualla where an estimated two-thirds of the respective age group populations are out of school.

In the 2015-2016 academic year there were 5,626 teachers in Aden governorate, out of which 86% worked in public schools.¹²⁶ Almost 78% of all teachers were female.

Aden University had a total 2,230 teaching staff, including 96 professors, 257 associate professors, 676 assistant professors, 498 lecturers and 704 assistant teachers.¹²⁷

Currently, sector experts report insufficient numbers of teachers across all districts, with Al Buraiqeh and Al Mansura affected most. Teacher absenteeism was reported acute even prior to the conflict. Insufficient salaries led many teachers to either find better paid opportunities or supplement their meager income with a second job.¹²⁸ Although many teachers are still noted on the official lists, the accurate number may be lower.

Figure 44: School Attendance Rates in Aden City (per district), 2019.



Source: KI Survey, June/July 2017.

¹²⁴ Save the Children, Yemen Education Cluster, Joint Education Needs Assessment Report, Aden – Yemen, (2016).

¹²⁵ Ibid.

¹²⁶ CSO, Statistical Yearbook 2017.

¹²⁷ Ibid.

¹²⁸ Save the Children, Yemen Education Cluster, Joint Education Needs Assessment Report, Aden – Yemen, 2016.

Table 8: Students to Teachers Ratio in Aden City, 2015–2016.

	# of teachers	# of enrolled students	Teacher to student ratio
Basic	5,626	128,340	22.81
Secondary / Basic	1,333	28,325	21.25
Basic / Secondary	1,322		
Total	8,281	156,665	

Source: CSO, Statistical Yearbook 2017.

Materials

As of March 2016, there was an acute shortage of school materials. According to the Joint Education Needs Assessment, 72% of the students studying in grades 1–3 and 41% of students in grades 4–9 reported severe shortage of learning materials.¹²⁹

Students relied on using shared second-hand materials and printing copies at the local market. Currently, 56% of the CFPs identified schools supplies, including stationary and books, to be amongst the critical goods needed in Aden.¹³⁰

Quality of Education

According to local sources, private schools and universities are considered to provide a better quality of service when compared to public institutions. Private schools are better funded and can afford better equipment and materials. In addition, teachers working in private schools are perceived to have better capacity and communication skills. This can also be attributed to lower numbers of students per classroom in private institutions. Unconfirmed sources suggest that prices for private education can range between 70,000 YER to 400,000 YER per academic year. It is important to note, that although public schools are free, additional costs occur when buying school materials.

Learning spaces

According to national education legislation, there should be no more than 40 students for grades 1–4 and 45 for grades 5–9 per classroom.¹³¹ In reality numbers vary widely. During the 2012–2013 academic year, the average number of students per classroom in public schools was 58, while in private schools it was 21.¹³² In the 2013–2014 academic year, the average number of students per classroom slightly decreased to 53 in public schools, while it remained the same for the private schools.

The Joint Education Assessment conducted in March 2016 suggests that the average number of students per classroom in the surveyed schools increased to 67.6.¹³³ This can be attributed to the increased numbers of school-aged children, given the limited classroom capacity of the educational facilities. This also leads to challenges associated with bringing the out-of-school children back into the educational system, as most of the schools are already operating over their capacity.

Currently, sector experts report lack of learning spaces in most of Aden's districts. In three districts (Al Buraieq, Ash Shaikh Outhman and Craiter), some students are not attending school mainly because of insufficient numbers of classrooms. The only district with enough classrooms for all age groups is Attawahi.

During the escalation of the conflict between March and July 2015, all schools in Aden suspended teaching and their facilities were briefly occupied by IDPs or armed groups.¹³⁴ Before the beginning of the 2015–2016 academic year, the IRG officially requested IDPs to vacate the schools and relocate elsewhere.¹³⁵ Media accounts report that the ERC committed to rehabilitate over 154 schools in Aden. According to the Education Cluster, 120 schools were rehabilitated with the support of ERC by December 2015.¹³⁶ No up to date information is available as to the remaining 34 schools which were scheduled to be rehabilitated.

4. Humanitarian Interventions

As of June 2019, there are 3 UN agencies, 2 National Non-Governmental Organizations (NNGOs) and 6 INGOs supporting the education sector in Aden governorate.¹³⁷ Their activities include rehabilitation of schools, education system support, provision of school desks and supplies, provision of temporary/alternative classroom spaces, teachers training, hygiene education, and provision of meals for the children.

In addition to rehabilitation, the ERC has provided several schools in Aden with furniture and their students with school bags.¹³⁸ The organization has also provided 915 computers to 89 schools in Aden city by October 2016.¹³⁹

Sector experts indicate that humanitarian assistance provided to education in Aden does not meet minimum standards and priority needs.¹⁴⁰

¹²⁹ Ibid.

¹³⁰ CFP Survey, June/July 2019.

¹³¹ Save the Children, Yemen Education Cluster, Joint Education Needs Assessment. Report, Aden – Yemen, (2016).

¹³² Ibid.

¹³³ Ibid.

¹³⁴ Ibid.

¹³⁵ Ibid.

¹³⁶ Education cluster Yemen, "Aden Education Sub-Cluster Meeting Minutes", Educational Cluster, December 17, 2017, https://www.humanitarianresponse.info/sites/www.humanitarianresponse.info/files/documents/files/17_december_2015_aden_sub-cluster_meeting_minutes_english.pdf

¹³⁷ Education cluster Yemen, Education Cluster Dashboard 2019, <https://www.humanitarianresponse.info/en/operations/yemen/education>

¹³⁸ Save the Children, Yemen Education Cluster, Joint Education Needs Assessment Report, Aden – Yemen, 2016.

¹³⁹ Emirates News Agency, "Emirates Red Crescent donates 915 computers to Aden schools," October 12, 2016, <http://wam.ae/en/details/1395301112393>

¹⁴⁰ KI Survey, June/July 2019.

12 Water, Sanitation and Hygiene (WASH)

Highlights

- Disposing untreated wastewater into the sea pose severe environmental hazards as it causes serious diseases and illnesses. Furthermore, it has a devastating effect on the marine life and decline fish production as it depletes oxygen.
- Water supply is limited due to damage and lack of electricity supply. The average daily water supply of 0-4 hours is observed in half of the city's districts (Al Buraieqeh, Al Mansura, Attawahi and Craiter). In five districts (Dar Sad, Craiter, Khur Maksar, Al Mualla and Attawahi) lack of water for cooking, bathing, laundry and personal hygiene purposes was reported as the top priority for interventions. Also, half of the population have reduced water consumption.
- In three districts located in southern and eastern Aden (Al Mualla, Attawahi, and Craiter), lack of sanitation facilities was reported, or too crowded if available; as in Craiter it was reported that facilities are not functioning or full, and in both Craiter and Khur Maksar the facilities are unclean and/or unhygienic. Furthermore, in five districts out of eight (all except for Ash Shaikh Outhman, Al Mansura, and Craiter) there is no drainage system.
- There are major problems with sewage systems reported in five districts (all except Al Buraieqeh, Al Mansura and Ash Shaikh Outhman) as most areas have constant sewage problems. Furthermore, 75% of people living in Al Mualla, Attawahi, Craiter and Khur Maksar where wastewater is frequently visible; it has been associated with non-functioning pumps and intermittent electricity supply.
- While most of the HHs have access to safe and functioning latrines, related problems, such as full cesspits, clogged pipes, were observed in all districts, with the highest number of problems in Al Mualla, Attawahi and Khur Maksar.

1. Overview

Its water supply grid is approximately 1,111 km long and consists of 34 reservoirs and water towers (30 ground reservoirs and 4 elevated tanks), 3 water sterilization facilities, 8 water pumping stations and 116 water wells.¹⁴¹ There are 138,605 water house connections as of January 2020¹⁴². The main source for obtaining water are groundwater wells. Similarly, the sanitation system consists of about 391 km piping collection network and three wastewater treatment plants with a total capacity of 100,000 m³ per day. About 86% of the city's population is connected to the public water supply system and 69% is connected to the sanitation system.

Following the eruption of hostilities early 2015, this grid remained largely operational. Damages were not only restricted to water and sewage pumps but also the main treatment plants such as Al-Arish which is nonfunctional since 2014, or under-maintained and overstretched like Ash-Shaab one¹⁴³. Structural damages and power outages have also disabled station pumps and caused sewage overflow in the streets, not mentioning disposing untreated water into the sea. This has led to acute health hazards for the city's inhabitants. Sector experts indicate that an unconfirmed number of people have died in five districts, while in the remaining three districts, many more have fallen sick during the epidemics.¹⁴⁴

Since then, several damaged facilities have been rehabilitated, but others are still non- or partially- functioning and require restoration. Humanitarian organizations are involved in a variety of activities to support the Water and Sanitation sector. Nevertheless, disruptions in the sewage system, lack of water for cooking, bathing, laundry and personal hygiene purposes are critical needs for the city's population.¹⁴⁵

¹⁴¹ Dorsch International Consultants GmbH, Yemen Water Sector Damage Assessment Report of Twelve Water Supply and Sanitation Local Corporations (LCs) and their Affiliated Branch Offices and Utilities, Annex 2 – Technical Assessment Report for LC Aden; (Bonn and Eschborn: GIZ, September 2018).

¹⁴² MWE, feedback on Aden City Profile, April 2020.

¹⁴³ MWE, A report on the environmental hazard of untreated water due to nonfunctional WasteWater Treatment Plants (WWTP), December 26, 2019.

¹⁴⁴ KI Survey, June/July 2019.

¹⁴⁵ Ibid.

WASH Management

Management of water resources and uses falls under the oversight of several government entities. First, the National Water Resources Authority (NWRA), established in 1995 is a decentralized government agency with wide-ranging legal powers to implement water laws and regulations, allocate water rights, approve permits for drilling wells, and undertake various other water resource management functions. Second, the Ministry of Water and Environment (MWE), established in 2003, is the cabinet-level supervisory body that brings the water sector as a whole, and water management in particular, under the purview of the central government, thus facilitating the allocation of necessary funds. Yet, the responsibility of water uses for irrigation purposes falls under, the third, Ministry of Agriculture and Irrigation (MAI), which shares jurisdiction over surface space water infrastructure with the MWE.¹⁴⁶

The shared jurisdictions are somewhat problematic and prevent the integration of planning, institutionalizing regulatory responsibility, and broader development goals for water system and sanitation. The Water Law, ratified in 2002, remains the primary piece of legislation which deals with the exploitation and protection of water resources and its distribution among the population.¹⁴⁷

Following the reorganization of the water sector in 2003, the newly established MWE initiated a multi-stakeholder process, the National Water Sector Strategy and Investment Program (NWSSIP), of preparing a consolidated strategy, an action plan, and an investment program for the sector as a whole; water resources, urban and rural Water Supply and Sanitation (WSS), irrigation, environment and human being. The strategy aimed to ensure coordination among the stakeholders, unify policies regarding water supply in urban and rural areas, ensure equitable allocation of funds, integrate sustainable policies and poverty reduction and ensure effective financing.¹⁴⁸

Part of NWSSIP's strategy involves the progressive decentralization of responsibilities for providing services by transforming National Water and Sanitation Authority (NWSA) branches into autonomous local corporations responsible for managing the water and sanitation services.¹⁴⁹ Although the legal framework for the erection of the local corporation was promulgated in 1997, they became operational only after 2000. Each local corporation has a board of representatives and is, in addition, also responsible for water prices.

2. Water and Sanitation Infrastructure

Water Supply

There are three main well fields in Aden, El Manasra, Bir Nasser, and Bir Ahmed. El Manasra and Bir Nasser well fields consist of 18 functioning well out of 29 and 38 functioning well out of 46 respectively¹⁵⁰, from where the water is either transported to the collection point in Bir Nasser and then to the distribution network of Dar Sad, Ash Shaikh Outhman and partly Al Mansura, or directly to the Albarzake pump station, from where it is pumped to Khur Maksar, Craiter, Al Mualla and Attawahi.¹⁵¹ The water from the Bir Ahmed well field, which consists of 30 functioning well out of 40, is distributed to the network, covering parts of Al Mansura or to the Slaughter House pump station, and pumped to Madinat Ashaab and Al Buraieq or to the Albarzake pump station¹⁵².

In the private sector, water is distributed from private wells via water tankers. The price is determined based on the market perception. As of 2018, the tankers were buying water from private wells for YER 112/m³ and selling it to the HHs for YER 1,832/m³.¹⁵³ Some of the water requires desalination, which the tanker truck can provide as an additional service.

¹⁴⁶ MWE, National Water Sector Strategy and Investment Program (NWSSIP), (2004).

¹⁴⁷ Naif Mohammed Abu-Lohom et al, Water Supply in a War Zone, A Preliminary Analysis of Two Urban Water Tanker Supply Systems in the Republic of Yemen, (Washington DC: The World Bank, July 2018), <http://documents.worldbank.org/curated/en/434091532620702995/pdf/128907-WP-P165727-Water-Supply-in-a-War-Zone-PUBLIC.pdf>

¹⁴⁸ Ibid.

¹⁴⁹ Ibid.

¹⁵⁰ MWE, feedback on Aden City Profile, April 2020.

¹⁵¹ Naif Mohammed Abu-Lohom et al, Water Supply in a War Zone, A Preliminary Analysis of Two Urban Water Tanker Supply Systems in the Republic of Yemen. (Washington DC: The World Bank, July 2018).

¹⁵² MWE, feedback on Aden City Profile, April 2020.

¹⁵³ Naif Mohammed Abu-Lohom et al, Water Supply in a War Zone, A Preliminary Analysis of Two Urban Water Tanker Supply Systems in the Republic of Yemen. (Washington DC: The World Bank, July 2018).

Table 9: WWTP Details in Aden City, 2019.

WWTP Name	Al-Arish WWTP	Ash-Shaab WWTP	Salah Aldien WWTP
Put in service	2,000	1,979	
Design Flow	70,000 m ³ per day	20,000 m ³ per day	5,000 m ³ per day
Actual Flow, (2014)	over 30,000 m ³ per day	15,000 m ³ per day	
Actual Flow, (2018)	0 m ³ per day*	35,000 m ³ per day	5,000 m ³ per day
Disposal method of treated primary effluent	Sea disposal and irrigation	Sea disposal and irrigation	
Disposal method of treated primary effluent sludge	Sludge is dried under the sun in a primitive and used as a fertilizer	Sludge is dried under the sun in a primitive and used as a fertilizer	
Coverage	Craiter, Attawahi, Al Mualla and Khur Maksar districts	Ash Shaab, Ash Shaikh Outhman, Dar Sad and Al Mansura	Salah Aldainis area in Al Buraiqeh district (sewage from the rest of the district is discharged through the sea outfall pipeline)

Source: Adel A. S. Al-Gheethi et al., "Effectiveness of Selected Wastewater Treatment Plants in Yemen for Reduction of Faecal Indicators and Pathogenic Bacteria in Secondary Effluents and Sludge," *Water Practice and Technology* 9, no. 3 (2014): pp. 293-306 and Dorsch International Consultants GmbH, *Damage Assessment Report of Twelve Water Supply and Sanitation Local Corporations (LCs) and their Affiliated Branch Offices and Utilities*. Bonn and Eschborn: GIZ, September 2018.

*According to the MWE, this is because the main pump station in Khur Maksar is nonfunctional and the damaged network pipes from Attawahi, Craiter and Al Mualla.

Additionally, during the Joint Analysis and Recovery Planning workshop, it has been reported that more than 70% of private water tanks are not covered or closed off because of the lack of financial resources or no means. This leads to the outbreaks of the water related diseases, especially after the war.

Most of the treated water in Aden is used for irrigation of the greenbelt project, and some is discharged into the sea. According to a study conducted in 2014, the concentration of pathogenic bacteria in the wastewater generated from water treatment plants in Yemen exceeded WHO standards.¹⁵⁶

Sanitation Infrastructure




The sanitation infrastructure in Aden city consists of three Wastewater Treatment Plants (WWTP), also called waste stabilization ponds, over 80 sewage pumping stations, 12 mobile sewage pumps (not publicly owned) and five functional sewage trucks.¹⁵⁵ The network is 391 kilometers long and has 103,169 wastewater connections. There also are two non functional wastewater laboratories.

¹⁵⁶ Adel Al-Gheethi et al, Effectiveness of Selected Wastewater Treatment Plants in Yemen for Reduction of Faecal Indicators and Pathogenic Bacteria in Secondary Effluents and Sludge, in *Water Practice and Technology* 9,3 (2014): 293-306.

¹⁵⁵ Ibid.

3. Operational capacity

Table 10: Total Number of Water Supply Facilities and their Functionality in Aden City, 2019.

			
Pumping Station	8	-	-
Sewage Treatment Plant	2	-	2
Storage Reservoir	8	2	-
Water intake structures	10	-	-
Water Tower/Tank	12	-	-
Water Treatment Plant	18	-	6
Water/Sanitation Office	15	-	-
Well	86	28	-
TOTAL	159	30	8

— No facilities belonging to this category were identified by KI

Source: KI Survey, June/July 2019 and MWE, feedback on Aden City Profile, April 2020.

The water and sanitation sectors were seriously affected following the eruption of hostilities in 2015. Water coverage for Aden local corporation fell from 92% in 2014 to 86% in 2017, while the sewage coverage for the same years decreased from 79% to 69%.¹⁵⁷ Another report suggests that water coverage in Aden amounted to 75% in 2017, which is around 17 days per month.¹⁵⁸

Also, while the water pumps were estimated to operate 22 hours per day before 2015, after July 2018 they were operating for 8 hours per day.¹⁵⁹ To cope with the lack of water resources, local population have resorted to the private sector, including illegal drilling.

Non-revenue water (water losses) increased from 41% in 2014 to 55% in 2017.¹⁶⁰

¹⁵⁷ Adel Al-Gheethi et al, "Effectiveness of Selected Wastewater Treatment Plants in Yemen for Reduction of Faecal Indicators and Pathogenic Bacteria in Secondary Effluents and Sludge," in *Water Practice and Technology* 9,3 (2014): 293–306.

¹⁵⁸ UNOPS, Yemen Integrated Urban Emergency Services Project (YIUSEP), Environmental and Social Management Framework (ESMF), 2018, <http://documents.worldbank.org/curated/en/494961526464057594/pdf/P164190-ESMF-Final.pdf>

¹⁵⁹ Naif Mohammed Abu-Lohom et al, *Water Supply in a War Zone, A Preliminary Analysis of Two Urban Water Tanker Supply Systems in the Republic of Yemen*, (Washington DC: The World Bank, July 2018).

¹⁶⁰ Dorsch International Consultants GmbH, *Yemen Water Sector Damage Assessment Report of Twelve Water Supply and Sanitation Local Corporations (LCs) and their Affiliated Branch Offices and Utilities*, (Bonn and Eschborn: GIZ, September 2018).

Damage

Several water and sanitation facilities sustained damaged during the conflict. While some of them have already been rehabilitated, the following infrastructure is still damaged :¹⁶¹

- 3 water reservoirs;
- Bir Nasser well field.

Damage to the sanitation infrastructure has reportedly affected water pumping stations in Khur Maksar, Attawahi and Craiter districts, parts of the drainage system to the sea, and the sanitation laboratory in Al-Arish.¹⁶² The equipment from the Ash-Shaab laboratory was reportedly looted. As of 2017, estimated damage cost for the WASH sector in Aden city varies between \$48 and 59 million.¹⁶³ The building, as well as office equipment and furniture, of the Aden local corporation sustained partial damage.¹⁶⁴

Energy Supply

The water and sanitation sectors' operational capacity heavily depend on energy supplies. Intermittent electricity supply has led to the increased reliance on diesel generators. Aden local corporation owns 82 generators, 26 of which are intended to serve the water supply system (with only 16 operational) and 35 for the sanitation system. Ballooning fuel prices coupled with the increased fuel consumption has led to a 250% increase in fuel expenses from 2014 to 2016.¹⁶⁵

4. Population Needs

According to the World Bank Group report (2017), average water consumption in Aden governorate is 8.2 m³ per month per HH, for an average HH of nine. Almost half (44%) of the HHs in Aden have already reduced water consumption either because of unavailability or because of high prices.¹⁶⁶ As of April 2020, Aden local council provided 30 million m³ of water per year, while the estimated demand was 39 million m³.¹⁶⁷

All HHs in Aden rely on piped water as the primary source for drinking and other household functions.¹⁶⁸ Other sources of water supply include trucking, boreholes, and storage tanks. The most persistent issues in the community are lack of water points, long waiting times at water point queues, non-functionality of water points, and perceived poor quality of water.

Currently, 76% of the CFPs identified hygiene and sanitation facilities, such as toilets, baths and showers to be amongst the critical needs in Aden.¹⁶⁹ This said, the need is the highest in Al Mualla, Attawahi and Craiter, where all respondents selected this option. Overall, potable water was identified as a critical need by almost two-thirds of the respondents across the city, with all CFPs identifying this issue in two districts, namely Ash Shaikh Outhman and Craiter. Furthermore, 42% of the CFPs stated that hygiene items, including soaps, cleaning products, pads and diapers are needed across the city, with the highest need in Attawahi district, where 80% of the respondents selected this option.

Furthermore, all areas in five districts in Aden (Al Mualla, Attawahi, Craiter, Dar Sad and Khur Maksar) have constant sewage problems, characterized by visible wastewater.¹⁷⁰ Sewage leaks and overflow can be attributed to damaged pump stations and power outages.

Between 80% and 96% of HHs have access to safe and functioning latrines.¹⁷¹ However, most common problems reported related to latrines include full cesspits, clogged pipes, insufficient water, absence of sewage system, lack of latrines, and lack of safety when using latrines.¹⁷²

Furthermore, in six districts, the KIs reported that most people use soap and have soap in their households, while in Al Buraiqeh and Dar Sad most people use soap, but do not have soap as it is not available.¹⁷³

¹⁶¹ MWE, feedback on Aden City Profile, April 2020.

¹⁶² Dorsch International Consultants GmbH, Yemen Water Sector Damage Assessment Report of Twelve Water Supply and Sanitation Local Corporations (LCs) and their Affiliated Branch Offices and Utilities, (Bonn and Eschborn: GIZ, September 2018).

¹⁶³ World Bank, Addressing the challenge of extreme water scarcity for reconstruction and beyond (English), (Washington, D.C.: World Bank Group, January 2017), <http://documents.worldbank.org/curated/en/673061508406087826/Addressing-the-challenge-of-extreme-water-scarcity-for-reconstruction-and-beyond>

¹⁶⁴ UNOPS, Yemen Integrated Urban Emergency Services Project (YIUSEP), Environmental and Social Management Framework (ESMF), (2018).

¹⁶⁵ Dorsch International Consultants GmbH, Yemen Water Sector Damage Assessment Report of Twelve Water Supply and Sanitation Local Corporations (LCs) and their Affiliated Branch Offices and Utilities, (Bonn and Eschborn: GIZ, September 2018).

¹⁶⁶ Naif Mohammed Abu-Lohom et al, Water Supply in a War Zone, A Preliminary Analysis of Two Urban Water Tanker Supply Systems in the Republic of Yemen, (Washington DC: The World Bank, July 2018).

¹⁶⁷ MWE, feedback on Aden City Profile, April 2020.

¹⁶⁸ KI Survey, June/July 2019.

¹⁶⁹ CFP Survey, June/July 2019

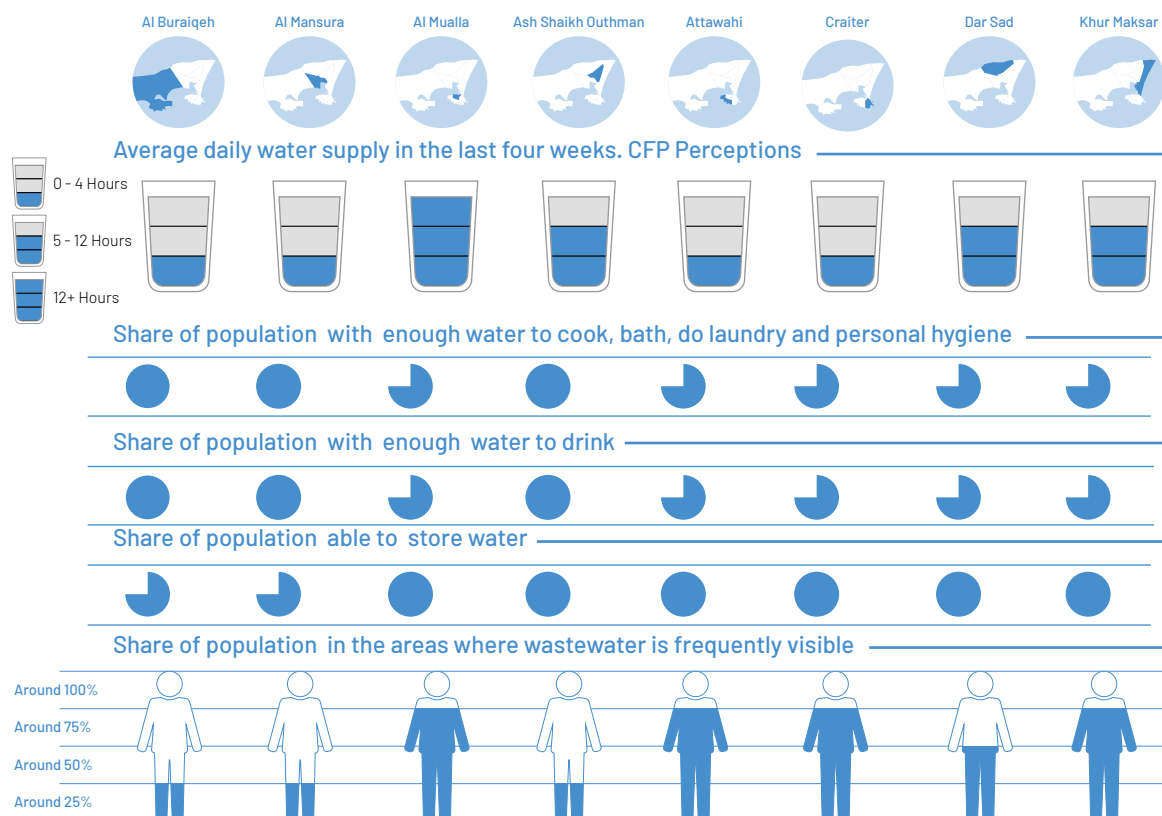
¹⁷⁰ MWE, feedback on Aden City Profile, April 2020.

¹⁷¹ KI Survey, June/July 2019.

¹⁷² Ibid.

¹⁷³ Ibid.

Figure 45: Availability of WASH Services in Aden City (per district), 2019.



Source: CFP and KI Surveys, June/July 2019.¹⁷⁴

¹⁷⁴ Note: Average daily water supply was determined based on the highest number of respondents who selected this option. In case two answer options were selected by an equal number of respondents, the answer was determined based on the highest number of HHs living in the area covered by the respondent.

5. Humanitarian & Governmental Interventions

As of March 2020, there are 4 WASH Cluster partners in Aden governorate: 1 INGO, 2 NNGOs and 1 UN Agencies and 3 governmental organizations.¹⁷⁵

Activities undertaken by humanitarian partners include:

- Distribution of basic and consumable hygiene kits;
- Community led cleaning campaigns for IDPs, vulnerable groups and other affected communities;
- Repair, rehabilitation or augmentation of water supply system;
- Provision of water disinfecting agents for water supply treatment;
- Water quality surveillance;
- Provision of operational support to sanitation systems;
- Provision of access to safe water through water trucking;
- Provision of communal water tanks/ trucks;
- Hygiene promotion and community engagement;
- Training of community volunteers in hygiene promotion and community engagement approaches;
- Capacity building of local WASH actors in humanitarian WASH programming;
- Provision of HH level water treatment options.

Further support to the WASH sector in Aden includes provision of fuel, generators, pumps, suction trucks and parts required for the rehabilitation of infrastructure.¹⁷⁶ In addition, several INGOs supported labor cost and provision of salaries, as well as the chlorination treatment of wells since July 2018, when Aden local corporation's water testing laboratory became temporarily non-operational due to lack of funds and damage.¹⁷⁷

Parts of the infrastructure was rehabilitated by the humanitarian actors on the ground, and some media reports suggest that ERC by supplying different water and sanitation supplies¹⁷⁸

When asked whether the humanitarian assistance offered to the population in the WASH sector met minimum standards, sector experts responded that in five districts it does not meet minimum standards, while in Al Buraiqeh and Al Mansura it partially meets it and in Dar Sad it exceeds it.¹⁷⁹

¹⁷⁵ WASH Cluster Yemen, <https://www.humanitarianresponse.info/en/operations/yemen/water-sanitation-hygiene>

¹⁷⁶ Dorsch International Consultants GmbH, Damage Assessment Report of Twelve Water Supply and Sanitation Local Corporations (LCs) and their Affiliated Branch Offices and Utilities, (Bonn and Eschborn: GIZ, September 2018).

¹⁷⁷ Naif Mohammed Abu-Lohom et al, Water Supply in a War Zone, A Preliminary Analysis of Two Urban Water Tanker Supply Systems in the Republic of Yemen, (Washington DC: The World Bank, July 2018).

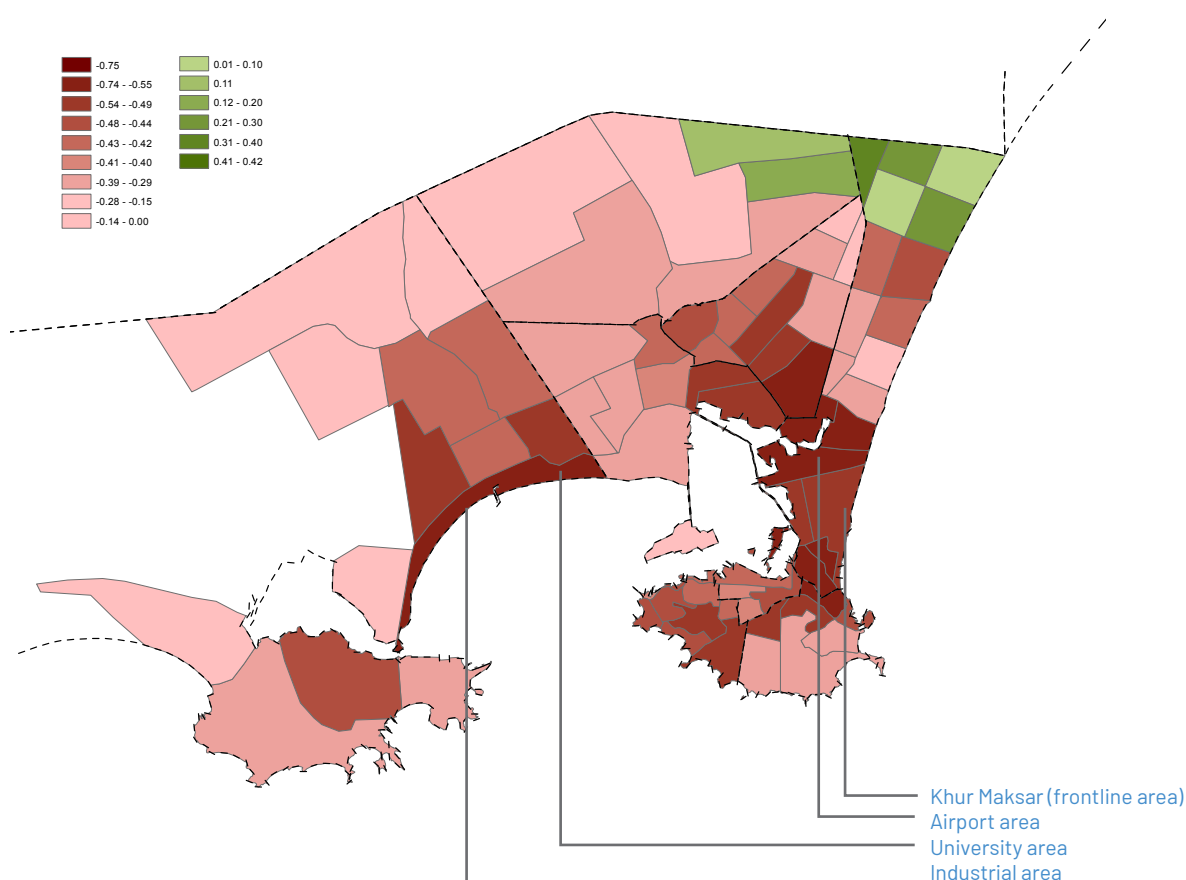
¹⁷⁸ Emirates News Agency, "ERC provides suction pumps to sanitation establishment in Aden, Yemen", May 3, 2018, <http://wam.ae/en/details/1395302686565>

¹⁷⁹ KI Survey, June/July 2019.

Highlights

- The energy and electricity sector in Yemen sustained the most damage. While some of the power plants have been rehabilitated, the electricity grid remains damaged.
- Lack of stock materials, insufficient financial means, and intermittent service provision were reported as the main problems related to the energy sector that require immediate intervention.
- Intermittent electricity supply affects the provisions of other services, most notably water, as the pumping stations require electricity supply.
- Street lighting is generally poor. Overall, the main streets are better lit, however sector experts report that the street lighting infrastructure is partially damaged in all districts.
- Electricity supply is uneven throughout the city, with Al Buraiqeh and Ash Shaikh Outhman districts least supplied, with an average of 0-4 hours per day in June – July 2019.

Figure 46: Percentage change in nightlight January 2014–2018, UN-Habitat (2019).



Sources: Earth Observation Group, NOAA National Centers for Environmental Information (2012–2019) Data processed by PNGK.

1. Overview

According to pre-conflict data, Yemen is the least connected country in the region in terms of electricity, with only 55% access rate from all sources.¹⁸⁰ In 2010 Heavy Fuel Oil and diesel-fired plants, owned by the Public Electricity Corporation (PEC), accounted for 70% of the grid-connected energy generation.¹⁸¹

The electrical grid was severely affected after 2015. Sustained damage led to power outages in most parts of the city, severely affecting both the public at large as well as other sectors, most prominently, water, sanitation, and hygiene. Although supply has increased since 2017, structural damages to facilities and infrastructure require considerable work being done before being able to satisfy demands at the city-level.

¹⁸⁰ World Bank, Republic of Yemen Restoring and Expanding Energy Access: Power Sector Reengagement Note, (Washington, D.C.: World Bank Group, 2017), <http://documents.worldbank.org/curated/en/655811496412539032/Republic-of-Yemen-Restoring-and-expanding-energy-access-power-sector-reengagement-note>

¹⁸¹ Ibid.

Institutional and legal framework

The cabinet-level agency responsible for administering Yemen's electric power and policy is the Ministry of Electricity and Energy. The PEC is a public enterprise responsible for energy generation, distribution, and transmission.¹⁸² The central piece of national legislation for the electricity sector is the 2009 Electricity Law, which was introduced to improve power sector management, including facilitation of private sector environment.¹⁸³ The legislation also established the Rural Electrification Authority and the Electricity Sector Regulatory Board, with the latter one responsible for setting business tariffs, monitoring compliance, and encouraging the use of renewable energy. As of 2016, the board has yet to convene. In 2002, the GoY established a dedicated department within the Ministry of Electricity and Energy and reorganized it in 2009 to address renewable wind and solar energy sectors.¹⁸⁴ The government plans to increase the use of renewable energy to 15-20 % by 2025.

2. Infrastructure and Operational Capacity

Marib power plant, with a capacity of 300 MW, is the largest power plant in Yemen, supplying approximately 40% of Yemen's energy.¹⁸⁵ From 2011 to 2015, Marib power plant sustained damage due to several attacks, and needed urgent rehabilitation.

Apart from Marib Gas Power Plant, Aden city relies on three main power stations: Khur Maksar, Al Mansura, and Al Hiswa power plants, situated close to the coast in Al Baraiqeh. The Khur Maksar oil power plant has a power capacity of 30 MW and has been operating since 1974.¹⁸⁶ In 2006, the Al Mansura 1 and Al Mansura 2 oil power plants were built with a total capacity of 139 MW, while Al Hiswa oil power plant has a capacity of 125 MW.¹⁸⁷ Al Hiswa power plant was severely damaged during the conflict. In 2016, it resumed operations following rehabilitation.¹⁸⁸

At the national level, as of 2016 the supply of electrical energy relies overwhelmingly on fossil fuels (79.91% of installed capacity), while natural gas and renewable energy amount to 20% and 0.09% respectively.¹⁸⁹ The Aden Refinery, one of the only two refineries in Yemen, is the largest nationally and produced almost all of the national capacity of 140,000 bbl./d. in 2013. However, even prior to the conflict, the national demand was not met, and Yemen was dependent on petroleum imports.

Table 11: Energy Infrastructure Capacity, 2018.

Infrastructure	Total
Transformer stations (11/33 KV)	16
Transformers (11/33 KV)	30
Capacity of the main stations (33/11 KV) – 531 MVA	
Transformer sub-stations (0.4/11 KV)	1,435
Transformers (0.4/11 KV)	1,621
Capacity of the sub-stations (11/0.4 KV) – 912.44 MVA	

Source: PEC, Achievement Report for 2018 and preparedness for 2019.

3. Operational Capacity

Power outages are common across the country. In 2015, half of Aden had no power at all.¹⁹⁰ Lack of electricity has a negative impact on the availability of water since pumping stations require adequate electricity supply.

In 2013, electricity tariffs for Urban HHs in Yemen are shown in the below table¹⁹¹:

Table 12: Electricity Tariffs in Yemen, 2013.

200-0 KWh	6 YER (0.028\$)
350-201 KWh	9 YER (0.042\$)
700-351 KWh	12 YER (0.056\$)
More than 700 KWh	19 YER (0.088\$)

¹⁸² International Energy Charter, Energy Investment and Business Climate Report for Observer Countries, Brussels: Energy Charter Secretariat, (2017): 12, https://energycharter.org/fileadmin/DocumentsMedia/Occasional/Yemen_Investment_Report.pdf

¹⁸³ Ibid.

¹⁸⁴ Ibid, 14

¹⁸⁵ Yemen Times, "Yemen's largest power plant in need of urgent repairs: 'could stop at any point'", March 18, 2015, <https://reliefweb.int/report/yemen/yemen-s-largest-power-plant-need-urgent-repairs-could-stop-any-point>

¹⁸⁶ Find Power, "List of Power Plants in Yemen", <http://www.findpower.com/library/list-of-power-plants-in-yemen-48.html>. See also, Industry About, <https://www.industryabout.com/country-territories-3/1463-yemen/fossil-fuels-energy>

¹⁸⁷ Ibid.




¹⁸⁸ Dorsch International Consultants GmbH, Damage Assessment Report of Twelve Water Supply and Sanitation Local Corporations (LCs) and their Affiliated Branch Offices and Utilities. (Bonn and Eschborn: GIZ, September 2018): 39.

¹⁸⁹ International Energy Charter, Energy Investment and Business Climate Report, 19.


¹⁹⁰ Borgen Magazine, "Yemen's Solar Power Surge," August 13, 2015, <https://www.borgenmagazine.com/yemens-solar-power-surge/>

¹⁹¹ International Energy Charter, Energy Investment and Business Climate Report for Observer Countries, November 2016, https://energycharter.org/fileadmin/DocumentsMedia/Occasional/Yemen_Investment_Report.pdf

Table 13: Total Number of Energy Facilities (Private and Public) and their Functionality in Aden City, 2019.

			
Commercial Power Station	-	1	-
Oil Tank	-	5	-
Oil/Gas power plants	1	5	-
Distribution Substation*	1,705	-	50
Substation (Transmission)	25	-	-
Supply warehouse/ storage	5	10	-
Tower	110	-	-
Transmission Line	2	-	-
Administrative offices and headquarters	58	-	-
TOTAL	1,905	31	50

* Distribution station includes 1 step-down transformer & 1 distribution panel.

 No facilities belonging to this category were identified by KI

Source: KI Survey, June/July 2019.

According to the World Bank's Yemen Power Sector Reengagement Note (2017), most of the World Bank's interventions in the previous decade were unsuccessful partly due to the lack of institutional capacity to handle large-scale electricity infrastructure projects.¹⁹²

Oil and gas refineries sustained severe damage. In 2016, the Khur Maksar and Al Mansura power plants were out of service, while Al-Hiswa plant reduced its capacity by three-quarters.¹⁹³ The local population was reportedly enjoying only an average of 6 hours of electricity per day. This also had a similar impact on infrastructure, water supply, and health sectors.

Currently, most of the power plants, oil tanks and supply warehouses are partially functioning. Fifty distribution substations in Al Mualla, Attawahi and Khur Maksar are non-functioning.

4. Population Needs

According to Emergency Employment and Community Rehabilitation (EECR) Cluster Multi-Sector Early Recovery Assessment, electricity is the least capable utility to meet the population demand.¹⁹⁴ While the service provision in Aden is the strongest across Yemen after Sa'ada, with 29% of respondents stating that the service provision was "very" or "somewhat" capable, it remains the most sought supply for recovery and rehabilitation.

Electricity infrastructure was reported by 60% of respondents as the most damaged sector.¹⁹⁵ It represents the highest number nationally after Ibb and rehabilitation of the electricity provision was cited as one of the top three needs in the governorate. Currently, sector experts indicate that the electricity grid is partially damaged, and that the population resorted to alternative electricity sources.¹⁹⁶

The public grid remains the most common electricity source in Aden. Supply varies between the districts, with most of the CFPs indicating four to twelve hours per day in the last four weeks.¹⁹⁷ Al Buraieq district is the most affected, with the majority of respondents stating that the population receives up to four hours of electricity per day. Sector experts, however, suggest that all the districts in Aden receive more than twelve hours of electricity per day. The disparities in the range of answers may be attributed to different supply within the districts or damage to the distribution grid.

Currently, a third of CFPs indicate that energy commodities for cooking, lighting and heating are amongst the critical goods needed in Aden.¹⁹⁸ The need is the greatest in Al Mansura and Al Buraieq, where over half of CFPs highlighted this issue. This is followed by Ash Shaikh Outhman, Dar Sad, Al Mualla and Craiter where between 29% and 43% of the respondents selected this option. In Attawahi and Khur Maksar, no CFPs indicated that energy commodities are amongst the critical goods needed.

According to sector experts, the three main problems which require immediate interventions are restocking materials and supplies, full resumption of services, and provision of adequate financial means.¹⁹⁹

¹⁹² World Bank, Republic of Yemen Restoring and Expanding Energy Access: Power Sector Reengagement Note, (Washington, D.C.: World Bank Group, 2017).

¹⁹³ Mohammed Mukhashaf, "Power Cuts, Violence Fuel Yemen Separatists' Dreams," Reuters, June 14, 2016, <https://www.reuters.com/article/us-yemen-security-aden/power-cuts-violence-fuel-yemen-separatists-dreams-idUSKCN0Z01QC>

¹⁹⁴ Tom Lambert and Afar Consulting, Yemen Multi-Sector Early Recovery Assessment, (EECR Cluster Yemen, 2018), <https://www.humanitarianresponse.info/sites/www.humanitarianresponse.info/files/documents/files/yemen-multisector-earlyrecoveryassessment.pdf>

¹⁹⁵ Ibid.

¹⁹⁶ KI Survey, June/July 2019.

¹⁹⁷ CFP Survey, June/July 2019.

¹⁹⁸ Ibid.

¹⁹⁹ KI Survey, June/July 2019.

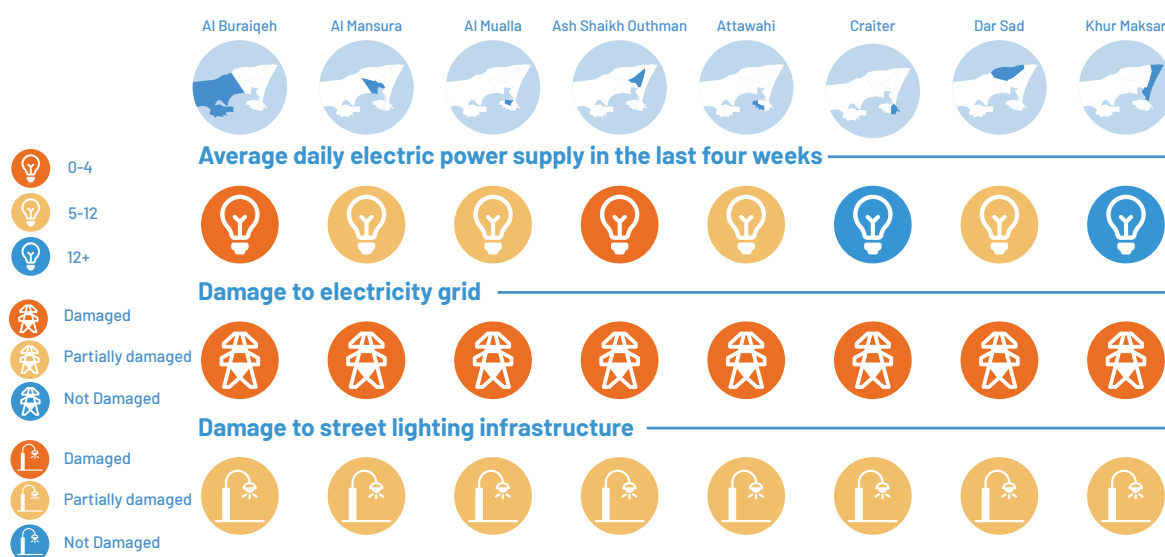
Solar panels

The decrease of electricity supply led residents to increasingly rely on solar energy, which is managed by the private sector.²⁰⁰ Access to solar energy remains limited, however, most HHs are unable to afford both purchase of panels and long-term upkeep. Moreover, components are in constant risk of breakdown given their poor technological quality.²⁰¹ Conversely, installing a small generator or inverter batteries remains an affordable alternative. Although unable to provide sustainable long-term answers, the latter do provide the basic minimum of electricity coverage during blackouts.

Street lightening

Street lighting coverage across Yemen is limited. This also has a harmful impact on street safety and leads to higher crime rates and robberies. In Aden governorate, lamps of 400W and 250W capacity are used, with less than 30,000 250W lamps and just above 5,000 400W lamps.²⁰² According to local sources, commonly, only the main streets in each district are well lit. Secondary streets and alleyways streets often lie in darkness. It was also noted that the lighting on the highways is insufficient, which can lead to hazardous driving conditions. In half of the districts, sector experts strongly disagreed that streets are safe for commuting on foot, while in the remaining four they were neutral.²⁰³

Figure 47: Energy and Electricity Supply in Aden City (per district), 2019²⁰⁴



Source: KI and CFP Surveys, June/July 2019.

²⁰⁰ World Bank, Republic of Yemen Restoring and Expanding Energy Access: Power Sector Reengagement Note, 4.

²⁰¹ Ibid.

²⁰² Maged Mahmoud et al., Assessment of the status of solar PV in Yemen, (Washington, D.C.: World Bank Group, 2017), <http://documents.worldbank.org/curated/en/284461511876486207/Assessment-of-the-status-of-solar-PV-in-Yemen>

²⁰³ KI Survey, June/July 2019.

²⁰⁴ Average daily electric power supply was determined based on the highest number of respondents who selected this option. In case two answer options were selected by an equal number of respondents, the answer was determined based on the highest number of HHs living in the area covered by the respondent.

In Al Buraieqeh, Al Mansura, Ash Shaikh Outhman and Dar Sad the street lighting infrastructure is damaged, while in other districts it is partially damaged.

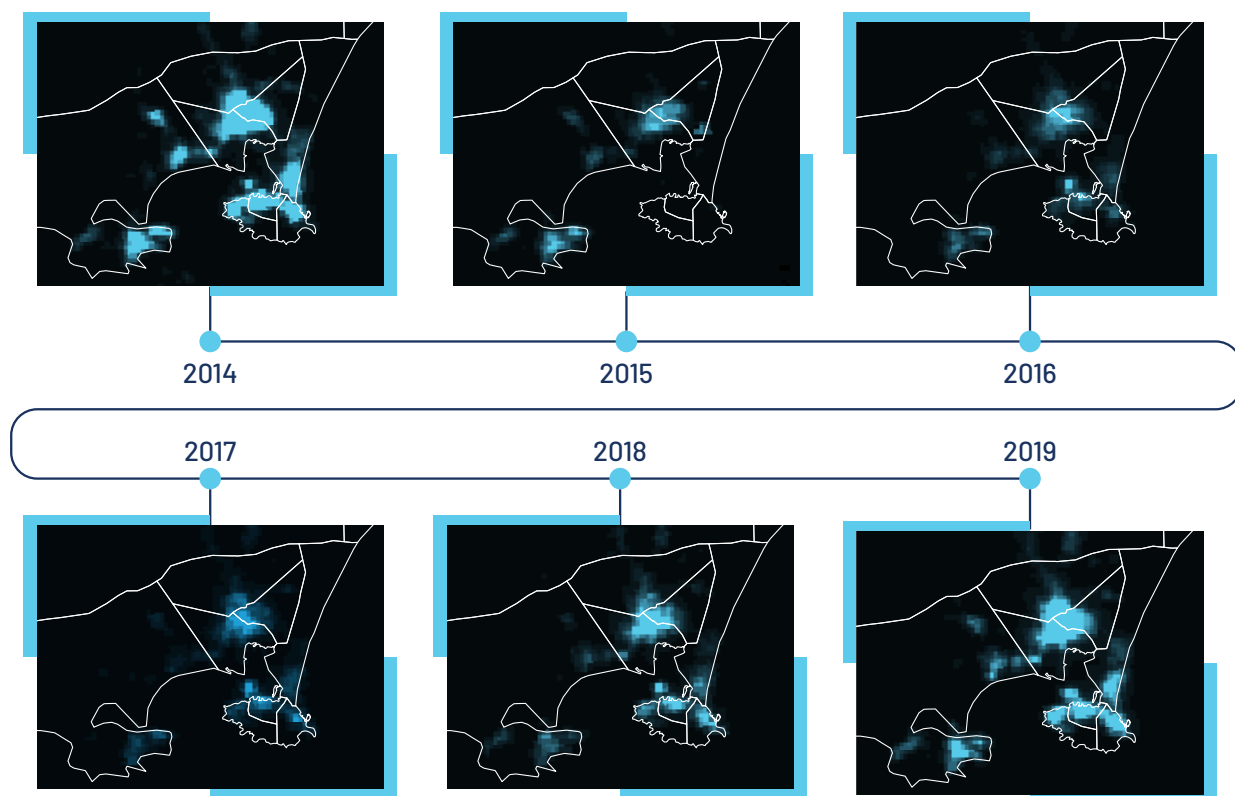
In 2016, UAE reportedly signed an agreement to provide Yemen with \$47 million to subsidize electricity in Aden.²⁰⁵ Under the terms of the agreement, the money will be used to procure parts for the electric and gas distribution networks. Media reports state that the deal was signed between UAE Khalifa bin Zayed Foundation for Humanitarian Works with Yemen's Ministry of Electricity to construct a new power plant in Aden.²⁰⁶ The power station is projected to cost \$100 million and operate at a 120 MW capacity.²⁰⁷

According to the participants at the Joint Analysis and Recovery Planning workshop, the United Nations Office for Project Services (UNOPS) proposed to have 828 lighting poles powered by solar energy and 500 were already implemented in 4 districts as of November 2019. UNOPS is currently requesting financial contribution to other stakeholders and the international community in order to mobilize the remaining amount to be funded as an emergency project. Currently, there is still a need of 3,400 lighting poles in 5 districts. LED lightings are also needed. However, it is important to note that the UN has been only supporting the street lighting based on the solar energy, but not from the primary source of the grid system. Therefore, further support is required for the primary system to rehabilitate the main energy source in Aden.

²⁰⁵ Uğur Ertaş, "UAE gives loan for electricity of Yemen's port city of Aden," AA Energy, June 13, 2016, <https://www.aa.com.tr/en/energy/electricity/uae-gives-loan-for-electricity-of-yemens-port-city-of-aden/6361>

²⁰⁶ The National, "UAE signs \$100 million deal for power plant in Yemen's Aden", June 12, 2019, <https://www.thenational.ae/business/energy/uae-signs-100-million-deal-for-power-plant-in-yemen-s-aden-1.873391>.

²⁰⁷ Gulf News, "UAE to Build Power Plant in Aden", 12 June 12, 2019, <https://gulfnews.com/world/gulf/yemen/uae-to-build-power-plant-in-aden-1.64551599>

Figure 48: NightLight Aden

Sources: Earth Observation Group, NOAA National Centers for Environmental Information.

14 Solid Waste Management (SWM)

Highlights

- Number of waste collection vehicles has significantly decreased after 2015, with many vehicles damaged, inaccessible or stolen. There was also a drastic reduction in numbers of available personnel.
- The first project for separation of medical waste was launched in 2017 in one of Aden's hospitals. This practice is essential to identify different types of medical waste (i.e. infectious, radioactive, chemical) and ensure that it is disposed of safely. Poor management of medical waste poses serious health risks, including spread of infections, toxic exposure to pharmaceuticals products and chemical burns.²⁰⁸
- While garbage is collected once or multiple times per week in most of the districts, piles of garbage can be seen in all districts. Five districts (Al Mualla, Attawahi, Craiter, Dar Sad and Khur Maksar) have many piles of garbage in most areas. This can be attributed to the lack of containers or poor solid waste management at district level.
- Dar Sad is affected the most, with garbage being collected once every month or less, most areas having many piles of garbage everywhere and half of the population living in areas where it is frequently visible.

1. Overview

Before the escalation of the conflict, Solid Waste Management was increasingly recognized as a persisting problem. The rapid expansion of the city and demographic growth led to the accumulation of large quantities of waste. While in major cities, 90% of the waste was estimated to be collected and disposed, in some other governorates this rate was estimated to be below 20%.²⁰⁹ Although the National Strategy for Solid Waste Management (NSSWM), 2009 – 2013 recognized the importance of converting waste materials into new materials and objects, recycling activities are scarce to non-existent. Nonetheless, NSSWM highlighted the need to conduct awareness campaigns and encouraged higher public and government involvement. One particularly pressing issue is motivating residents to dispose waste in designated garbage containers and not dumping them on the streets.

There are no specialized facilities to deal with hazardous waste and separation of medical waste from conventional garbage remains uncommon.²¹⁰

The Solid Waste Management in Aden has been severely affected by the escalation of the conflict in 2015 and has led to a decrease of Solid Waste Management (SWM) staff and the fleet size of garbage collection trucks. Current data suggests that while waste collection activities are frequent, most locations across the city have visible piles of garbage.²¹¹ The most recent estimate of municipal waste generation rate for urban areas is 0.6 kg per person per day.²¹²

²⁰⁸ WHO, Health Care Waste, February 8, 2018, <https://www.who.int/news-room/fact-sheets/detail/health-care-waste>

²⁰⁹ Republic of Yemen, MoLA, National Strategy for Solid Waste Management 2009-2013, (2009), https://www.iu-info.de/file-admin/user_upload/03-Arbeitsfelder/3.5-Kreislauf-_und_Ab-fallwirtschaft/3-Yemen_National_SWM_Strategy.pdf

²¹⁰ UNOPS, Yemen Integrated Urban Emergency Services Project (YIUSEP) Environmental and Social Management Framework (ESMF), May 9, 2018, <http://documents.worldbank.org/curated/en/494961526464057594/pdf/P164190-ESMF-Final.pdf>

²¹¹ CFP Survey, June/July 2019.

²¹² MoLA, National Strategy for Solid Waste Management 2009-2013, (2009).

Stakeholders and legal framework

Following the unification of Yemen in 1990, SWM fell under the oversight of several governmental entities. Conventionally, the Ministry of Housing and Municipalities (MHM) was the agency responsible since its inception in the 1970s.²¹³ After 1990, MHM was renamed the Ministry of MCHUP: Ministry of Construction, Housing and Urban Planning. In 1997, the administrative functions for SWM shifted to the MPWH. In 1999, City Cleansing and Improvement Funds (CCIF) were established to manage the financial aspects for SWM. The Public Cleansing Law²¹⁴ (Law 39/1999) was passed in the same year and a bylaw was drafted to provide detailed regulations for the Public Cleansing Law. Following the LAL of 2000, local authorities became responsible for waste collection and management, and in 2006, the responsibility for SWM came under the Ministry of Local Administration (MoLA) and the districts' LCs.²¹⁵ In Aden, the CCIF administration is directly providing SWM services in the city.

The NSSWM tasked MoLA with the authority to reorganize and manage policy making, coordinate at the national level, as well as supervise the work of LCs in their own districts.²¹⁶ In 2008, the General Directorate for Solid Waste Management was established within MoLA as the supervising agency in charge of implementing the legal framework, issue national strategy and guidelines, coordinate with the CCIFs, and distribute government funds. The NSSWM also recognized the need to revise the Public Cleansing Law and bring it in line with MoLA and LCs. However, the escalation of the conflict in Yemen after 2015 prevented implementation.²¹⁷

The CCIFs are managed by the governorate council. According to the NSSWM, 83% of the capital investment for all CCIFs came from foreign donors, but also included monies allocated by the central government.²¹⁸ Cabinet Decree 236 of 2000 specified that at least 60% of the fund must be used to finance SWM activities, while the remainder for other projects such as urban rehabilitation and beautification.

2. SWM Infrastructure and Operational Capacity

Aden's landfill is located 32 km from the city center, near the Bir Ahmed water basin in the Bir Al Neama'a area. The landfill has been operational for over 15 years and the legal ownership is by the Aden CCIF and administered by the Landfill Department within the CCIF. It spreads across the area of 4 km² and has no protective fence. In addition to Aden, it also receives waste from Al Hawtah city in Lahj Governorate.²¹⁹

SWM sector logistics have been significantly affected by the escalation of the conflict in 2015. According to the UNDP Emergency Waste Assessment (2015), out of total fleet of 118 waste collection trucks, 20 were operational, 12 out of order but repairable, One damaged beyond repair, six stolen and 79 inaccessible.²²⁰ Furthermore, among the six cities assessed by the UNDP in Yemen, Aden was affected by the highest reduction of personnel, with only 3% of sweepers, 18% of drivers, 22% of collectors, 6% of mechanics and 7% of supervisors available, compared to pre-conflict numbers. The landfill was receiving 350 tons per day but had only one excavator and one bulldozer. According to a UNOPS report, in 2018 the landfill received 650 tons of waste per day and the service coverage reached 80%.²²¹ While the landfill used to be equipped with a weighbridge, as of May 2018 it was non-operational.²²² Sorting facilities for paper, cardboard, used tires and plastic were reportedly destroyed.²²³

According to CFPs, there are four dumpsites in Aden, all of which are fully functioning.

²¹³ Ibid.

²¹⁴ Ibid.

²¹⁵ Ibid.

²¹⁶ Ibid.

²¹⁷ SWEEP-Net, Country Report on the Solid Waste Management in YEMEN (Bonn and Eschborn: GIZ, 2014), 12, https://www.retech-germany.net/fileadmin/retech/05_mediathek/laenderinformationen/Jemen_RA-ANG-WEB-Laenderprofile_sweep_net.pdf

²¹⁸ MoLA, National Strategy for Solid Waste Management 2009-2013, (2009)

²¹⁹ UNOPS, Yemen Integrated Urban Emergency Services Project (YIUSEP) Environmental and Social Management Framework (ESMF), (2018).

²²⁰ Olmo Forni, Aiden Short, et al., Yemen Emergency Waste Assessment, UNDP, August 2015, <http://www.ye.undp.org/content/yemen/en/home/library/poverty/emergency-waste-assessment.html>


²²¹ UNOPS, Yemen Integrated Urban Emergency Services Project (YIUSEP) Environmental and Social Management Framework (ESMF), (2018).

²²² Ibid

²²³ Olmo Forni, Aiden Short, et al., Yemen Emergency Waste Assessment, UNDP, August 2015, <http://www.ye.undp.org/content/yemen/en/home/library/poverty/emergency-waste-assessment.html>

Table 14: Total Number of SWM Facilities and their Functionality in Aden City, 2019

	Fully Functioning	Partially functioning	Non-functioning
			
Dumping Sites	4	-	-
TOTAL	4	-	-

 No facilities belonging to this category were identified by KI

Source: KI Survey, June/July 2019

Special waste

As of September 2013, there were no specialized activities in place to tackle collection and disposal of hazardous waste.²²⁴ In 2007, a specialized department was established within the Cleaning Fund for collection and transportation of the Construction Waste. The department hired nine civil engineers and purchased vehicles for collection of waste.²²⁵ In 2017, the first project for separation of medical waste among other types of solid waste was launched in Aden governorate.²²⁶ The project was launched by the Al-Gomhariah Hospital Authority and was intended to focus on 31 units. Across Yemen, medical waste generation was estimated to be 3,916 tons/year in 2010.²²⁷

3. Population Needs

The majority of the CFPs indicate that waste is collected once or multiple times a week. However, according to the sector experts, most people in four districts (Al Mualla, Attawahi, Craiter and Khur Maksar) live in areas where garbage dumps are frequently visible. This poses serious health hazards, and can also be associated with the lack of containers which results in waste being dumped nearby. Sector experts also suggested that in five districts in Aden most areas have many piles of strewn garbage, while the remaining three districts, stated that some areas are clean, but others have piles of garbage.

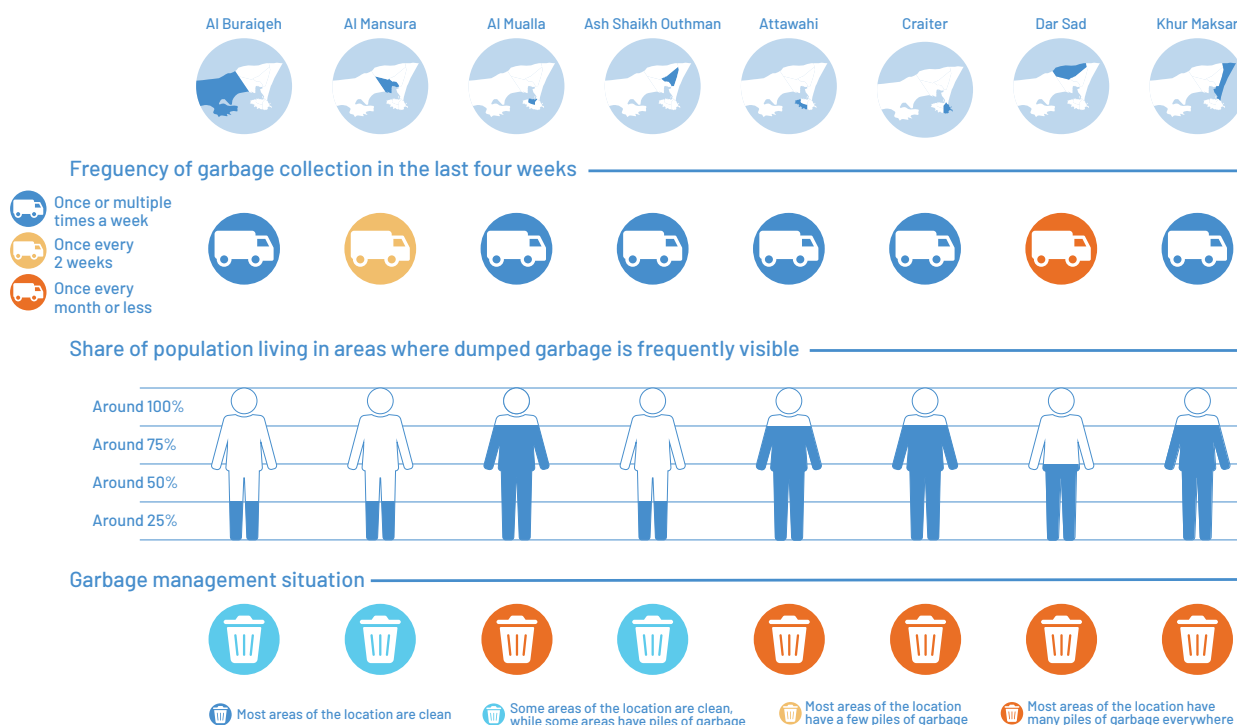
²²⁴ SWEEP-Net, Country Report on the Solid Waste Management in YEMEN (Bonn and Eschborn: GIZ, 2014).

²²⁵ Ibid.

²²⁶ Saba News Agency, "Medical waste segregation project launched in Aden", August 21, 2017, <https://www.sabanew.net/viewstory/21412>

²²⁷ SWEEP-Net, Country Report on the Solid Waste Management in YEMEN (Bonn and Eschborn: GIZ, 2014).

Figure 49: Garbage Management in Aden City (Per district), 2019



Source: KI and CFP Surveys, June/July 2019

4. Humanitarian Interventions and Development Projects

In early 2016, UNDP in partnership with the Government of Japan launched a project to remove debris from Aden. The project aimed to remove 55,000 tons of debris and 22,000 tons of waste.²²⁸

In 2018, UNOPS undertook a cleaning campaign in the cities of Sana'a and Aden. The project aimed to enhance coordination between local actors, launched subprojects for waste collection, and funded cleaning campaigns in the city.²²⁹ Ultimately, the project managed to collect and dispose of 100,000 m³ of accumulated waste out of an actual need of 905,000 m³.

ERC launched an additional project of supplying the Aden Municipality with 16 trucks and 1,600 containers to increase local capacities for waste collection and transportation.²³⁰

²²⁸ UNDP, "UNDP and the Government of Japan support removal of debris and rubble in Aden", June 9, 2016, <http://www.arabstates.undp.org/content/rbas/en/home/presscenter/pressreleases/2016/06/09/undp-and-the-government-of-japan-support-removal-of-debris-and-rubble-in-aden-.html>

²²⁹ UNOPS, "Cleaning Campaign Sana'a and Aden, Yemen", January 21, 2019, <https://ye.unopsmr.org/story/cleaning-campaign/>

²³⁰ Emirates News Agency, "ERC delivers waste disposal trucks and containers to Aden province", October 29, 2015, <http://wam.ae/en/details/1395287324675>

15 Transportation and Mobility

Highlights

- Insufficient funding was reported as the main problem related to transportation services in all districts except for Craiter. This was followed by physical damage to infrastructure, which was reported in Dar Sad, Al Mualla, Al Buraiegh and Ash Shaikh Outhman. Insufficient or inadequate public vehicles were reported in Dar Sad, Khur Maksar and Al Mualla.
- Overall, the condition of roads is poor throughout the city. The road network is completely damaged in four districts (Al Buraiegh, Al Mualla, Ash Shaikh Outhamn and Dar Sad): this limits the mobility within the city and contributes to traffic congestion across the city.
- Regional connectivity is also affected by damaged roads, notably the road connecting Aden and Taizz. Lack of funding and weak planning are further challenges to restore connectivity between the cities.
- High fuel prices contribute to high operating costs. Many people are increasingly relying on public transportation, as they are unable to afford a private car.

1. Overview

The public transportation system in Aden consists of several types of primarily low capacity vehicles that cover all city districts. Although there are no high capacity vehicles, public transportation vehicles jointly with a large number of taxis routinely create traffic congestions and damage the surface roads.

In addition, roads have suffered considerable damage from several bouts of conflict which have intermittently affected Aden since 2015. Disrepair is present not only within the city itself but also the main arteries and thoroughfares such as that connecting Aden to Taizz. While some roads have been rehabilitated, sector experts indicate that roads across the city remain either damaged or partially damaged.

AIA acts as both civil and military venue for air transport. It is currently operational, with several domestic and international destinations. Aden's seaport and container terminals has sustained some damages since 2015, but both are fully functioning and currently used for the delivery of humanitarian assistance.

Sector experts identify insufficient funding and the need to repair damaged infrastructure as the main problems requiring immediate intervention in the transportation sector.

Stakeholders and Legal Framework

The two main governmental authorities responsible for managing the transportation sector are the Ministry of Interior (MoI) and the Ministry of Transport (MoT). The former is responsible for inspecting and licensing vehicles and services while the latter sets policy²³¹ and manages airport and port facilities.²³² In addition, the MPWH supervises the overall road infrastructure, including development and maintenance.²³³ Its role, however, is restricted to the network of rural roads. The Land Transport Law was introduced on 30 March 2003 to provide the regulatory framework for land transportation.²³⁴ Prior to this, land transportation services were provided through two syndicates in the governorate (passenger and freight transport), for which companies had to register through a lengthy and expensive process. The new law sets guidelines for private companies on passenger and trucking transportation services:

- Trucking companies: the law specifies the possession of a minimum of 10 trucks, not more than two years old and a limited amount of 250 heavy trucks, 400 medium trucks or 300 light trucks per company. The MoT awards only one-year renewable licenses based on the information each company is required to submit, which includes policies, regulations and contracts among others. The law also allows companies to submit bank guarantees in lieu of registration fees. This led to a reduction of freight rates by 40% a year.
- Passenger transportation services: companies should own no less than 10 buses and have a number of passenger stations in various city points. All public bus companies in Yemen are private, apart from the state-owned Local Transport Corporation.

The law has never been fully enforced, mostly because of financial and technical issues but also because of absence in human resources capacity. For instance, while in theory the law requires all transportation vehicles to be examined, in practice many vehicles are considered unfit despite being in service.²³⁵ Further regulations were introduced in 2004 that deal with cargo and trucks freight transport, passenger (bus) transport, and car rentals.

²³¹ World Bank, Yemen - City and Inter-City Land Transport Sector: Strategy Note, 2010, <http://documents.worldbank.org/curated/en/395881468168254654/Yemen-City-and-inter-city-land-transport-sector-strategy-note>

²³² Engelke Wilfried, Yemen Transport Sector: Input to the Yemen Policy Note no. 4. on Inclusive Services Delivery, (Washington, D.C. : World Bank Group, 2017), <http://documents.worldbank.org/curated/en/636961508411397037/Yemen-transport-sector>




²³³ UNOPS, Yemen Integrated Urban Emergency Services Project (YIUSEP) Environmental and Social Management Framework (ESMF), (2018).

²³⁴ World Bank, Yemen - City and Inter-City Land Transport Sector: Strategy Note, (2010).

²³⁵ Ibid.

2. Infrastructure and Operational Capacity

Table 15: Total Number of Transportation Facilities (Public & Private) and their Functionality in Aden City, 2019.

	Fully Functioning 	Partially functioning 	Not functioning 
Airports	1	-	1
Ports	3	2	-
Highways	2	1	-
Trunk	2	3	-
Track	4	3	-
Bridges	4	-	-
Motorway (m)	8,004	8,000	-
Primary Roads (m)	6,030	7,002	-
Secondary Roads (m)	31	3	-
Tertiary Roads (m)	17,006	1,004	-
Residential Roads (m)	35,000	10,500	-
Public Transport Vehicles	867	-	67
Airplanes	2	-	-
Other transportation unit	20,000	30,000	-
TOTAL	86,956	78,518	68

Source KI Survey, June/July 2019

Public Transportation

The public transportation services inside Aden are operated by three types of vehicles: taxis with fixed routes; minibuses "Dabab," with a capacity of seven seats; and minibuses "Nuss-bus" with a capacity of 14 seats.²³⁶ According to local sources, the "Coaster" buses with a capacity of 26 seats were operational in the past. This practice, however, was discontinued since bigger buses require longer waiting time which, in turn, led to waste of petrol and inefficient use of rolling stock. In addition, many of the vehicles used were very old. Currently, 67 public transport vehicles in Al Mansura are non-operational.

The ticket cost varies based on distance. According to local sources, for shorter trips, including crossing from one district to another, the price reaches up to 250 YER, while longer distances which require crossing several districts, price would be around 350 YER. For comparison, a similar journey by taxi can cost around 3,000 YER – 4,000 YER or, occasionally, 5,000 – 6,000 YER respectively. Fuel price hikes also led to more people relying on public transportation and, in some cases, completely abandoning the use of private vehicles.

Roads and vehicles

According to the MoT data published by the World Bank, the following numbers of vehicles were registered in Aden governorate in 2007: a total of 51,803 vehicles while 33,837 are private; 11,820 transport vehicles and 6,146 taxis.²³⁷ It is important to note, however, that the practice of not registering cars is common in Yemen, and, therefore, their actual number can be higher. As of 2016, there were 211 km of asphalt roads in Aden governorate.²³⁸

Currently, public transport vehicles are both state and privately owned.

The following table presents data on the issued plates by type of vehicle between 1996-2013.

²³⁶ World Bank, Yemen, Republic of - Urban transport in Sana'a strategy note (English), (Washington, DC: World Bank), <http://documents.worldbank.org/curated/en/827131468182387385/Yemen-Republic-of-Urban-transport-in-Sanaa-strategy-note>

²³⁷ World Bank, Yemen - City and Inter-City Land Transport Sector: Strategy Note, (2010).

²³⁸ CSO, Statistical Yearbook 2017.

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Table 16: Total Number of vehicles per Type and Year in Aden City

Year	1996–2012	2013
Private Number	56,084	6,397
Taxi Number	12,156	2,153
Public Transport Number	14,907	955
Total	83,147	9,505

Source: CSO, Statistical Yearbook 2013.

Figure 50: Total Number of Transport Vehicles in Aden City, 2019.



Source: KI Survey, June/July 2019.

According to local sources, usage of motorbikes is common among the population in Aden. However, according to the 2013 statistics, only 76 motorbikes number plates were issued from 2003 to 2012, while in 2013 zero plates were issued.

Unconfirmed sources suggest that while the motorization rate in Yemen is relatively low, traffic congestion can be observed in several parts of the city, including the main roads between the districts of Ash Shaikh Outhman and Al Mansura and between Al Mansura and Khur Maksar. This has been attributed to the poorly designed road network and the rapidly increased population.

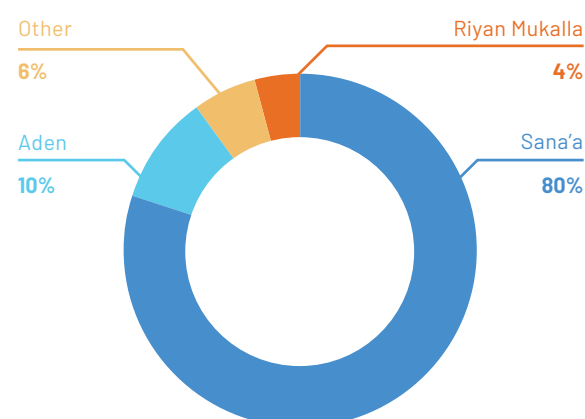
Transport is further affected by fuel price hikes. According to the Yemen Market Watch Report (March 2019), the price of Diesel amounted to 370 YER/L, representing an increase of 147% compared to the pre-crisis price of 150 YR/L.²³⁹ Petrol prices observed amount to 300 YER/L, which translates to a 90% increase compared to the pre-crisis price (158 YR/L).

Regional connectivity is served by several bus companies operating trips to other governorates. Local sources suggest that minibuses are commonly used for shorter distance trips, while high capacity buses are used for long-distance travel. There are several international surface road connections to Oman and Saudi Arabia. Sector experts identify insufficient funding, the need to repair damaged road infrastructure, and development of consistent and coherent planning process as main problems for restoring interregional connectivity.

Airport

According to the 2010 World Bank Air Transport Sector Strategy Note, AIA (IATA: ADE, ICAO: OYAA) is the second most important airport in Yemen.

Figure 51: Estimated proportion of Air passengers in Yemen per Airport, 2007.



Source: World Bank, Republic of Yemen Air Transport. Sector Strategy Note, September 2010

Table 17: AIA Passengers Volume per Year

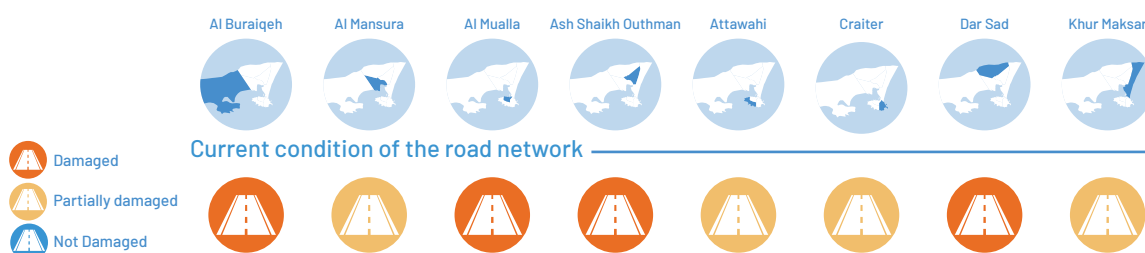
Year	Number of Passengers
2008	250,000
2011	320,000
2012	369,000
2013	401,000

Source: CSO, Statistical Yearbook 2013. See also: World Bank.

Gulf countries were the most common flight destinations, but the airport also served flights to and from e.g. Cairo and London.²⁴⁰ While the airport was characterized by low traffic (10% of the total annual air traffic in 2007), the government was actively promoting various investment projects aiming to increase air traffic in the coming years. The airport operated 24/7 and had an adequate supporting infrastructure.

²³⁹ WFP, Yemen Market Watch Report, March 2019 - Issue No. 34, (2019), https://docs.wfp.org/api/documents/WFP-0000104941/download/?_ga=2.86743966.723352884.1560328766-1869101757.1560328766

²⁴⁰ World Bank, Yemen, Republic of - Air transport sector strategy note (English), (Washington, DC: World Bank, 2010), <http://documents.worldbank.org/curated/en/129741468340297352/Yemen-Republic-of-Air-transport-sector-strategy-note>

Figure 52: Current Condition of Road Network in Aden City (per district), 2019.

Source: KI Survey, June/July 2019.

Since the escalation of the conflict, operations at AIA have been intermittently suspended and resumed. In March 2015, all international airlines suspended flights to Yemen.²⁴¹ Currently, several airlines, including the national airline company Yemenia, domestic carrier Felix Airways Limited, and Queen Bilqis, and Air Djibouti operate commercial flights to and from the airport. According to Yemenia's website²⁴², regular roundtrip flights are scheduled from Aden to Cairo, Amman and Jeddah, the Felix Airways webpage²⁴³ suggests that the airline currently serves two international destinations, Khartoum and Djibouti, as well as two domestic, Al-Ghaydah and Seiyun, while Queen Bilqis has regular flights to Seiyun, Amman, Khartoum and Jeddah.

Port

The Port of Aden is located between the mountain Jebel Shamsan and the mountain Jebel Muzalqam in Little Aden and has a capacity of 5.5 million tons per year. It consists of ACT, Al Mualla Multipurpose and Container Terminal, Oil Harbor at Little Aden, Aden Gulf Terminal and Passenger Terminal, as well as Bunkering, and Anchorage Areas at the outer harbor. The port is also used for the delivery of humanitarian assistance.

Shipments arriving to ACT are subject to local transportation costs, which are set by the Union Committee for Drivers of Heavy Transport Trucks.²⁴⁴ The Union exercises a full monopoly over transportation of unloaded goods from the ACT to destination. This monopoly has led to an increase in the costs of transportation to the point that it often exceeds the cost of ocean freight service.

For instance, as of 2017, the cost of transporting goods from ACT to Attawahi district was 90,000 YER (\$360), while the price for transportation to other governorates could reach up to 700,000 YER (\$2,800).²⁴⁵

The official port of Aden reports that all terminals have been operating since summer 2015 and that currently, 10,000 MT/

day of general cargoes are handled at the Al Mualla terminal.²⁴⁶ Congestion and delays at the port were reported, but the overall situation has been improving since late 2018.²⁴⁷

Damage

The road from Aden to Taizz (via Karesh, Al Rahidah) was closed due to the damaged bridges and connections destroyed as a result of an airstrike.²⁴⁸ In 2015, temporary roadbeds were installed, but the road remained inaccessible to large trucks. The ongoing Taizz campaign and danger from minefields caused the temporary closure of roads in 2016.²⁴⁹ Sector experts indicate that roads remain damaged in Al Buraiqeh, Al Mualla, Ash Shaikh Outhman and Dar Sad, while in the remaining four districts they are partially damaged.

AIA also sustained significant damage that affected the terminal building, control tower, the (one) runway, and other support facilities.²⁵⁰

At the port, the refinery facilities in Al Buraiqeh and ACT in Al Mualla, sustained severe damage during the conflict.²⁵¹ According to the webpage of the Port of Aden, the tourist pier sustained similar damage and will reportedly be rehabilitated in the short- to medium-term future by the Hayel Saeed Anam Group.²⁵²

Currently, sector experts report that roads in all districts are either partially or fully damaged as shown below.

²⁴¹ Engelke Wilfried, Yemen Transport Sector, Input to the Yemen Policy Note no. 4. on Inclusive Services Delivery, (Washington, D.C. : World Bank Group, 2017), <http://documents.worldbank.org/curated/en/636961508411397037/Yemen-transport-sector>

²⁴² Yemenia Yemen Airways website, <https://www.yemenia.com>

²⁴³ Felix Airways website, <http://www.felixairways.com/index.php>

²⁴⁴ World Bank, Private sector readiness to contribute to reconstruction and recovery in Yemen (English), Yemen policy note, (Washington, D.C. : World Bank Group, 2017), <http://documents.worldbank.org/curated/en/371961508411374137/Private-sector-readiness-to-contribute-to-reconstruction-and-recovery-in-Yemen>

²⁴⁵ Ibid.

²⁴⁶ Port of Aden Website, <http://www.portofaden.net/NewsDetails.aspx?a=216>.

²⁴⁷ UNOCHA, Under-Secretary-General for Humanitarian Affairs and Emergency Relief Coordinator Mark Lowcock, Briefing to the Security Council on the humanitarian situation in Yemen, December 14, 2018, <https://reliefweb.int/report/yemen/under-secretary-general-humanitarian-affairs-and-emergency-relief-coordinator-mark-12>

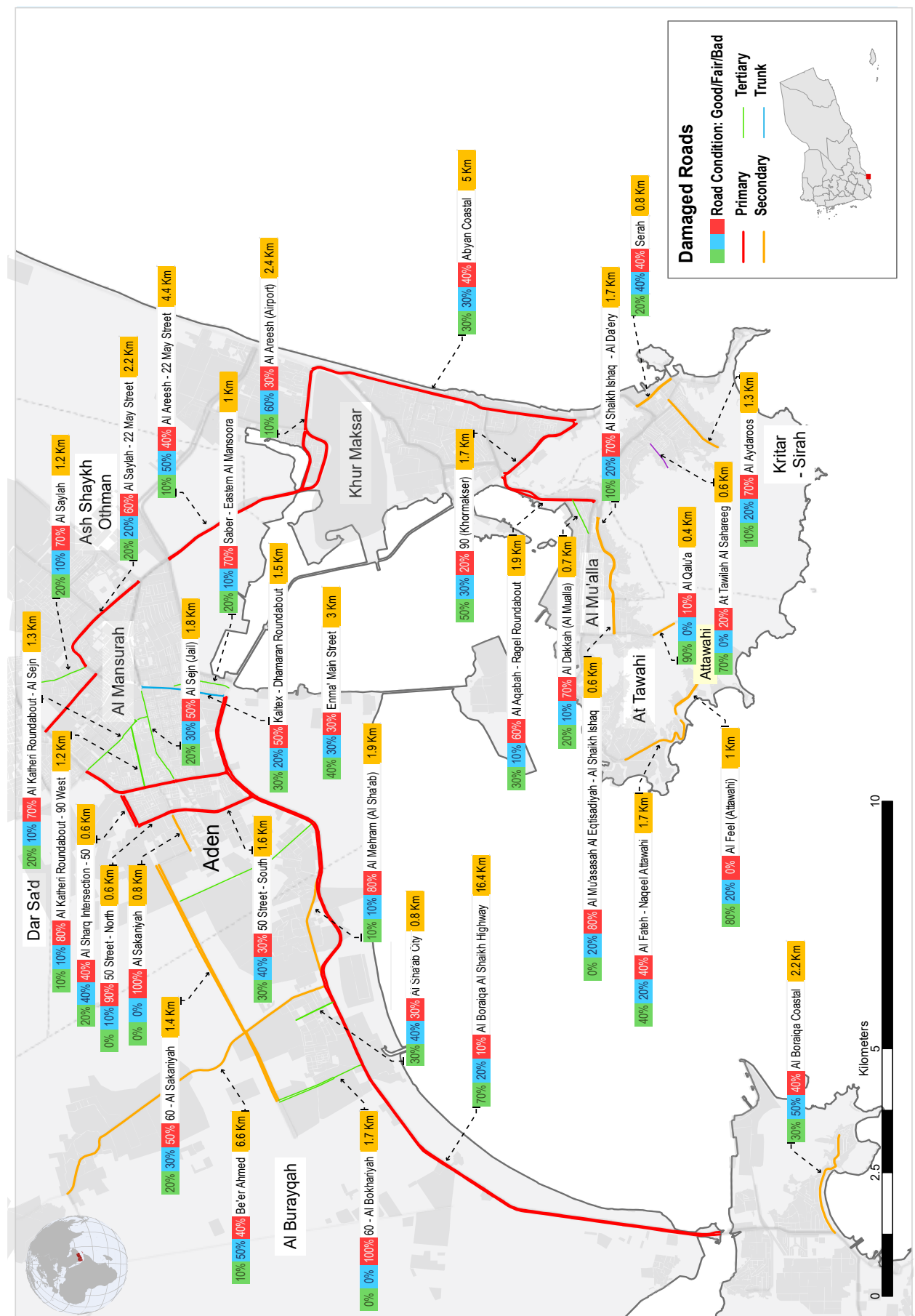
²⁴⁸ Engelke Wilfried, Yemen Transport Sector, Input to the Yemen Policy Note no. 4. on Inclusive Services Delivery, (Washington, D.C. : World Bank Group, 2017). See also, World Bank, Private sector readiness to contribute to reconstruction and recovery in Yemen (English), Yemen policy note, (Washington, D.C. : World Bank Group, 2017).

²⁴⁹ World Bank, Private sector readiness to contribute to reconstruction and recovery in Yemen (English), Yemen policy note, (Washington, D.C. : World Bank Group, 2017).

²⁵⁰ Engelke Wilfried, Yemen Transport Sector. Input to the Yemen Policy Note no. 4. on Inclusive Services Delivery, (Washington, D.C. : World Bank Group, 2017).

²⁵¹ Ibid.

²⁵² Port of Aden Website, <http://www.portofaden.net/NewsDetails.aspx?a=216>.

Figure 53: Aden City Damaged Roads


3. Population needs

Across the city, 20 to 40 minutes are required to reach an education facility, with an average of less than 20 minutes in most of the districts.²⁵³ Less than 30 minutes are required to reach a health facility with an average of less than 30 minutes in four districts (Al Mualla, Ash Shaikh Outhman, Attawahi and Craiter), and 30 to 60 minutes in the remaining ones.

²⁵³ KI Survey, June/July 2019.

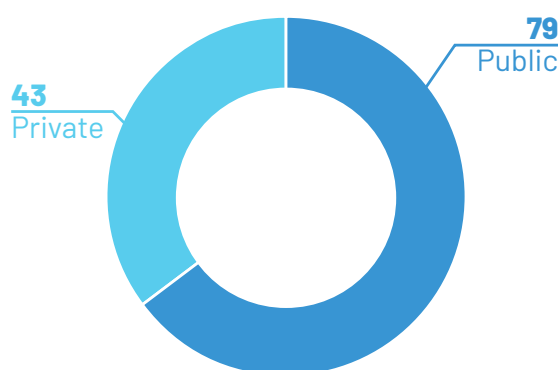
Highlights

- Limited Internet and mobile network services are available in all districts. Furthermore, following the introduction of AdenNet, Internet service provision improved in Aden. However, network coverage is reported poor in most districts, with the exception of Al Mualla and Craiter.
- Customer service is poor in Al Mansura, Al Mualla, Ash Shaikh Outhman, Attawahi and Craiter, and includes long waiting times, slow connection and poor coverage.
- While service coverage and customer service are poor throughout most districts in the city, tariffs are specifically high in Al Buraieqh, Ash Shaikh Outhman, Attawahi and Craiter.

1. Overview

Across Yemen, the number of subscribers to mobile and internet networks has been steadily increasing in the last 15 years. Prior to 2015, almost 90% of the population in Yemen were connected to mobile networks. The number of these subscriptions increased from 3 million in 2006 to a peak of 18.36 million in December 2015.²⁵⁴ Thereafter, there was a sharp decline by 4% at the end of the year and the numbers remained relatively steady at 16 million subscriptions in 2016.²⁵⁵

Figure 54: Number of Communication Facilities in Aden City, 2019.



Source: KI Survey, June/July 2019.

The telecom sector underwent considerable reform prior to the escalation of the conflict. This included new legislation, a restructuring of the Ministry of Telecommunications and Information Technology (MTIT), and the establishment of a regulatory body monitoring the network.²⁵⁶

2. Infrastructure and Operational Capacity

Prior to the conflict, there were 13,000 km of fiber optic across Yemen that connected to the international submarine fiber in Aden, Al

Al Mukalla and Al Hudaydah.²⁵⁷ Although the level of structural damage is unknown, most of the fiber network in Yemen runs above ground. This increases its vulnerability and likelihood to interruptions. The telecommunications infrastructure is mostly located in Sana'a. According to media reports, the government was exploring ways to launch new telecommunication projects in Aden to enhance its autonomy from Sana'a.²⁵⁸

The domestic network is comprised of microwave radio relay, cables and tropospheric scatter.²⁵⁹ As of 2017, in Aden, services were offered by 224 internet cafes and 1,957 call centers.²⁶⁰

Communications facilities in Aden are run both publicly and privately. Currently, five Information and Communications Technology (ICT) Towers and two ICT facilities located in Craiter are not functioning.

²⁵⁴ Halewood, Naomi J. and Decoster, Xavier Stephane, Yemen : information and communication technology (ICT)(English). Yemen policy note, (Washington, D.C. : World Bank Group, 2017), <http://documents.worldbank.org/curated/en/337651508409897554/Yemen-information-and-communication-technology-ICT>

²⁵⁵ Ibid.

²⁵⁶ Khalil Al-Subari, Multi-Year Expert Meeting on Services, Development and Trade: The Regulatory and Institutional Dimension, Telecommunications, Financial and Transport Services in Yemen, (UNCTAD, 2010), https://unctad.org/sec-tions/wcmu/docs/clmem3_2nd_YEMEN_en.pdf




²⁵⁷ Halewood, Naomi J. and Decoster, Xavier Stephane, Yemen : information and communication technology (ICT)(English). Yemen policy note, (Washington, D.C. : World Bank Group, 2017).


²⁵⁸ Saba Net, "Government is preparing giant telecom project in Aden, spokesman says", November 10, 2017, <https://www.sabanew.net/viewstory/24800>

²⁵⁹ Logistics Cluster Yemen, "Yemen Telecommunications", <https://dlca.logcluster.org/display/public/DLCA/3.5+Yemen+Telecommunications>

²⁶⁰ CSO, Statistical Yearbook 2017.

Table 18: Total Number of Communication Facilities (Public and Private) and their Functionality in Aden City, 2019.

	Fully Functioning 	Partially functioning 	Not functioning 
ICT Facility	4	-	2
ICT Tower	56	-	5
Other communication unit	55	-	-
TOTAL	115	-	7

 No facilities belonging to this category were identified by KI

Source KI Survey, June/July 2019

Service providers

There are four mobile phone operators in Aden: Yemen Mobile, MTN Yemen, Sabafon, Y-Telecom. Yemen Mobile, a state-owned operator, was the only one permitted to provide 3G services.²⁶¹

The main internet provider is YemenNet, it is a government company. AdenNet recently established wireless internet services to reduce reliance on YemenNet. Anecdotal evidence suggests that the company struggles to meet the demand and consequently stops providing modems.

According to World Bank data,²⁶² mobile phone subscription has decreased its footprint in Yemen at a peak of 65.9 per 100 people in 2013 to 54.4 per 100 in 2017. The fixed telephone subscriptions rate is low, with 4.2 subscriptions per 100 people as of 2017. Conversely, internet subscription has increased from 1.2% of the population in 2006 to 26.7% in 2017. In Aden, as of 2017, the Public Corporation of Wired and Wireless Communications reported 110,503 operating lines with an equipped capacity of 128,163.²⁶³

3. Population Needs

Currently, sector experts suggest that both mobile and internet networks are available to the population. However, poor coverage was identified as the main problem, followed by poor customer service, and high tariffs. Furthermore, 46% of the CFPs identified communication services and supplies to be amongst the critical goods needed in Aden. The need is the greatest in Al Buraiqeh, where all CFPs selected this option, followed by Al Mansura and Al Mualla, where over two-thirds of respondents highlighted this issue. In other districts, between 29% and 50% of the respondents selected this option, apart from the two districts (Craiter and Khur Maskar), where this option was not selected at all.

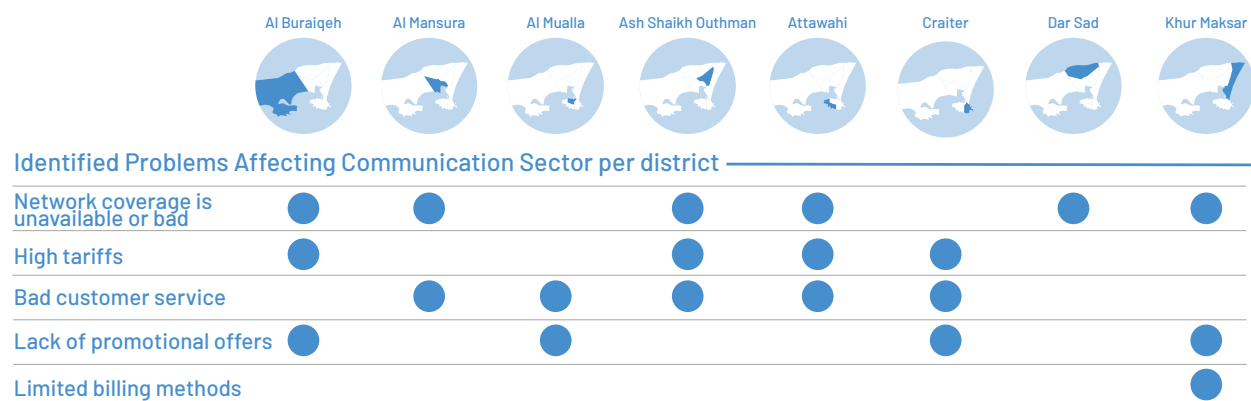
²⁶¹ Halewood, Naomi J. and Decoster, Xavier Stephane, Yemen : information and communication technology (ICT)(English). Yemen policy note, (Washington, D.C. : World Bank Group, 2017).

²⁶² World Bank, <https://data.worldbank.org/indicator/IT.MLT.MAIN.P2?locations=YE>

²⁶³ CSO, Statistical Yearbook 2017.

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Figure 55: Identified Problems Affecting Communication Sector in Aden City (per district), 2019.



Source: KI Survey, June/July 2019

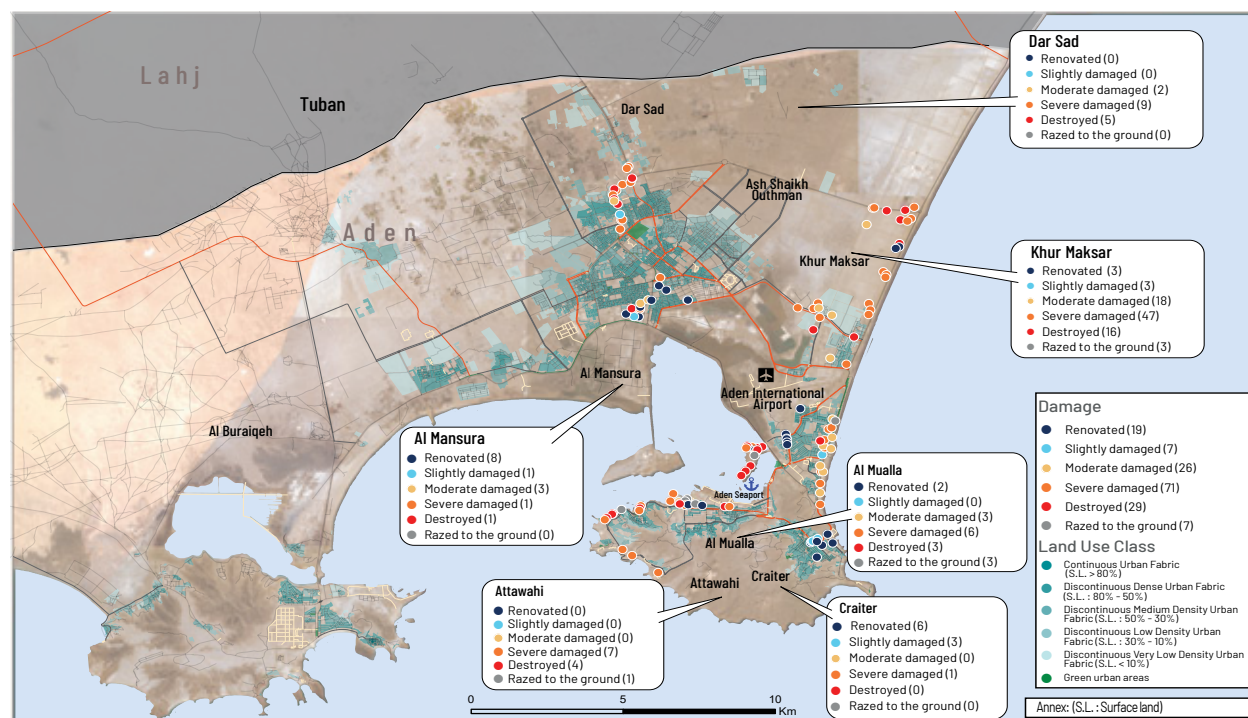
ANNEXES

iMMAP's team identified 11 areas within the city of Aden as the most severely affected buildings, as shown in satellite imagery summarized in the following explanatory map:

During this exercise, some of the damaged buildings were photographed in order to assess the damage, whether in private, public or government buildings of a services provision nature. The rapid field asset verification did not aim to assess most or all of the damaged buildings due to the difficulty of implementing such an assessment given the fluid situation in Aden. Therefore, random

sampling of the damaged buildings within the predetermined areas has been adopted based on the relative distribution of the number and level of damage shown in satellite imagery. The minimum number of buildings to be evaluated was estimated to be at least 90 varying buildings in terms of level of damage, ownership and nature of use while excluding all buildings of a security or military nature or those that have a specific national security sensitivity.

Figure 56: Assessed Locations to Verify Damages



Map Name: Aden City Assets Verification (As of 2019), Date Created: 23 Oct 2019, Datum/Projection: WGS_84, Data sources: OCHA, JRC, OSM. 2018

Disclaimer: The boundaries, names and designations used in this map do not imply official endorsement or acceptance by iMMAP. Numbers reflected on the map show verified locations on the ground, compared to JRC damage data.

Asset Verification results

The verification of the buildings was done based on verifying satellite imageries from JRC (December 2018) and DigitalGlobe (July 2019) for 159 buildings, in addition to real pictures (August & September 2019). After that iMMAP GIS unit has triangulated data from different sources, compiled GPS coordinates and analyzed it as below:

- 47 Buildings matched JRC GPS coordinates and classification: one of them had matching coordinates and is currently being rehabilitated;
- 41 Buildings did not match JRC data classifications but match the JPS coordinates, including 5 of them which were rehabilitated;
- 71 buildings were verified despite not having JRC points as per the methodology, these were randomly selected by enumerators due to visible damages. 11 Buildings were renovated.

It is noticeable that Khur Maksar district received the largest proportion of the relative analysis interest due to the fact that all areas of this district served as a battlefield unlike - for example - Al Mansura district where clashes were concentrated in the south-western areas while the rest of the district remained relatively safe enough to receive IDPs from other districts which had experienced widespread armed clashes such as Khur Maksar, Al Mualla, Attawahi and Craiter. Ash Shaikh Outhman district also received a number of IDPs from neighboring districts given that it was relatively safe and was not subjected to significant damage as shown by satellite imagery and therefore was not included in the field asset verification. The two locations in Al Buraiqeh district were excluded eventually due to their military and security sensitivity.

The field asset verification process indicated that rehabilitation of buildings was happening slowly in the city and was done based on buildings relative importance. Most of the hospitals and some partially damaged service facilities have been restored, while destroyed and razed to the ground buildings await funding for their reconstruction. It is also noteworthy that the pace of reconstruction of private residential buildings restoration located in the city's center was faster than in the city's outskirts. Despite the pace of restoration works done generally being slow, these works show that there is a need to continuously update satellite images when utilized for such studies.

The asset verification results showed that the damages on the ground are much worse than what is shown in satellite images and field images. However, satellite imagery can be relied on in rapid asset verification when assessing damage on a large scale as a substitute for field assessments that may be difficult to conduct in all areas during periods of armed conflict and political tensions.

Figure 57: Photo's from Asset verification



Summary overall situation in each district

1. Al Buraiqeh

Food Security

In Al Buraiqeh, 80-100% of CFPs reported that IDPs face challenges in satisfying needs in terms of food supplies (staple food, fresh vegetables and fruit, meat, etc.). In terms of host and non-host community, 40-60% and 0-20% of CFPs stated that both groups respectively face challenges in satisfying food supplies. CFPs stated that refugees and migrants respectively do not face challenges.²⁶⁴

Health

Between 60-80% of CFPs report that access to healthcare services (facilities, health staff, etc.) is challenging for IDPs, 80-100% of CFPs stated this was challenging for the host community, and 40-60% of CFPs stated this was challenging for the non-host community. More specifically, according to KI data, it takes between 30 – 60 minutes for the population in the district to walk from their residence to a health facility. Specific health services not available or accessible to the population in the district are an outpatient department and services to perform major surgery. Additional issues reported through KI data are that specialized medical staff is not available, facilities do not cover the size of the population, and that there is an irregular supply of medicines which are often not affordable due to high prices. In terms of medicines and other healthcare products, 80-100% of CFPs reported that IDPs face challenges in satisfying their needs whereas 80-100% of CFPs stated the host- and 20-40% of CFPs stated the non-host community face challenges.

WASH

Between 80-100% of CFPs stated that IDPs face challenges in obtaining water for drinking purposes; 60-80% of CFPs stated the same for the host community and 20-40% of CFPs for the non-host community. In terms of hygiene commodities (clothing, soap, pads, etc.), 80-100% of CFPs state that IDPs are facing challenges in satisfying their needs whereas 20-40% of IDPs report that the host community faces challenges. When it relates to hygiene/sanitation facilities (toilets, showers, baths, etc.), 80-100% of CFPs state that IDPs are facing challenges in satisfying their needs whereas 20-40% of CFPs state that the host community faces challenges. Between 20-40% of CFPs report that IDPs are facing challenging in satisfying their needs in terms of solid waste disposal services (garbage collection, cleanliness of public streets, etc.) whereas 80-100% of CFPs stated the same for the host- and 20-40% for the non-host community. More specifically, KI data states that some areas are clean, but that some areas show piles of garbage.

Shelter

When it comes to shelter/housing (rent, purchase, construction, etc.), 80-100% of CFPs state that IDPs face challenges; 20-40% of CFPs state the same for the host community. The same numbers are applicable to both groups when it relates to access to household items (kitchen utensils, mosquito nets, blankets, etc.). Between 40-60% of CFPs state that IDPs face challenges in satisfying their needs related to shelter commodities (furniture, building materials, etc.); 80-100% of CFPs state the same for the host- and 20-40% for the non-host community. Between 80-100% of CFPs state that IDPs face challenges in satisfying their needs as to energy commodities for heating, cooking, and lighting; between 60-80% of CFPs state the same for the host community, and 0-20% of CFPs for the non-host community.

Education

When it comes to education services (transport, fees, teachers, etc.), 40-60% of CFPs stated IDPs face challenges; 80-100% of CFPs reported the same for the host community and 20-40% of CFPs reported issues for the non-host community. KI data furthermore reported that for pre-school children (3-5 years) there is enough learning space; however, classrooms are a little/ sometimes crowded. Additionally, KI data reported that there is not enough learning space for primary and secondary male and female school children; classrooms are largely/always crowded, and some children are not going to school because of lack of space. Between 80-100% of CFPs reported IDPs face challenges in obtaining education commodities (uniforms, shoes, stationaries, books, etc.); 60-80% of IDPs stated the same for the host- and 20-40% for the non-host community.

Communication

In terms of communication services (providers, towers, networks, etc.), 20-40% of CFPs reported that IDPs face challenges in satisfying their needs; 80-100% of CFPs reported the same for the host- and 0-20% for the non-host community. Following KI data, the most serious problems that the population faced associated with access to communication in the district are that network coverage is unavailable or bad as well as high tariffs. In terms of communication commodities (phone, credit, etc.), 40-60% of CFPs reported that IDPs faced challenges in satisfying their needs; 80-100% of CFPs reported the same for the host community and 0-20% for the non-host community.

Governance

Access to legal and law enforcement services (local police, courts, municipal police) is challenging to obtain for IDPs according to 20-40% of CFPs; 80-100% of CFPs reported the same for the host community and 20-40% of CFPs reported the same for the non-host community. More specifically, KI data reports that local authority services are available.

²⁶⁴ CFPs reported 0% for both refugees and migrants on all needs assessments; these two population groups will therefore not be taken into consideration for Al Buraiqeh district. Additionally, it should be noted returnees are not taken into consideration for similar reasons.

Transport

Access to transport services (all except to education, work, health centers, markets, etc.) comes with challenges for IDPs and the host community according to 80-100% of CFPs; 20-40% of CFPs reported these issues for the non-host community. KI data further specifies that the most serious problems requiring immediate intervention include lack of insufficient funding, physical damage to the infrastructure, and shortage of qualified human resources.

Sub-conclusions:

- CFPs report that IDPs are the population group most in need, followed by host and then non-host communities;
- Significant numbers of CFPs state that IDPs face challenges in satisfying their needs in the following clusters 1) Food Security; 2) Shelter; 3) WASH; and 4) Health;
- It should be noted that Al Buraieqeh is one of two districts for which KIs report that some primary and secondary male and female school children do not attend school due to there not being enough learning space;

2. Al Mansura

Food Security

In Al Mansura, 80-100% of CFPs state that IDPs face challenges in satisfying needs in terms of food supplies whereas 40-60% of CFPs state that returnees face difficulties. In terms of host and non-host community, 80-100% of CFPs report challenges for both groups. Between 0-20% of CFPs state that refugees deal with challenges in satisfying food supplies.

Health

Access to healthcare services is reported challenging for IDPs, the host- and non-host community by 80-100% of CFPs, 60-80% of CFPs report challenges for returnees and 0-20% for refugees. More specifically, according to KI data, it takes between 30-60 minutes for the population in the district to walk from their residence to a health facility. Specific health services not available or accessible to the population in the district are emergency services and services to perform major surgery. Additional issues reported through KI data are that specialized medical staff is not available, facilities do not cover the size of the population, and that there is an irregular supply of medicines (interestingly, price of medicines was not reported an issue). In terms of medicines and other healthcare products, 80-100% of CFPs state that IDPs, the host- and non-host community face challenges whereas 40-60% of CFPs report the same for returnees and 0-20% of CFPs report these issues for refugees.

WASH

Between 80-100% of CFPs report that IDPs face challenges in obtaining water for drinking purposes whereas 60-80% state the same for returnees; 80-100% of CFPs state that both the host- and non-host community face issues; 0-20% of CFPs state the same for refugees. In terms of hygiene commodities, 80-100% of CFPs report that IDPs and the host community are facing challenges in satisfying their needs whereas 60-80% of CFPs report the same for the non-host community, 20-40% of CFPs report issues for returnees and 0-20% report issues for refugees. When it relates to hygiene/sanitation facilities, 80-100% of CFPs state that IDPs, the host- and non-host community are facing challenges in satisfying their needs; 40-60% of CFPs state the same for returnees and between 0-20% for refugees. 80-100% of CFPs report that IDPs, the host- and non-host community are facing challenging in satisfying their needs in terms of solid waste disposal services; 40-60% of CFPs state the same for returnees and 0-20% for refugees. More specifically, KI data states that some areas are clean, but that some areas show piles of garbage.

Shelter

When it comes to shelter/housing, 80-100% of CFPs report that IDPs, the host- and non-host community face challenges; 60-80% of CFPs state the same for returnees and 0-20% for refugees. When it relates to access to household items, 80-100% of CFPs report that IDPs and the host community face issues; 60-80% of CFPs state the same for the non-host community, 40-60% for returnees, and 0-20% for refugees. Between 80-100% of CFPs report that IDPs face challenges in satisfying their needs related to shelter commodities; 60-80% of CFPs report the same for the host- and non-host community, 40-60% for returnees, and 0-20% for refugees. Between 80-100% of CFPs state that IDPs as well as the host- and non-host community face challenges in satisfying their needs as to energy commodities; additionally, between 40-60% of CFPs reports the same for returnees.

Education

When it comes to education services, 80-100% of CFPs state that IDPs, the host- and non-host community face challenges; 40-60% of CFPs reports this issue for returnees and 0-20% for refugees. KI data furthermore reported that for pre-school children (3-5 years) there is enough learning space and classrooms are not crowded. Additionally, KI data reported that there is not enough learning space for primary and secondary male and female school children; classrooms are quite/often crowded and/or some classes are held outside. Between 80-100% of CFPs state that IDPs as well as the host- and non-host community face challenges in obtaining education commodities; 40-60% of CFPs state the same for returnees and 0-20% for refugees.

Communication

In terms of communication services, 80-100% of CFPs reported that IDPs, the host- and non-host community faced challenges in satisfying their needs; 40-60% of CFPs reported the same for returnees and 0-20% for refugees. Following KI data, the most serious problem that the population faced associated with access to communication in the district is that network coverage is unavailable or bad. In terms of communication commodities, 80-100% of CFPs reported IDPs, the host- and non-host community faced challenges in satisfying their needs; 40-60% of CFPs reported the same for returnees.

Governance

Access to legal and law enforcement services is challenging to obtain for IDPs, the host- and non-host community according to 80-100% of CFPs; 60-80% of CFPs report this to be challenging for returnees and 0-20% for refugees. More specifically, KI data reports that local authority services are available.

Transport

Access to transport services comes with challenges for IDPs, the host- and non-host community according to 80-100% of CFPs; 40-60% of CFPs report this issue for returnees, and 0-20% for refugees. KI data further specifies that the most serious problems requiring immediate intervention include lack or insufficient funding, weak or underdeveloped planning processes, and unreliable database of the transportation sector.

Sub-conclusions:

- CFPs report that IDPs face most challenges in satisfying needs, closely followed by host communities, non-host communities, and then returnees;
- Between 80-100% of CFPs report no differentiation in clusters; all clusters are scored as needed by IDPs;

3. Al Mualla

Food Security

In Al Mualla, 80-100% of CFPs report IDPs face challenges in satisfying needs in terms of food supplies; 20-40% of CFPs report the same for the host community as well as returnees. CFPs do not report challenges for the non-host community, refugees and migrants.²⁶⁵

Health

Between 80-100% of CFPs report that access to healthcare services is challenging for IDPs; 40-60% of CFPs report the same for returnees as well as the host community, and 0-20% for the non-host community. More specifically, according to KI data, it takes between 0 – 30 minutes for the population in the district to walk from their residence to a health facility. Specific health services not available or accessible to the population in the district are services to perform major surgery. Additional issues reported through KI data are that facilities do not cover the size of the population, and that there is an irregular supply of medicines (interestingly, price of medicines was not reported an issue). In terms of medicines and other healthcare products, 80-100% of CFPs report challenges for IDPs in satisfying their needs whereas 20-40% of CFPs report the same for both returnees and the host community.

WASH

Between 80-100% of CFPs report challenges for IDPs in obtaining water for drinking purposes; 20-40% of CFPs state the host community faces challenges and 0-20% of CFPs report returnees face challenges. In terms of hygiene commodities, 80-100% of CFPs report challenges for IDPs, 20-40% of CFPs report challenges for the host community and 0-20% for returnees. When it comes to hygiene/sanitation facilities, 80-100% of CFPs report challenges for IDPs, 20-40% for the host community and 0-20% for returnees. 80-100% of CFPs report challenges for IDPs in satisfying their needs in terms of solid waste disposal services whereas 20-40% of CFPs report the same for the host community and 0-20% for returnees. More specifically, KI data states most areas in the district show many piles of garbage everywhere.

Shelter

When it comes to shelter/housing, 80-100% of CFPs report that IDPs face challenges in satisfying their needs; 20-40% of CFPs report the same for the host community and 0-20% for returnees. The same numbers are applicable to all population groups when it relates to access to household items. Between 80-100% of CFPs report that IDPs face challenges in satisfying their needs related to shelter commodities; 0-20% of CFPs report the same for the host community as well as returnees. Between 80-100% of CFPs state that IDPs face challenges in satisfying their needs as to energy commodities for heating, cooking, and lighting; 20-40% of CFPs state the same for the host community as well as returnees; 0-20% report that migrants face challenges.

²⁶⁵ CFPs reported refugees did not face challenges in satisfying their needs; this population group will therefore not be taken into consideration for Al Mualla district. Additionally, it should be noted CFPs stated that Migrants did not face challenges, except for satisfying their needs in terms of energy commodities (for cooking, heating, lighting); 0-20% of CFPs reported issues.

Education

When it comes to education services, 80-100% of CFPs report IDPs face challenges in satisfying their needs; 0-20% of CFPs report the same for returnees as well as the host community. KI data furthermore reported that for pre-school children (3-5 years) there is enough learning space; however, classrooms are a little/sometimes crowded. Additionally, KI data reported that there is not enough learning space for primary and secondary male school children; classrooms are quite/often crowded and/or some classes are held outside. KI data stated that there is enough learning space for primary and secondary female school children; however, classrooms are a little/sometimes crowded. Between 80-100% of CFPs report that IDPs face obstacles in satisfying needs as to obtaining education commodities; 0-20% of CFPs state the same for the host community as well as returnees.

Communication

In terms of communication services, 80-100% of CFPs report that IDPs face challenges whereas 20-40% of CFPs report the same for returnees and 0-20% for the host community. Following KI data, the most serious problems that the population faced associated with access to communication in the district are related to customer service and lack of promotional offers. It should be noted that, according to KI data, Al Mualla is one of two districts which does not report having issues with network coverage being unavailable or bad. In terms of communication commodities, 80-100% of CFPs report that IDPs are facing challenges in satisfying their needs; 20-40% report the same for returnees, and 0-20% for the host community.

Governance

Access to legal and law enforcement services is challenging to obtain for IDPs according to 80-100% of CFPs; 20-40% of CFPs report the same for returnees, and 0-20% for the host community. More specifically, KI data reports that municipal police services are not operational; additionally, the Death and Burial Office is not operational.

Transport

Access to transport services comes with challenges for IDPs according to 80-100% of CFPs; 20-40% of CFPs report the same for returnees, and 0-20% for the host community. KI data further specifies that the most serious problems requiring immediate intervention include lack or insufficient funding, physical damage to the infrastructure, and high operating costs.

Sub-conclusions

- CFPs report that IDPs face most challenges in satisfying needs, followed by host communities, and then returnees;
- Between 80-100% of CFPs report no differentiation in clusters; all clusters are scored as needed by IDPs;
- In terms of needs across the board, CFPs report access to healthcare services is challenging for almost all represented population groups, including IDPs, returnees, host- and non-host community;
- It should be noted that, according to KI data, Al Mualla is one of two districts which does not report having issues with network coverage being unavailable or bad;
- It should be noted that, according to KI data, Al Mualla is one of three districts which reports having issues with the provision and operationality of local authority services;

4. Ash Shaikh Outhman

Food Security

In Ash Shaikh Outhman, 80-100% of CFPs report that IDPs as well as the host community face challenges in satisfying needs in terms of food supplies; 40-60% of CFPs report the same for the non-host community and 0-20% of CFPs report the same for returnees. CFPs do not report issues for refugees and migrants.²⁶⁶

Health

Access to healthcare services is reported challenging for IDPs and the host community according to 80-100% of CFPs; 40-60% of CFPs report the same for the non-host community and 0-20% for returnees. More specifically, according to KI data, it takes between 0 – 30 minutes for the population in the district to walk from their residence to a health facility. Specific health services not available or accessible to the population in the district are an outpatient department, services related to reproductive health, emergency, lab services, immunization services, minor surgery services, X-ray services, and maternal and child health services, making it the district with the lowest number of health services available or accessible to the population. Additional issues reported through KI data are that specialized medical staff and medical support staff are not available, and facilities do not cover the size of the population. In terms of medicines and other healthcare products, 80-100% of CFPs report that IDPs as well as the host-community face challenges; 40-60% of CFPs report the same for the non-host community, and 0-20% for returnees.

²⁶⁶ CFPs reported that refugees and migrants did not face challenges in satisfying their needs; these population groups will therefore not be taken into consideration for Ash Shaikh Outhman district.

WASH

Between 80-100% of CFPs state that IDPs as well as the host community face challenges in obtaining water for drinking purposes; 40-60% of CFPs report that the non-host community is confronted with similar issues and 20-40% report the same for returnees. In terms of hygiene commodities, 80-100% of CFPs state that IDPs are facing challenges in satisfying their needs; 40-60% of CFPs report the same for the host community and 0-20% for the non-host community and returnees respectively. When it comes to hygiene/sanitation facilities, 80-100% of CFPs report challenges for IDPs in satisfying their needs; 40-60% report the same for the host-community and 0-20% for the non-host community and returnees. According to 80-100% of CFPs, IDPs as well as the host community are facing challenging in satisfying their needs in terms of solid waste disposal services whereas - and 40-60% CFPs report this issue for the non-host community and returnees. More specifically, KI data states that some areas are clean, but that some areas show piles of garbage.

Shelter

When it comes to shelter/housing, 80-100% of CFPs report challenges for IDPs; 40-60% for the host- and 0-20% for the non-host community. Interestingly, 0% of CFPs report challenges for returnees related to shelter/housing. Between 80-100% of CFPs state that IDPs face challenges related to satisfying their needs in terms of household items; 40-60% report this for the host community, and 0-20% for returnees and the non-host community. Between 80-100% of CFPs state that IDPs face challenges in satisfying their needs related to shelter commodities; 60-80% of CFPs report challenges for the host- and 20-40% for the non-host community; 0-20% of CFPs report this issue for returnees. Between 80-100% of CFPs state that IDPs and the host community face challenges in satisfying their needs as to energy commodities for heating, cooking, and lighting; 40-60% of CFPs report this applies to the non-host community and returnees.

Education

When it comes to education services, 80-100% of CFPs report issues for IDPs and the host community; 40-60% of CFPs report challenges for returnees and the non-host community. KI data furthermore reported that for pre-school children (3-5 years) there is not enough learning space; classrooms are largely/always crowded, and some children are not going to school because of lack of space. Additionally, KI data reported that there is not enough learning space for primary and secondary male school children; classrooms are quite/often crowded and/or some classes are held outside. KI data stated that there is not enough learning space for primary and secondary female school children; classrooms are largely/always crowded, and some children are not going to school because of lack of space. Between 80-100% of CFPs state that IDPs and the host community face obstacles in satisfying needs as to obtaining education commodities; 40-60% report issues for returnees and the non-host community.

Communication

In terms of communication services, 80-100% of CFPs report that IDPs and the host community are facing challenges; 40-60% of CFPs report issues for the non-host community and returnees. Following KI data, the most serious problems that the population faced associated with access to communication in the district are that network coverage is unavailable or bad as well as high tariffs. In terms of communication commodities, 80-100% of CFPs report that IDPs and the host community face challenges in satisfying their needs; 40-60% of CFPs report the same for the non-host community and returnees.

Governance

Access to legal and law enforcement services is challenging for IDPs and the host community according to 80-100% of CFPs; 40-60% of CFPs report challenges for returnees and the non-host community. More specifically, KI data reports that municipal police services are not operational; additionally, the municipal complaint hotline is not operational.

Transport

Access to transport services comes with challenges for IDPs and host community according to 80-100% of CFPs; 40-60% of CFPs report challenges for returnees and non-host community. KI data further specifies that the most serious problems requiring immediate intervention include lack or insufficient funding, physical damage to the infrastructure, and high operating costs.

Sub-conclusions

- CFPs report that IDPs face most challenges in satisfying needs, followed by host communities, non-host communities, and then returnees;
- Between 80-100% of CFPs report no differentiation in clusters; all clusters are scored as needed by IDPs;
- Specific health services not available or accessible to the population in the district are an outpatient department, services related to reproductive health, emergency, lab services, immunization services, minor surgery services, X-ray services, and maternal and child health services, making Ash Shaikh Outhman the district with the lowest number of health services available or accessible to the population;
- It should be noted that Ash Shaikh Outhman is the only district for which it is reported that some pre-school children are not going to school because of lack of learning space;
- It should be noted that furthermore be noted that Ash Shaikh Outhman is one of two districts for which KIs report that some primary and secondary male and female school children do not attend school due to there not being enough learning space;
- It should be noted that, according to KI data, Ash Shaikh Outhman is one of three districts which reports having issues with the provision and operability of local authority services;

5. Attawahi

Food Security

In Attawahi, 80-100% of CFPs state that IDPs face challenges in satisfying needs in terms of food supplies; 60-80% of CFPs report the same for returnees and 0-20% for the host community. According to CFPs, the non-host community, refugees and migrants respectively do not face challenges.

Health

Access to healthcare services is reported challenging for IDPs by 80-100% of CFPs; 60-80% of CFPs report the same for returnees, and 20-40% for the host community. More specifically, according to KI data, it takes between 0 – 30 minutes for the population in the district to walk from their residence to a health facility. Specific health services not available or accessible to the population in the district are services to perform major surgery. Additional issues reported through KI data are prices of consultations/treatments (regular prices, but community unable to pay), facilities do not cover the size of the population, and that there is an irregular supply of medicines which are often not available due to high prices. In terms of medicines and other healthcare products, 80-100% of CFPs state that IDPs face issues in satisfying needs whereas 60-80% report the same for returnees and 0-20% for the host community.

WASH

Between 80-100% of CFPs state that IDPs face challenges in obtaining water for drinking purposes; 40-60% of CFPs state that returnees face similar issues; 20-40% of CFPs state the same for the host community. In terms of hygiene commodities, 80-100% of CFPs state that IDPs are facing challenges in satisfying their needs whereas 60-80% report these issues for returnees and 40-60% for the host community. When it relates to hygiene/sanitation facilities, 80-100% of CFPs report that IDPs are facing challenges in satisfying their needs; 40-60% of CFPs report this issue for returnees whereas 0-20% of CFPs state the host community faces challenges. 80-100% of CFPs state that IDPs are facing challenging in satisfying needs in terms of solid waste disposal services; 60-80% of CFPs report this issue for returnees and 0-20% for the host community. More specifically, KI data states most areas in the district show many piles of garbage everywhere.

Shelter

When it comes challenges in satisfying needs related to shelter/housing, 80-100% of CFPs report issues for IDPs, 20-40% for returnees, and 0-20% for the host community. When it relates to household items, 80-100% of CFPs state that IDPs are confronted with problems; 0-20% of CFPs report this issue for returnees and the host community. Between 80-100% of CFPs state that IDPs face challenges in satisfying their needs related to shelter commodities; 20-40% of CFPs report this issue for returnees, and 0-20% for the host community. Between 80-100% of CFPs state that IDPs face issues in satisfying their needs as to energy commodities for heating, cooking, and lighting; 60-80% report this for returnees and 0-20% for the host community.

Education

When it comes to education services, 80-100% of CFPs report that IDPs face challenges; 60-80% of CFPs report the same for returnees and 0-20% for the host community. KI data furthermore reported that for pre-school children (3-5 years) there is enough learning space; however, classrooms are a little/sometimes crowded. Additionally, KI data reported that there is enough learning space for primary and secondary male and female school children; classrooms are a little/sometimes crowded. Between 80-100% of CFPs state that IDPs face challenges in obtaining education commodities; 60-80% of CFPs state the same for returnees and 0-20% for the host community.

Communication

In terms of communication services, 80-100% of CFPs report challenges for IDPs; 60-80% report the same for returnees, and 0-20% for the host community. Following KI data, the most serious problems that the population faced associated with access to communication in the district are that network coverage is unavailable or bad as well as high tariffs. In terms of communication commodities, 80-100% of CFPs report that IDPs face challenges in satisfying their needs; 60-80% of CFPs report the same for returnees, and 0-20% for the host community.

Governance

Access to legal and law enforcement services is challenging to obtain for IDPs according to 80-100% of CFPs; 60-80% of CFPs report this issue for returnees, and 0-20% for the host community. More specifically, KI data reports that local authority services are available.

Transport

Access to transport services comes with challenges for IDPs according to 80-100% of CFPs; 60-80% of CFPs report this issue for returnees, and 0-20% for the host community. KI data further specifies that the most serious problems requiring immediate intervention include lack or insufficient funding, inadequate public vehicles, and shortage of qualified human resources.

Sub-conclusions:

- CFPs report that IDPs face most challenges in satisfying needs, followed by returnees, and then host communities;
- Between 80-100% of CFPs report no differentiation in clusters; all clusters are scored as equally needed by IDPs;
- In terms of needs across the board, CFPs report access to hygiene commodities (1) followed by access to healthcare services (2) are most challenging for all represented population groups;

6. Craiter

Food Security

In Craiter, 80-100% of CFPs report that both IDPs and returnees face challenges in satisfying needs in terms of food supplies. Additionally, 20-40% of CFPs report this issue for the host- and 0-20% for the non-host community. According to CPS, refugees and migrants do not face challenges.²⁶⁷

Health

Access to healthcare services is challenging for both IDPs and returnees according to 80-100% of CFPs; 20-40% of CFPs report this issue for the host community, and 0-20% for the non-host community. More specifically, according to KI data, it takes between 0 – 30 minutes for the population in the district to walk from their residence to a health facility. Specific health services not available or accessible to the population in the district are X-ray services. Additional issues reported through KI data are that medical support staff are not available, and that there are issues with the quality of medical staff (e.g. bad service, unqualified/unfriendly staff) and prices of medicines. In terms of medicines and other healthcare products, 80-100% of CFPs report challenges for both IDPs and returnees whereas 20-40% of CFPs report issues for the host- and 0-20% for the non-host community.

WASH

Between 80-100% of CFPs report that IDPs and returnees face challenges in obtaining water for drinking purposes; 20-40% of CFPs report the same for the host- and 0-20% for the non-host community. As to hygiene commodities, 80-100% of CFPs report that IDPs and returnees are facing challenges in satisfying their needs; 20-40% of CFPs report issues for the host- and 0-20% for the non-host community. As to hygiene/sanitation facilities, 80-100% of CFPs report that IDPs are facing issues in satisfying their needs; 60-80% of CFPs report the same for returnees, 20-40% for the host- and 0-20% for the non-host community. 80-100% of CFPs report that IDPs and returnees are facing problems in satisfying their needs in terms of solid waste disposal services; 20-40% of CFPs report this issue for the host- and 0-20% for the non-host community. More specifically, KI data states most areas in the district show many piles of garbage everywhere.

Shelter

When it comes to shelter/housing, 80-100% of CFPs report that IDPs face challenges; 60-80% of CFPs report the same for returnees and 20-40% for the host community. Between 80-100% of CFPs report that both IDPs and returnees are confronted with challenges in obtaining household items; between 20-40% of CFPs reports the same for the host community and 0-20% for the non-host community. Between 80-100% of CFPs state that both IDPs and returnees face challenges in satisfying their needs related to shelter commodities; 20-40% of CFPs reports the same for the host- and 0-20% for the non-host community. Between 80-100% of CFPs state that IDPs and returnees face challenges in satisfying their needs as to energy commodities for heating, cooking, and lighting; 20-40% of CFPs report this issue for the host- and 0-20% for the non-host community.

Education

As to education services, 80-100% of CFPs report challenges for IDPs and returnees, 20-40% for the host community, and 0-20% for the non-host community. KI data furthermore reported that for pre-school children (3-5 years) there is not enough learning space; classrooms are quite/often crowded and/or some classes are held outside. Additionally, KI data reported that there is not enough learning space for primary and secondary male school children, and some children are not going to school because of lack of space. Moreover, there is not enough learning space for primary and secondary female school children; classrooms are quite/often crowded and/or some classes are held outside. 80-100% of CFPs report that IDPs and returnees face obstacles in satisfying needs in obtaining education commodities; 20-40% of CFPs report this issue for the host- and 0-20% for the non-host community.

Communication

In terms of communication services, 80-100% of CFPs report that IDPs are facing challenges in satisfying their needs; 60-80% of CFPs report the same for returnees; 20-40% for the host community, and 0-20% for the non-host community. Following KI data, the most serious problem that the population faced associated with access to communication in the district are high tariffs. It should be noted that, according to KI data, Craiter is one of two districts which does not report having issues with network coverage being unavailable or bad. In terms of communication commodities, 80-100% of CFPs report that IDPs face challenges in satisfying their needs; 60-80% of CFPs report the same for returnees; 20-40% for the host community, and 0-20% for the non-host community and refugees.

Governance

Access to legal and law enforcement services is challenging for both IDPs and returnees according to 80-100% of CFPs; 20-40% report issues for the host- and 0-20% for the non-host community. More specifically, KI data reports that local authority services are available.

Transport

Access to transport services comes with challenges for IDPs and returnees according to 80-100% of CFPs; 20-40% of CFPs report challenges for the host- and 0-20% for the non-host community. It should be noted that, according to KI data, Craiter district is not confronted with serious problems requiring immediate intervention.

²⁶⁷ Refugees scored 0% for all needs assessments and will therefore not be taken into consideration for Craiter district. Additionally, it should be noted migrants scored 0% for all needs assessments, except for communication commodities; 0-20% of CFPs stated that migrants are not able to satisfy their needs.

Sub-conclusions

- CFPs report that IDPs face most challenges in satisfying needs, followed by returnees, host communities, non-host communities, and then migrants;
- Between 80-100% of CFPs report no differentiation in clusters; all clusters are scored as equally needed by IDPs;
- Compared to other districts, CFPs report that similar percentages of returnees face mostly the same (plurality of) needs as IDPs (except for hygiene and sanitation facilities, shelter/housing, and communication commodities and devices on which returnees score lower);
- It should be noted that, according to KI data, Craiter is one of two districts which does not report having issues with network coverage being unavailable or bad.
- It should be noted that, according to KI data, Craiter district is not confronted with serious problems requiring immediate intervention with regards to Transportation.

7. Dar Sad

Food Security

In Dar Sad, 80-100% of CFPs report that IDPs and the host community face challenges in satisfying needs in terms of food supplies. Between 60-80% of CFPs reports the same for the non-host community, and 20-40% of CFPs report that refugees face the same issues in satisfying food supplies.

Health

Access to healthcare services is reported challenging for IDPs and the host community according to 80-100% of CFPs; 60-80% of CFPs report this issue for the non-host community, and 20-40% for refugees. More specifically, according to KI data, it takes between 30 – 60 minutes for the population in the district to walk from their residence to a health facility; it should be noted that the closest health facilities are reported damaged/destroyed by clashes, including airstrikes. Specific health services not available or accessible to the population in the district are services related to reproductive health, emergency services, services related to minor surgery, and X-ray services. Additional issues reported through KI data are prices of consultations/treatments (regular prices, but community unable to pay), irregular supply and prices of medicines (lack of affordability), and that facilities do not cover the size of the population. In terms of medicines and other healthcare products, 80-100% of CFPs report that IDPs and the host community face challenges in satisfying their needs whereas 60-80% of CFPs report the same for the non-host community, and 20-40% for refugees.

WASH

Between 80-100% of CFPs report that IDPs and the host community face challenges in obtaining water for drinking purposes; 60-80% of CFPs reports the same for the non-host community, and 0-20% for refugees. As to hygiene commodities, 80-100% of CFPs state that IDPs, the host- and non-host community are facing challenges in satisfying their needs; 0-20% of CFPs report issues for refugees. As to hygiene/sanitation facilities, 80-100% of CFPs state that IDPs, the host- and non-host community are facing issues in satisfying their needs while 0-20% of CFPs reports that refugees face challenges. 80-100% of CFPs report that IDPs, the host- and non-host community are facing problems in satisfying their needs in terms of solid waste disposal services while 0-20% of CFPs states that refugees are confronted with these challenges. More specifically, KI data states most areas in the district show many piles of garbage everywhere.

Shelter

When it comes to shelter/housing, 80-100% of CFPs report that IDPs as well as the host- and non-host community face challenges; 0-20% of CFPs report this issue for refugees. Between 80-100% of CFPs report that IDPs are confronted with challenges in obtaining household items; the same number of CFPs reports issues for both the host- and non-host community; 0-20% of CFPs report issues for refugees. Between 80-100% of CFPs state that IDPs, the host- and non-host community face challenges in satisfying their needs related to shelter commodities; 0-20% of CFPs state that refugees face similar challenges. Between 80-100% of CFPs report that IDPs face challenges in satisfying their needs as to energy commodities for heating, cooking, and lighting; 80-100% of CFPs report the same for the host- and non-host community, and 0-20% of CFPs report that refugees face the same issues.

Education

As to education services, 80-100% of CFPs state that IDPs and the host community face challenges; 60-80% states the same for the non-host community, and 20-40% for refugees. KI data furthermore reported that for pre-school children (3-5 years) there is enough learning space; however, classrooms are a little/sometimes crowded. Additionally, KI data reported that there is not enough learning space for primary and secondary male and female school children; classrooms are quite/often crowded and/or some classes are held outside. 80-100% of CFPs report that IDPs, the host- and non-host community face obstacles in satisfying needs in obtaining education commodities; 0-20% of CFPs report that refugees face issues.

Communication

In terms of communication services, 80-100% of CFPs report that IDPs, the host- and non-host community face challenges; 0-20% of CFPs report the same for refugees. Following KI data, the most serious problem that the population faced associated with access to communication in the district is that network coverage is unavailable or bad. In terms of communication commodities, 80-100% of CFPs report challenges for IDPs, the host- and non-host community; additionally, 0-20% of CFPs report that refugees are facing challenges in satisfying their needs.

Governance

Access to legal and law enforcement services is challenging for IDPs as well as the host- and non-host community according to 80-100% of CFPs; 0-20% of CFPs report that refugees face issues. More specifically, KI data reports that local authority services are available.

Transport

Access to transport services comes with challenges for IDPs as well as the host- and non-host community according to 80-100% of CFPs; 0-20% of CFPs state that refugees face problems. KI data further specifies that the most serious problems requiring immediate intervention include lack or insufficient funding, insufficient public vehicles, and physical damage to the infrastructure.

Sub-conclusions

- CFPs report that IDPs and the host community equally face most challenges in satisfying respective needs, followed by non-host communities, and then refugees;
- Between 80-100% of CFPs report no differentiation in clusters; all clusters are scored as equally needed by IDPs and the host community;
- According to CFPs, all population groups present in Dar Sad report needs in terms of food supplies, medicines and healthcare products, healthcare services, and education services;

8. Khur Maksar

Food Security

In Khur Maksar, it is reported 80-100% of IDPs and 60-80% of returnees face challenges in satisfying needs in terms of food supplies. As to host and non-host community, 40-60% of both groups respectively are facing challenges in satisfying food supplies; between 20-40% of refugees and migrants face challenges.²⁶⁸

Health

Access to healthcare services is reported challenging for IDPs by 80-100% of CFPs; 60-80% of CFPs report issues for returnees, 40-60% for the non-host community, and 20-40% for the host community, refugees and migrants. More specifically, according to KI data, it takes between 30 – 60 minutes for the population in the district to walk from their residency to a health facility. Specific health services not available or accessible to the population in the district are services to perform emergency surgery, as well as services to perform major and minor surgery. Additional issues reported through KI data are that facilities do not cover the size of the population, and that there is an irregular supply of medicines (interestingly, price of medicines was not reported an issue). In terms of medicines and other healthcare products, 80-100% of CFPs state that IDPs face challenges in satisfying their needs; 60-80% of CFPs report the same for returnees; 40-60% for the non-host community, and 20-40% for the host community, refugees and migrants.

WASH

Between 80-100% of CFPs state that IDPs face challenges in obtaining water for drinking purposes; 60-80% of CFPs report the same for returnees, 40-60% for the non-host community, 20-40% for the host community, refugees and migrants. In terms of hygiene commodities, 80-100% of CFPs report challenges for IDPs; 60-80% of CFPs report issues for returnees; 20-40% of CFPs state the host- and non-host community as well as refugees are facing challenges. When it relates to hygiene/sanitation facilities, 80-100% of CFPs state that IDPs are facing challenges in satisfying their needs; 40-60% of CFPs report the same for the host- and non-host community, and 20-40% for returnees and refugees. According to 80-100% of CFPs, IDPs are facing challenging in satisfying their needs in terms of solid waste disposal services; 40-60% of CFPs report issues for the host- and non-host community, and 20-40% for refugees, migrants and returnees. More specifically, KI data states most areas in the district show many piles of garbage everywhere.

Shelter

When it comes to shelter/housing, 80-100% of CFPs state that IDPs and returnees face challenges; 40-60% of CFPs state the same for the non-host community, and 20-40% for the host community, refugees and migrants. According to CFPs, the same numbers are applicable to all population groups when it relates to access to household items. Between 80-100% of CFPs state that IDPs face challenges in satisfying their needs related to shelter commodities; 40-60% of CFPs report these problems for returnees, the host- and non-host community, and 20-40% for refugees. Between 80-100% of CFPs state that IDPs face challenges in satisfying their needs as to energy commodities for heating, cooking, and lighting; 40-60% of CFPs report this issue for the host- and non-host community, 20-40% for returnees and migrants.

Education

When it comes to education services, 80-100% of CFPs state that IDPs face challenges; 60-80% of CFPs report that returnees face challenges; 40-60% report the same for the host- and non-host community, and 20-40% for refugees. KI data furthermore reported that for pre-school children (3-5 years) there is enough learning space; however, classrooms are a little/sometimes crowded. Additionally, KI data reported that there is enough learning space for primary and secondary male school children; however, classrooms are a little/sometimes crowded. Moreover, KI data stated that there is not enough learning space for primary and secondary female school children; there is not enough learning space, classrooms are quite/often crowded and/or some classes are held outside. Between 80-100% of CFPs state that IDPs face challenges in obtaining education commodities; 60-80% of CFPs report this issue for returnees, 40-60% for the host- and non-host community, and 20-40% for migrants and refugees.

²⁶⁸ It should be noted that according to CFP data, Khur Maksar is the only district in which all population groups are represented.

Communication

In terms of communication services, 80-100% of CFPs report challenges for IDPs, 60-80% report issues for returnees; 40-60% of CFPs reported the same for the host- and non-host community, and 20-40% for refugees and migrants. Following KI data, the most serious problem that the population faced associated with access to communication in the district is that network coverage is unavailable or bad. In terms of communication commodities, 80-100% of CFPs report that IDPs face challenges; 40-60% of CFPs report the same for returnees, the host- and non-host community, and 20-40% for refugees and migrants.

Governance

Access to legal and law enforcement services is challenging to obtain for IDPs according to 80-100% of CFPs; 60-80% report the same for returnees, 40-60% for the host- and non-host community, and 20-40% for refugees and migrants. More specifically, KI data reports that Fire Stations and Civil Defense services are not operational.

Transport

Access to transport services comes with challenges for IDPs according to 80-100% of CFPs; 60-80% report the same for returnees, 40-60% for the host- and non-host community, and 20-40% for refugees and migrants. KI data further specifies that the most serious problems requiring immediate intervention include lack or insufficient funding, inadequate public vehicles, and weak or underdeveloped planning process.

Sub-conclusions:

- CFPs report that IDPs face most challenges in satisfying needs, followed by returnees, the host community, non-host community, refugees, and migrants;
- Between 80-100% of CFPs report no differentiation in clusters; all clusters are scored as equally needed by IDPs;
- It should be noted that, according to KI data, Khur Maksar is the only district which reports having issues with Fire Stations and Civil Defense services.

General conclusions/ highlights²⁶⁹

- According to CFP data, in terms of population groups, IDPs are those most in need in all districts of Aden city, followed by host communities, non-host communities, returnees, refugees, and then migrants;
- According to CFP data, in terms of IDPs specifically, there is no generally no differentiation in needs per cluster; products and/or services of all clusters are scored as needed by 80-100% of IDPs²⁷⁰;
- Overall, when assessing all represented population groups, according to CFP data, challenges in satisfying needs are most reported in Al Mansura and Dar Sad districts (followed by Craiter and Attawahi districts);
- CFPs report that all represented population groups face challenges in satisfying their needs in Khur Maksar district;

Conclusions/highlights per cluster²⁷¹

Health

- Specific health services not available or accessible to the population are mainly emergency services (5 out of 8 districts) and services to perform major surgery (5 out of 8 districts);
- The most serious problem that the population faces associated with health facilities and access to them is that facilities do not cover the size of the population (7 out of 8 districts);
- The main issue which requires immediate intervention is the irregular supply of medicines (7 out of 8 districts);

WASH

- Most districts are confronted with significant issues with solid waste disposal services, with 5 out of 8 districts showing many piles of garbage everywhere;

Education

- For most pre-school children (3-5 years) (approximately 60%), there is enough learning space; however, classrooms are a little/sometimes crowded;
- For most primary and secondary male and female school children (approximately 50%), there is not enough learning space; classrooms are quite/often crowded and/or some classes are held outside;

Communication

- The most serious problem that the population faced associated with access to communication is that network coverage is unavailable or bad (6 out of 8 districts) followed by high tariffs (5 out of 8 districts);

²⁶⁹ CFP data.

²⁷⁰ Al Buraiqeh is an exception; according to CFP data, clusters in which needs are reported highest for IDPs are 1) Food Security; 2) Shelter; 3) WASH; and 4) Health.

²⁷¹ KI data.

Governance

- Issues with provision of local authority services was reported in 3 out of 8 districts; the main issue reported was that municipal police services were not operational;

Transport

- The most serious problem requiring immediate intervention most frequently reported is lack or insufficient funding (7 out of 8 districts);
- Additional problems requiring immediate intervention reported include physical damage to the infrastructure (4 out of 8 districts), followed by inadequate public vehicles (2 out of 8 districts), high operating costs (2 out of 8 districts), and shortage of qualified human resources (2 out of 8 districts), weak or underdeveloped planning process (2 out of 8 districts);

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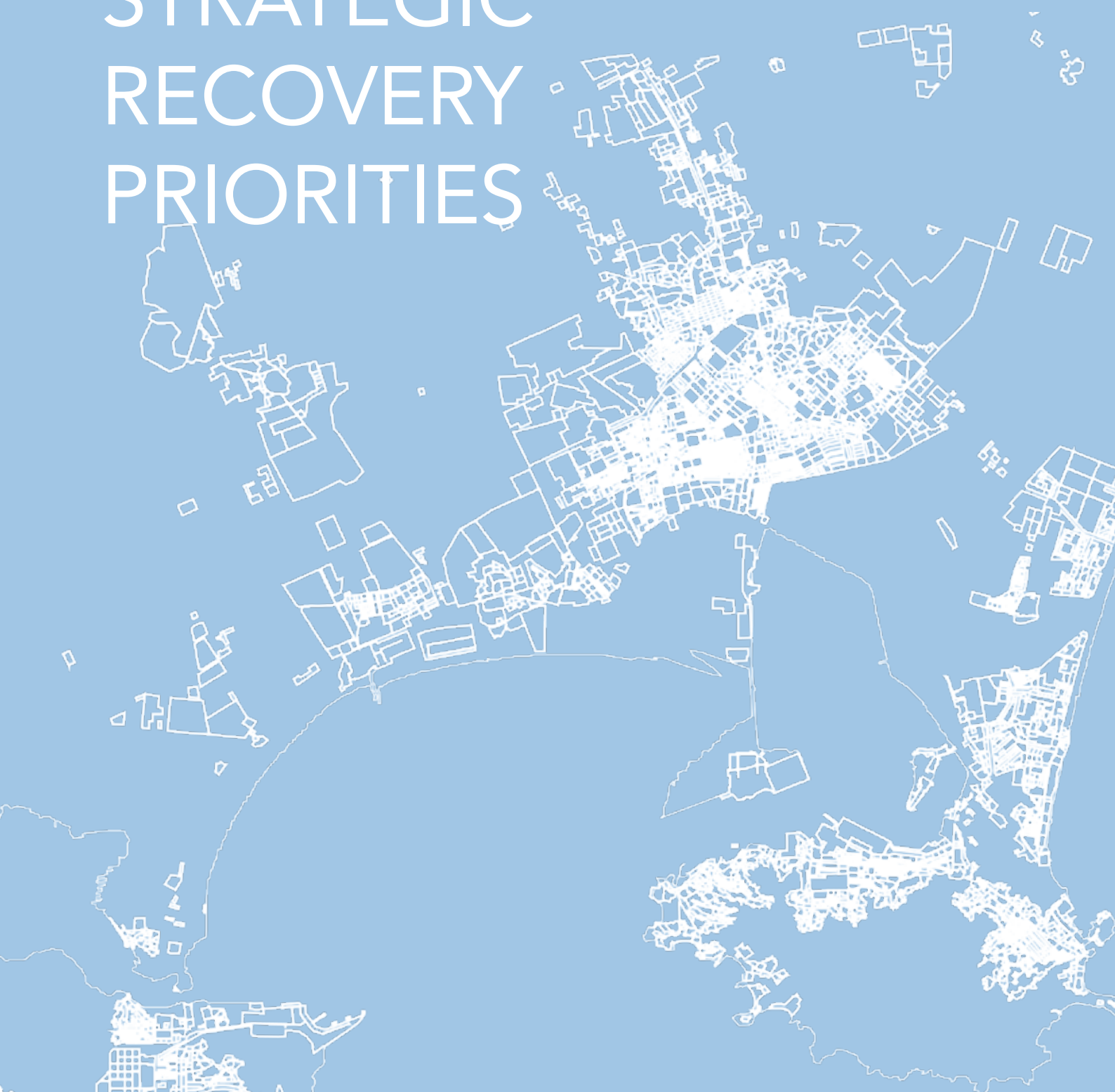


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ADEN STRATEGIC RECOVERY PRIORITIES



The designations employed and the presentation of material in this publication do not imply the expression of any opinion whatsoever on the part of the Secretariat of the United Nations or the European Union concerning the legal status of any county, territory, city or area or its authorities, or concerning the delimitation of its frontiers or boundaries regarding its economic system or degree of development.

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Introduction

Partnering with the European Union, UN-Habitat and iMMAP organized a three-day joint analysis and recovery planning workshop for Aden from 24 to 26 November 2019 at the UN-Habitat Yemen Programme office in Amman. The objectives of the workshop were to bring stakeholders together to better understand the situation in Aden, particularly in the area of housing, basic services, governance, heritage, economy, and population, and to develop strategic priorities for a recovery plan of the city. In order to initiate the joint planning discussion, ten officials from different ministries and local government in Aden were invited to participate and discuss the current situation and opportunity of Aden, particularly after the conflict

Building upon the several working group discussions as well as existing master plan and strategic plan for industrial development for new cities developed by the government in the 2000s, the workshop participants identified four strategies to be prioritized to accelerate Aden's recovery, particularly at the neighborhood level as follows:



Figures 1: Consultation Workshop November 2019 with government partners in Amman.



1. Housing for all

Strategies for housing were developed to tackle the issues related to the influx of IDPs and migrants, lack of decent and affordable housing, and existence of informal settlements. Three neighborhood-level strategies were recommended so that the relevant government offices and local authority can take control of the land management and urban growth in Aden, with an aim of providing better living conditions for all the residents.



2. An independent and economically strong Aden

Strategies for economic recovery were identified to establish stronger base for Aden's economic opportunities. Before the conflict, there were a few industries supported the Aden's economy. Therefore, most of the strategies include rehabilitation of the existing industries, particularly at specific neighborhoods (i.e. fisheries, saltworks, free zone). Additionally, because many ports have been destroyed as a result of the conflict, having an operational port and airport became an advantage for the city to further develop economically in the region. Therefore, the strategies suggest investing both in the longstanding and new industries to provide better economic opportunities to the communities.



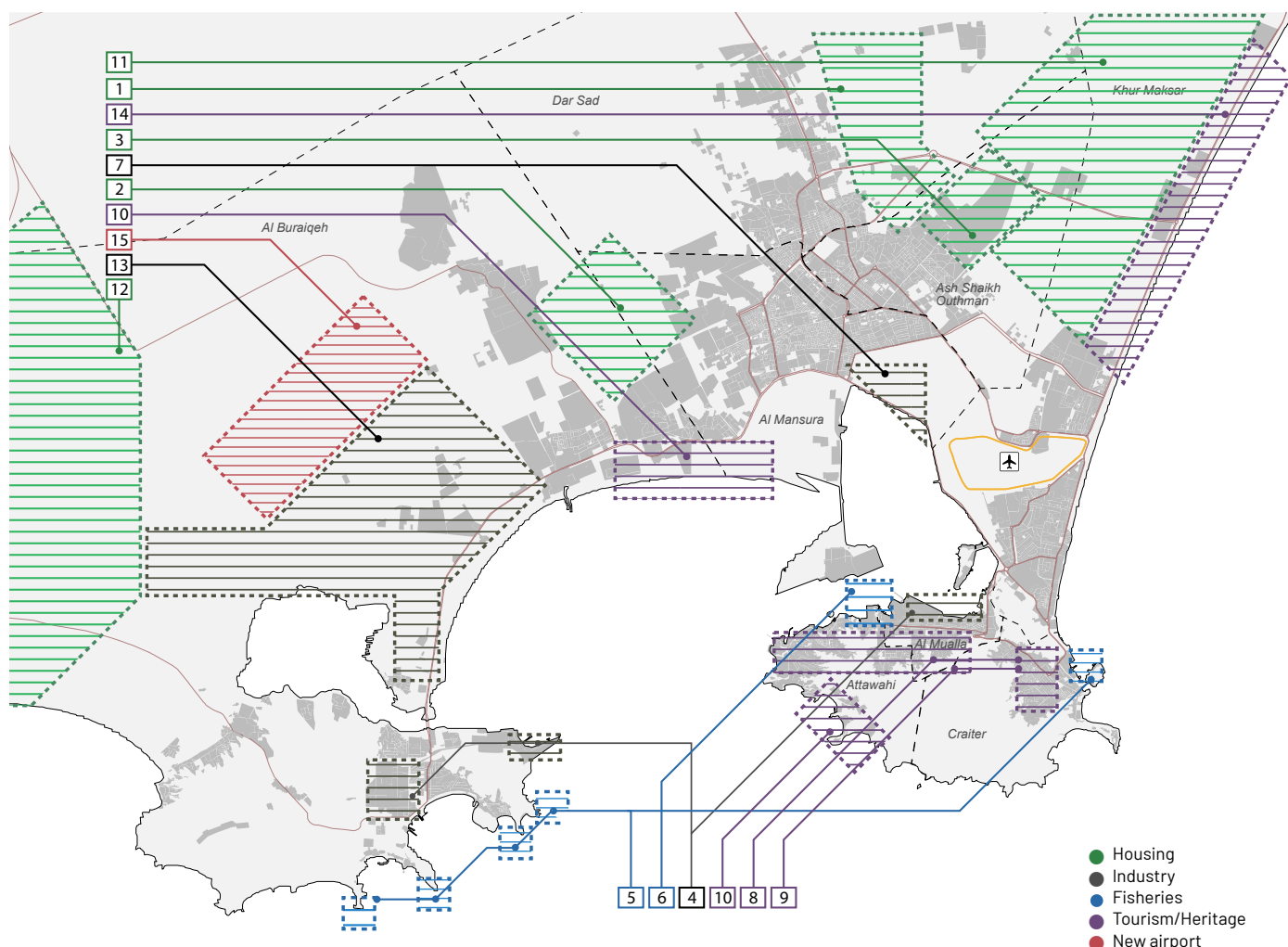
3. A green, healthy and safe Aden

Strategies for infrastructure and public services were developed based on the concept of Bring Back Better. Due to the crisis, a lot of infrastructure facilities were destroyed or have not been rehabilitated for a long time. Therefore, most of them are not meeting the current needs of the residents and communities (i.e. waste infrastructure, hospitals, water infrastructure, climate-adaptive buildings). Therefore, it was suggested that facilities should be reactivated and/or rehabilitated so that the residents will have a better living environment in Aden.



4. Culture, heritage and youth at the centre of Aden's future

Strategies for cultural heritage and youth is at the heart of Aden's recovery because Aden has a rich history and culture, as well as tourism can be a strong base for economic development. Additionally, young men and women are the majority of the city's population, therefore, building capacities of youth will further accelerate the recovery of Aden in the near future.



Map 1.1 Aden Recovery Plan: strategic areas for recovery projects by sector

Phase	#	Sector	Name	Description	Actions/Policies
short term	1	Housing	Dar Sad north housing expansion	1,200 ha / 300,000 inhabitants (250 people/ha)	Development through limited plot size (e.g. 240sqm) and two floors, or multi-storey buildings up to 8 floors
	2	Housing	Mansura east housing expansion	700 ha / 175,000 inhabitants (250 people/ha)	Development through limited plot size (e.g. 240sqm) and two floors, or multi-storey buildings up to 8 floors
	3	Housing	Dar Sad regularize/densify informal	200 ha / 20,000 inhabitants (from 100 people/ha to 250 people/ha) +30,000 inhabitants	Increase in density through filling gaps, regularizing plots for space and infrastructure optimisation.
	4	Economy	Ports	Rehabilitation and maintenance of facilities for oil refinery, export and storage	Provision of machinery and equipment. Support for advocacy and negotiation with international stakeholders in order to let Aden compete with other ports
	5	Economy	Fisheries	Rehabilitation of small ports and markets for fishing and trading to support local economy	Provision of machinery and equipment for ports, rehabilitation of local market to avoid all the fish to be exported
	6	Economy	Fish Port	Rehabilitation of big scale fish port to reactivate export	Provision of machinery and equipment for ports, which need cleaning too
	7	Economy	Saltworks	Rehabilitation of Aden saltworks	
	8	Heritage	Heritage sites and accommodation	Rehabilitation of accommodation facilities to create jobs and provide income to youth, rehabilitation of listed heritage sites in order to reactivate tourism and preserve Aden's memory	Coordination between Ministry of Culture, Ministry of Tourism and local authorities. Involvement of Aden's University. Control informal housing expansion within heritage sites. Rehabilitation of museums.
	9	Heritage	Heritage Neighborhoods	Safeguarding old urban fabric in order to preserve Aden's identity	Control building height and establish standards for building maintenance, regarding typology, materials and techniques
	10	Tourism	Touristic villages	Development and rehabilitation of touristic villages with commercial activities	
medium term	11	Housing	Khor Maksar north development	2,000 ha / 500,000 inhabitants (250 people/ha)	
	12	Housing	Al Burayqah New City	5,000+ ha / 1M+ inhabitants	
	13	Economy	Aden Free Zone	Development of heavy industry boosting city's economy and revenues	
	14	Tourism	Touristic villages	Development of touristic facilities with commercial activities	
	15	Transport	New airport	Proposal for the relocation of Aden International Airport as per CDS plan	

Table 1 Aden Recovery Plan: strategic recovery projects by sector



1. HOUSING FOR ALL

Due to the influx of IDPs and migrants, Aden's population increased rapidly in the last few years. This caused housing, land, and property (HLP) issues such as lack of decent housing, development of informal settlements, uncontrolled use of land, and encroachment in the heritage sites.

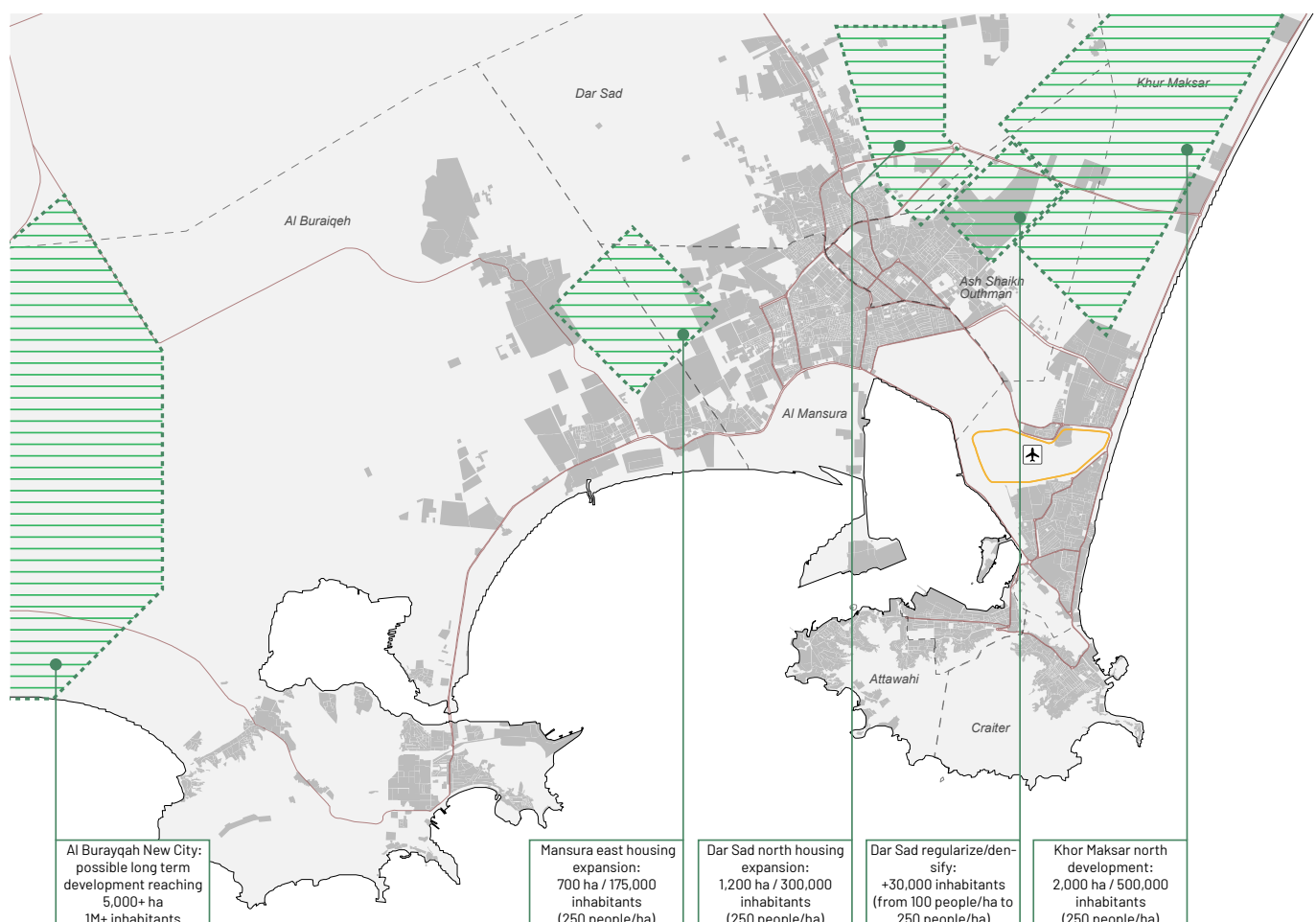
- **Rehabilitate the existing housing stock with a large scale rehabilitation project.**

Even though satellite damage assessments suggests that at least 1,693 structures were damaged during the recent hostilities, government officials reported much higher numbers. Based on their surveys, government officials they have determined that approximately 12,260 houses in total have been damaged in Aden City by October 2019, affecting approximately 73,560 individuals. In the case of about 20% of these, the damage is so high that the unit is not liveable. (affecting over 14,000 people). The highest concentration of damages are found in neighborhoods near military areas, or important economic logistical sites, such as Khur Maksor, Al Mu'alla and Al Tawahi. Although some houses have been rehabilitated (341 in Al Tawahi), this only covers a fraction of the damaged stock.

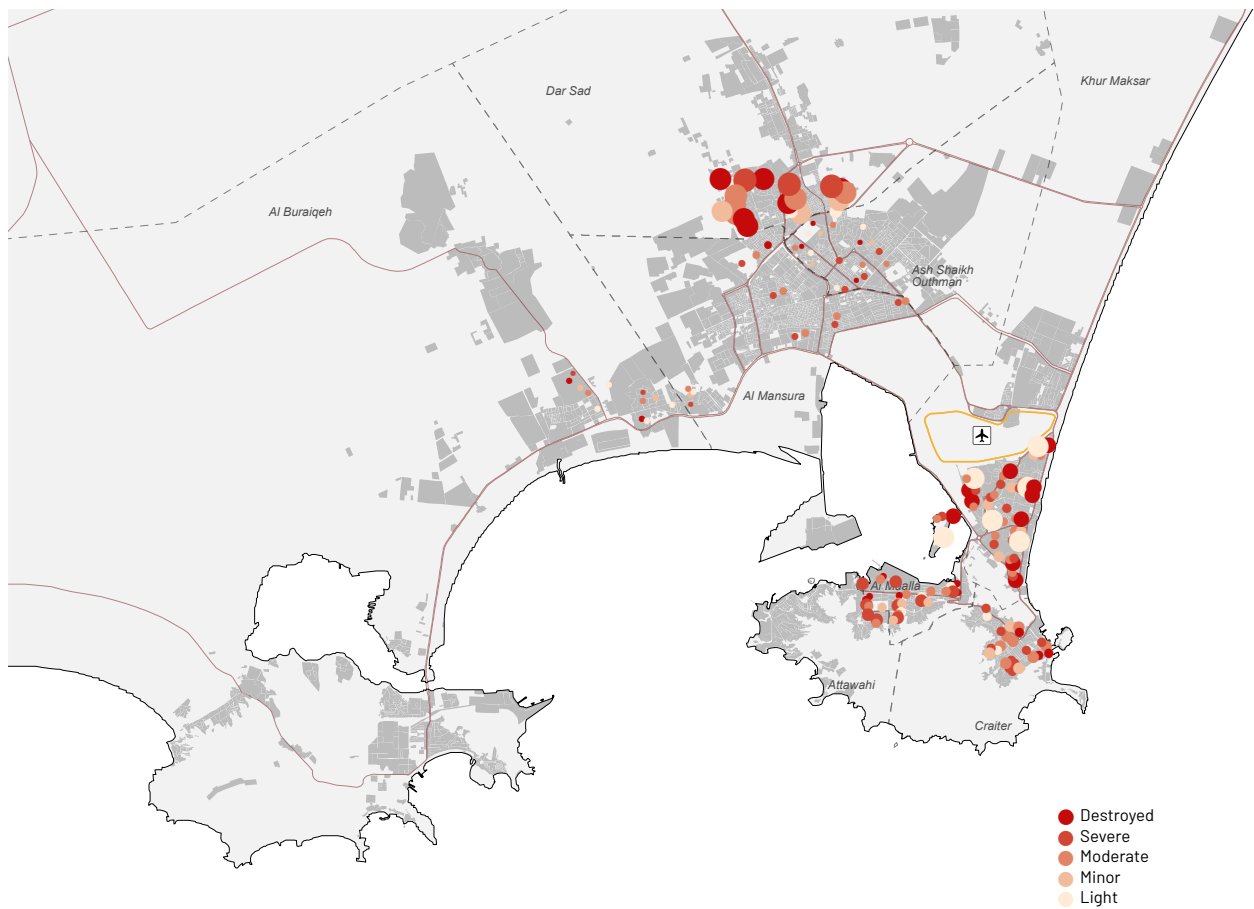
Officials estimate that approximately USD166 million is needed for a large scale rehabilitation programme. This amount may increase if action is not undertaken due to weather damages.

- **Support the poor in accessing the rental market with rental subsidy programmes.**

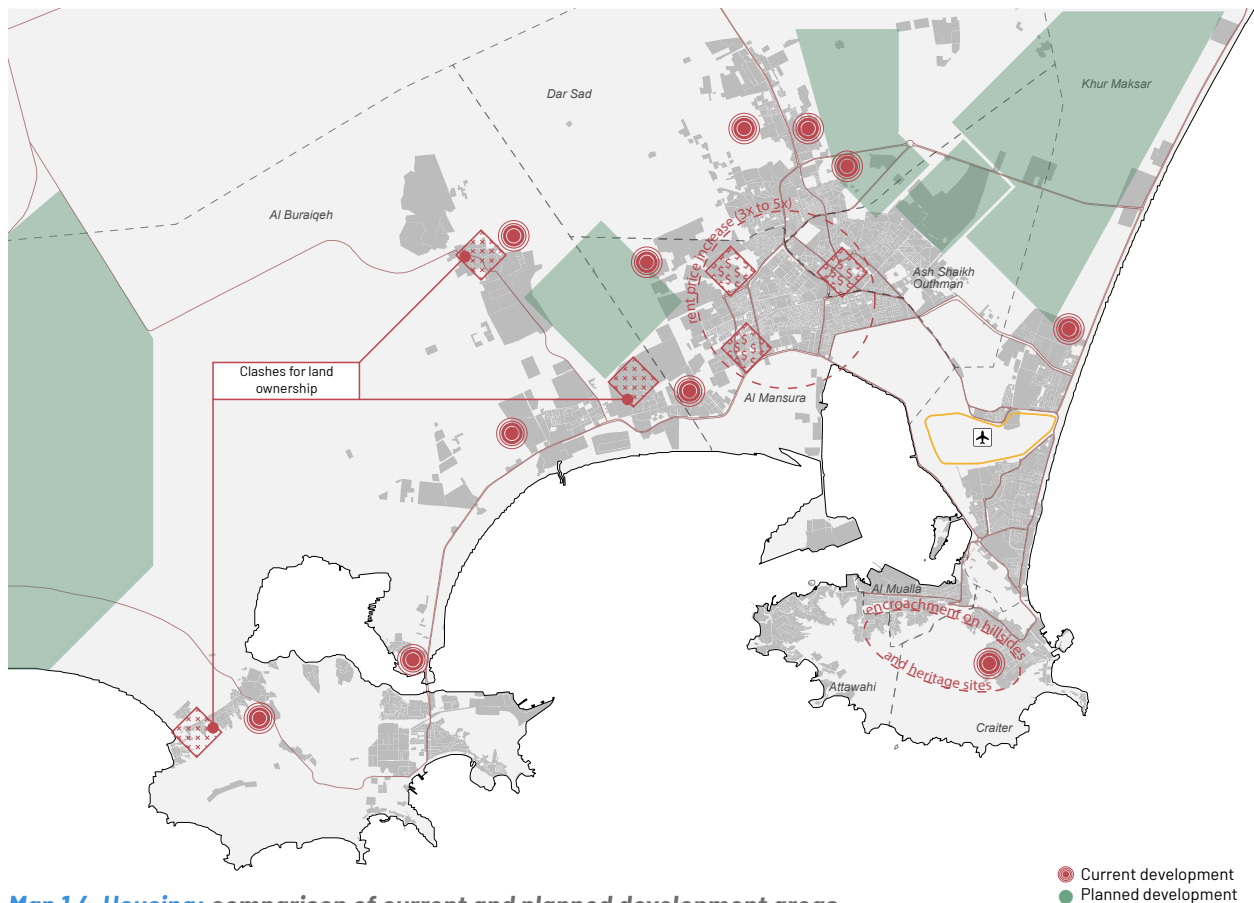
Increased competition for apartments due to higher population numbers have results in significant rent increases. Government officials reported that rent in most areas rents have at least doubled, while in well-served areas rents have increased up to five times, with several negative consequences. Overcrowding is seen as one of the problems. Furthermore, households living on a limited household budget are often forced to move back to their family homes, if available, or otherwise are forced to squat land or live on the streets. On a household level, these relocations have negative consequences as re-location forces households to move out of established work and social networks. On a city level, these movements result in a transfer of the poor from central to peripheral locations leading to an increasing poor/rich divide (ghettoization).



Map 1.2 Housing: strategic projects for the housing sector



Map 1.3 Housing: damage assessment as reported by Ministry of Public Works and Highways (MPWH)



Map 1.4 Housing: comparison of current and planned development areas

District		Restoration in USD								Demolition		Total restoration and demolition	
		Severe Damage		Medium Damage		Minor Damage		Light Damage					
		# of houses	cost	# of houses	cost	# of houses	cost	# of houses	cost	# of houses	cost	Total # of houses	cost
1	Khormaksar	34	1,644,480	69	1,175,337	349	2,507,671	3,363	4,628,030	132	44,741,110	3,947	54,696,628
	Cost for studies & supervision 4%		65,779		47,013		100,307		185,121		1,789,644		2,187,865
	Sub-total		1,710,259		1,222,350		2,607,978		4,813,151		46,530,755		56,884,493
2	Sira	37	1,805,309	143	2,345,774	393	2,952,804	882	2,029,357	51	9,769,212	1,506	18,902,456
	Cost for studies & supervision 4%		72,212		93,831		118,112		81,174		390,768		756,098
	Sub-total		1,877,522		2,439,605		3,070,916		2,110,531		10,159,981		2,572,233
3	Maalla	38	1,972,936	91	1,552,444	248	1,835,244	1089	1,885,750	28	8,154,141	1,494	15,400,515
	Cost for studies & supervision 4%		78,917		62,098		73,410		75,430		326,166		616,021
	Sub-total		2,051,854		1,614,541		1,908,654		1,961,180		8,480,307		16,016,536
4	Al Mansoura	19	917,365	53	909,319	103	761,620	222	532,614	3	2,559,136	400	5,680,054
	Cost for studies & supervision 4%		36,695		36,373		30,465		21,305		102,365		227,202
	Sub-total		954,060		945,691		792,084		553,919		2,661,501		5,907,256
5	Al Sheikh Othman	18	836,205	17	292,835	39	288,750	189	382,391	4	673,119	267	2,473,299
	Cost for studies & supervision 4%		33,448		11,713		11,550		15,296		26,925		98,932
	Sub-total		869,653		304,548		300,300		397,686		700,044		2,572,233
6	Dar Sa'ad	164	9,457,462	393	6,650,127	1,009	7,347,636	1,499	3,488,340	210	33,316,451	3,275	60,360,017
	Cost for studies & supervision 4%		378,298		266,005		293,905		139,534		1,332,658		2,410,401
	Sub-total		9,835,760		6,916,132		7,641,542		3,627,873		34,649,109		62,670,418
7	AL Buraiqeh	3	103,920	27	417,466	56	438,362	160	303,654	17	1,487,611	263	2,751,01
	Cost for studies & supervision 4%		4,157		16,699		17,534		12,146		59,504		110,041
	Sub-total		108,077		434,165		455,896		315,800		1,547,116		2,861,054
Total Cost		313	17,407,185	793	13,877,032	2,197	16,777,370	7,404	13,780,140	445	104,728,813	11,512	149,484,223

Table 2 Housing: Damage assessment and cost estimation as reported by Ministry of Public Works and Highways (MPWH)

- **Expand and support the legal housing market through declaring interim strategic growth poles.**

The current masterplan (valid from 2005-2025) has until 2011 been largely successful in guiding growth. However, after 2011 and particularly 2015, the capacity of the plan to guide growth has faltered. Public investments in infrastructure can guide urban growth by improving the attractiveness of an areas by ensuring accessibility and services. However, in the absence of this government guidance, a common occurrence in cities in conflict, growth tend to happen, and has happened, in areas nearby existing job centres, as well as areas where supporting infrastructure is already present or easy to connect to with little private investment. As large-scale investments in infrastructure are, at least on the short term, unlikely to materialize, this is a reality that the Aden's administration will have to deal with. However, the current main tools for urban development are the allocation of plots to government employees, the development of residential compounds either implemented as government projects for the poor or as concessions for estates for higher income groups (e.g. villa neighborhoods), or the development of road and services infrastructure. These tools are currently insufficient to tackle the reality on the ground of low-value private constructions, and supplementary strategies need to be considered. A possible course of actions is declaring strategic growth poles in de-facto growth areas (that is, areas that have seen residential growth even

though they fall outside of legal residential areas as defined in the masterplan) that are in public possession, to take back control over road network developments (ensuring the possibility of a later stage implementing underground infrastructure) as well as ensuring reservations of space for public services (schools, parks, mosques, health centres).

Neighborhood scale strategic interventions

Middle income, high density neighborhoods

Middle income neighborhoods are generally characterized by an adequate built-up and population density. Reports on the movements of IDPs show how those areas are also subjected to an increase in population, as incoming fluxes find accommodation here, together with other solutions. The results of the population increase are congestion in the streets, a decrease in the capacity of basic infrastructure (i.e. water and electricity provision) due to the load on existing networks, and uncontrolled expansion of buildings that are burdened with additional floors, since it is not possible to grow horizontally, mining the structural capacity of the load-bearing system. The food and good provision is challenging due to overcrowding and lack of maintenance to the local markets. This impacts of the traffic congestion as many merchants then encroach on the streets with their movable counters. Usually, middle income neighborhoods are also the oldest ones, and are dotted with

ANNEX F - STRATEGIC RECOVERY PRIORITIES

heritage sites, monuments and museums, which all lack of maintenance and are often closed to the public. Being heritage from a broader point of view, these areas suffer from the low quality of repairs which often impact on the 'image' of the neighborhood itself: the loss of the peculiar identity impacts on tourism and thus on economy too.

Actions:

- Rehabilitation of museums and heritage sites
- Set up standards for residential buildings within the old city fabric
- Rehabilitation of old markets
- Provide alternative housing solution to ease congestion
- Control informal encroachment on heritage sites

Informal/IDPs poor neighborhoods

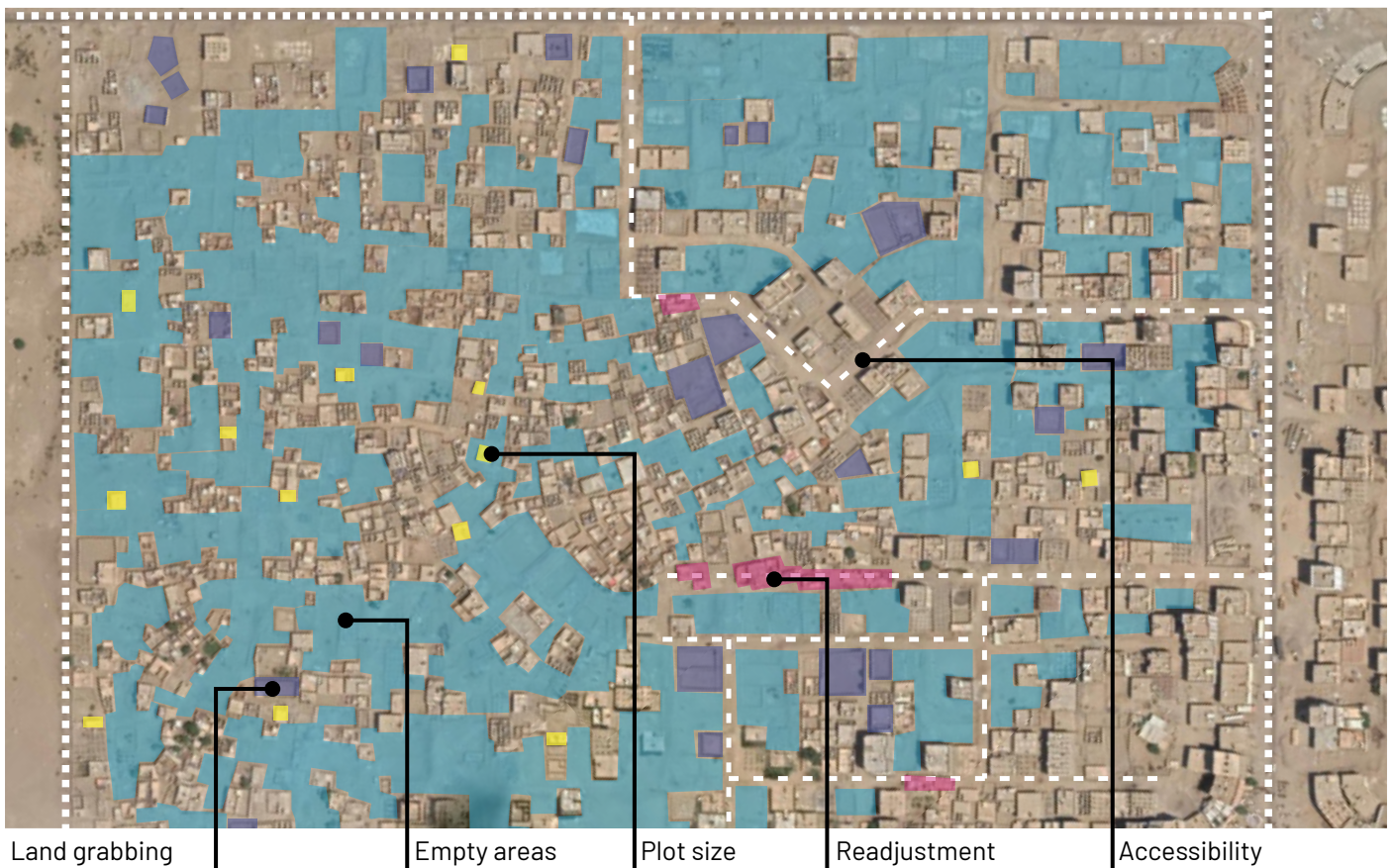
IDPs with low income coming to the city significantly contribute to the growth of informal settlements. Those areas are generally located in the outskirts of the city, on the edge between the compact built-up area and rural or barren land. Informal settlements here take shape as organic and disorganized development, that grows generally from existing road network and expand by the addition of single small elements. A result of this is the lack of adequate accessibility to the area and within the buildings: usually there is no paved road and many buildings form clusters that impede the circulation of vehicles. Unpaved roads are rare too, and if there is an attempt to leave space for accessibility at the edges of the areas, the pattern is usually abandoned towards the center, meaning that in order to develop a more regular street pattern it is necessary to enforce plot or land readjustment. Informal settlements are also characterized by land grabbing even if it is not followed by actual construction. This result is the presence of plots surrounded by walls but not hosting any household. Unplanned development causes a lack of uniformity among the plot sizes, leading to inequality in the provision of adequate housing and a not-optimized development that results in a sprawling low density with many spaces left unbuilt.

Actions:

- Provide adequate accessibility
- Enforce land/plot readjustment to regularize built-up/road pattern
- Control land grabbing without construction
- Densification: density in those areas is 50 people/ha. It should be raised at least to 200 people/ha
- Regularize plot dimension to provide adequate space for households



Map 1.5 High density/middle income: strategic interventions at the neighborhood scale



Map 1.6 Informal/IDPs poor neighborhood: strategic interventions at the neighborhood scale



2. AN INDEPENDENT AND ECONOMICALLY STRONG ADEN

In order to thrive economically, Aden should reduce its dependencies, for example in the energy sector, while strengthening the export sectors and management of free zone in which it has a regional advantage.

- **Rehabilitate existing local fishing ports as well as local fish markets.**

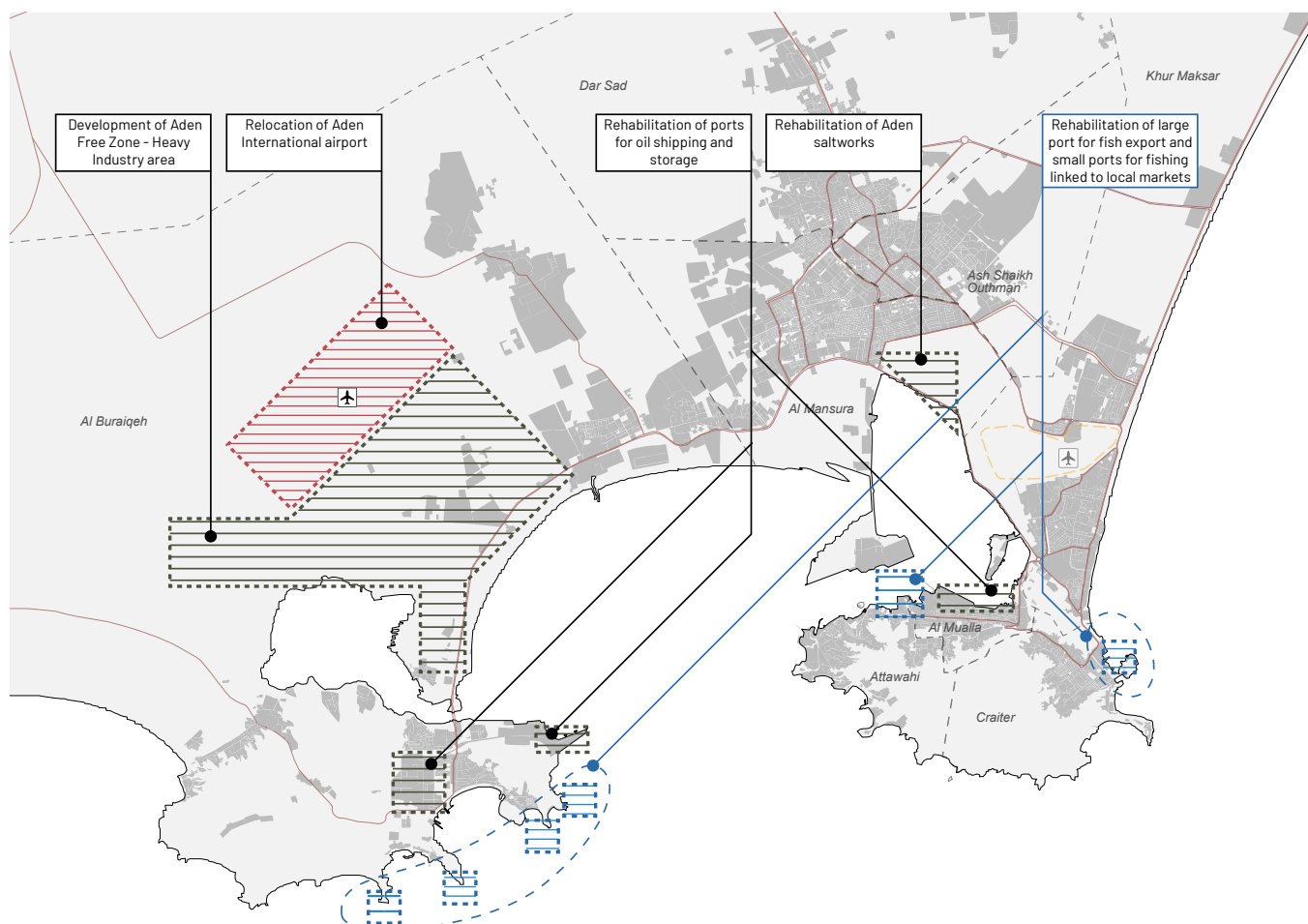
Fisheries was one of Aden's major economic drivers before the crisis and fish coming from these ports are also sent to cities outside of Aden. However, the sector has become dormant since the beginning of the conflict. Aden currently hosts commercial fisheries ports (#6) and small ports and markets for local fisheries (#5). In order to re-activate the fisheries industry, rehabilitation, redevelopment and cleaning of the port is urgently needed as the port was not been adequately maintained since the 1980s. Furthermore, local fishing ports that are currently located in Little Aden's peninsula and Crater that used for community-driven small-scale fishing businesses should be supported.

- **Consider the relocation of the existing international airport to outside the city centre (#15)**

As most of the airports in Yemen are not currently operational, Aden International airport has a comparative advantage to be fully utilized as a hub to import and export necessary products to and from Yemen. However, in the current location, Aden International Airport sits at a bottleneck towards the peninsula. This makes future expansion difficult and leads to further congestion of the largely residential area surrounding it.

Power Plant	Current capacity	Estimated capacity
Al-Heswah Electrothermal Power Plant	44 MW	76 MW
Al-Heswah Gas Power Plant	50 MW	50 MW
Al Mansoura Power Plant	36 MW	63 MW
Al Mala'ab (22 May) Power Plant	12 MW	35 MW
Khormaksar	5 MW	13 MW
Shehnaz	11 MW	30 MW
Hajif (Tawahi)	4 MW	9 MW
TOTAL	162 MW	276 MW

Table 3 Electricity: Power Plants' capacity as reported by Ministry of Electricity and Energy

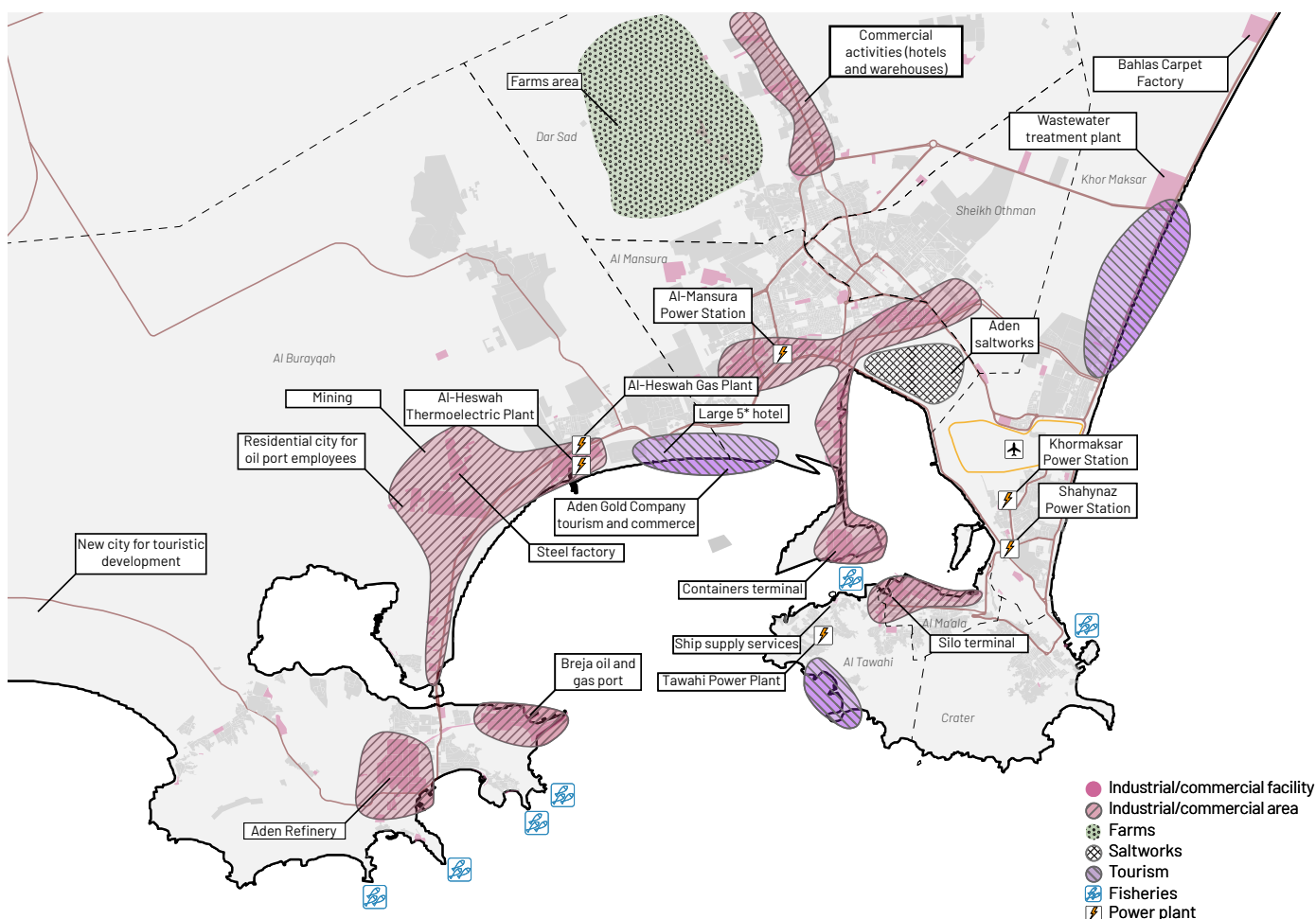


Map 1.7 Economy: strategic projects for the economic sector

ANNEX F - STRATEGIC RECOVERY PRIORITIES

Power Plant	Operations	Cost of spare parts (USD)	Cost of wages (USD)	Cost of components (USD)	Implem. fees (USD)	Building costs (USD)
Al-Heswah Electrothermal Power Plant	Spare parts for the Russian terminal	1,472,589				
	Maintenance of desalination plant					
	Rehabilitation of Chinese turbine	3,068,378				
	Construction of new substation 11/33 k.f.			4,110,000	99,860	479,330
	Construction of ENMA(2) substation 11/33 k.f.			2,570,000	79,888	519,275
Estimated total		4,540,967	1,000,000	6,680,000	179,748	998,605
						13,399,320
Al-Heswah Gas Power Plant	Operating parts and consumables for a year	562,199				
	Spare parts for mechanical maintenance	592,425				
	Systems spare parts	42,500				
	Electrical parts	50,263				
Estimated total		1,197,124	66,467			
						1,263,591
Al Mansoura Power Plant	Spare parts for generators from manufacturer					
	Items for maintenance from local market	7,541,061				
	Air Charger Maintenance (T / C)		335,532			
	Oils, filters and chemicals	1,197,351				
network	Construction of Transfer Station			4,190,000	59,916	319,553
Al Mala'ab (22 May) Power Plant	Spare parts for generators					
	Items for maintenance from local market	2,277,881	99,860			
Estimated total		11,016,293	435,392	4,190,000	59,916	319,553
						16,021,154
Khormaksar	Spare parts to carry out maintenance					
Shehnaz	Spare parts to carry out maintenance	6,061,054	167,765			
Hajif (Tawahi)	Spare parts to carry out rehabilitation					
network	Strengthening circles Khormaksar/Shahnaz			2,450,000		299,581
	Construction of Airport Transfer Station			1,940,000	79,888	718,996
				4,390,000	79,888	1,018,577
Estimated total		6,061,054	167,765	4,390,000	79,888	1,018,577
						11,717,284
network	General wiring components			3,735,000		
	Cable devices and accessories			700,000		
Estimated total				4,435,000		
GENERAL ESTIMATED TOTAL		22,815,438	1,669,624	19,695,000	319,552	2,336,735
				46,835,349		

Table 4 Electricity: Needed operations and cost estimation as reported by Ministry of Electricity and Energy



Map 1.8 Economy: Analysis of main economic drivers in Aden

- **Update and actively implementing the free-zone policy in the city**

Aden's free zone is located along the coast (#13) and comprises ports both for importing and exporting products to the free zone. As Aden's economy, particularly before the conflict, was heavily depended on the trade within the free zone. However, with current urban developments the free-zone area needs to be updated, and public/private infrastructure investments to implement the free-zone policy need to be considered.

- **Upgrade the port with the necessary infrastructure to manage a large-scale export of refined oil to the region and globally.**

Before the conflict, some ports, located close to the oil refinery factories (No. 4 on the map), were already fully operational to export the product, but export has since faltered.

- **Rehabilitate the saltworks facilities to restart salt exports**

In recent years, salt production in Aden has been one of its main exports. There are currently 11 saltworks in Aden to refine and pack 150,000 metric tons of salt in a year (#7). However, due to the conflict, salt production and its shipping has largely been halted.

- **Invest in public decentralized power production**

Before the war, there was one system in the whole of Yemen (from Marib power plant, Sana'a, Hudaydah going down south to Aden), sharing the load of electricity production nationally. Now electricity is mainly dependent on production in Aden, which has an outdated production infrastructure, and is heavily dependent on diesel for their operation. Current frequent interruptions are not only an inconvenience but also affect the operation of health facilities and water pumps. There have been studies on the improvement of the electricity network, however the current situation makes them difficult to implement. A stable electricity supply is seen as one of the major requirements for economic recovery. Therefore, in addition to investments in the electricity production of Aden, decentralized power production through solar energy should be considered.

The Ministry of Electricity provided information on the current and expected deficit in electricity provision. During the winter, the expected demand is around 220 MW, exceeding by 70 MW (32%) the energy that can be produced locally. The city's electricity demand during the summer is increasing year after year and it is expected to reach 572 MW during summer 2020, thus the deficit could reach 422 MW. The Ministry of Electricity points out the provision of spare parts in order to maintain, rehabilitate and expand the existing facilities as a priority, as well as the construction of new power stations.

No.	Project Name	street width (m)	street length (m)	estimated cost (USD)
Maintenance, asphaltting and paving the Sirah District projects				
1	Ahli Bank street-AI matahef	7,5	300	102,857
2	Ahli Bank street-AI hobeshy	10	460	210,286
3	Ahli Bank street-Aden hospital round	7.5*2	500	342,857
4	Al Akle around-Aqabat Hookat -security point	7.5*2	2,500	1,062,420
Total		6,760		1,718,420
Maintenance, asphaltting and paving Al Malla'a district projects				
1	Ragel round-AI Aqaba round	9*2	2,000	1,645,714
2	Al Sawa'ay street	9	1,750	720,000
Total		5,750		2,365,714
Maintenance, asphaltting and paving khormaksar district projects				
1	Al Rahab round-central security round	9.0*2	1,200	880,000
2	central security round-Sazuki round	10.5*2	4,440	4,262,400
3	Ragel round-AI Akle round	10.5*2	1,850	2,797,717
4	Al Thakafa round-Abyan Coast Junction	9.0*2	450	330,221
5	Al Zeera'a round-AI Thakafa round	7.5*2	680	416,000
Total		17,240		8,686,338
Maintenance, asphaltting and paving Manoura district projects				
1	Caltaks round-AI Qahira round	12.0*2	2,550	2,495,002
2	Al Boriqa road junction-AL Safena round	10.5*2	3,500	2,996,448
3	Al Saigen street	7.5*2	2,000	891,072
4	Street parallel to the Al Al Saigen street	7,5	1,220	373,072
5	Al Baskaweet street	7,5	800	416,474
6	Health office- 22May school	7,5	800	416,474
7	Al Horish-general street junction(Aden-Taiz)	7,5	800	874,596
8	AL Khamseen street-Kabota-Beer Fadel	7.5*2	2,200	1,508,571
9	Konkord round-Kabota	7.5*2	700	428,064
10	Al Katheery street	9	930	341,228
11	Al Sanafer street	7,5	920	726,614
Total		27,370		11,467,615
Maintenance, asphaltting and paving Sheikh othman district projects				
1	AL Mahareek-AI Masa'abain junction	7,5	1,360	831,667
2	AbdulQawi round-AI Mahareek junction-petrol station	9.0*2	710	584,227
3	Al Mimimdarah petrol station-The intersection of the ring	9.0*2	4,000	2,935,296
Total		10,780		4,351,190
Maintenance, asphaltting and paving Dar Sa'ad district projects				
1	AL Mojasam round-Bazara'a Al Rebat	14.5*2	3,800	3,235,814
2	The road leading to AL Salam city	7.5*2	1,910	1,136,856
3	Dar Sa'ad round-AL Masa'abain junction-AL Masa'abain round	10.5*2	3,140	2,688,242
4	Dar Sa'ad round-AL Mojasam round-Abbas street	7,5	1,450	673,120
Total		19,150		7,734,032
Maintenance, asphaltting and paving Boriqa district projects				
1	Road caltaks round-AI Boriqa round	12.0*2	17,000	14,554,180
2	Al Boriqa round-Shop	7,5	1,400	489,210
3	Road Al Boriqa junction-AL Haram Al Game'a street	7,5	800	293,530
4	AL khasa'a road	8	1,600	559,097
5	Beer Ahmed junction-ministry of education	7,5	800	293,530
6	Post office-Administrative university-AI Sakan AL Game'a street	7.5*2	1,100	1,076,275
Total		40,800		17,265,822
Total Amount for all districts' projects			127,850	53,589,131

Table 5 Road network: Rehabilitation costs as reported by Ministry of Public Works and Highways (MPWH)



3. A GREEN, HEALTHY AND SAFE ADEN

Due to the conflict, many infrastructure facilities were destroyed or not have been rehabilitated or maintained since the 2000s or early 2010s. Although the basic service provision will play a key role in maximizing the opportunities in Aden, the current lack of decent public services and infrastructure is affecting the communities negatively.

- **Focus on re-activating the waste infrastructure to avert worsening of the health crisis.**

The waste infrastructure plays a key part in a structural approach to address the health crisis in the city. In many streets, waste can be seen piling up, and even though all four dumpsites in the city are functioning, in 2015 only about 15% of waste collection trucks were operational. Furthermore, reportedly medical waste is in many health facilities with the general solid waste, while people object to the incineration of medical waste for fears of the smoke. There are other instances of pollution of which the source are not yet known, for example, health officials have reported rise in cases of leukemia in infants as well as renal failure with so far unknown causes. The bulk of the waste management infrastructure, such as sewage treatment plants were established in the 50s and have not been maintained and are operating at reduced capacity. In five districts (in particular Crater and Mualla), wastewater on the streets are a regular sight.

- **Rehabilitate some of the key hospital facilities, notably Al Sadaq hospital.**

As the number of beds increased, this was not matched by an improve in the water and electricity infrastructure leading to a deterioration in particular to public hospitals, with many families preferring private hospitals as a result.

- **Upgrade the public water infrastructure**

Before 2014, the city was reportedly covered with regards to water and electricity. However, government officials also report that the supply side has not significantly improved since the 80s, which is insufficient considering the densification of the city centre and a significant increase of demand on the water infrastructure. Outside of the city centre, there is no water provision through the network, in particular in informal developments.

- **Rehabilitate the road infrastructure and its lighting systems.**

There is a significant need to rehabilitate the road network and its lighting systems to decrease road accidents and increase safety, particularly for women and children at night. Even though UNOPS has supported the government with the provision of some solar powered lamps, there is still a need of approximately 3.400 lighting poles in 5 districts. Furthermore, 27% of the road network is completely destroyed and 50% of the network is partially damaged.

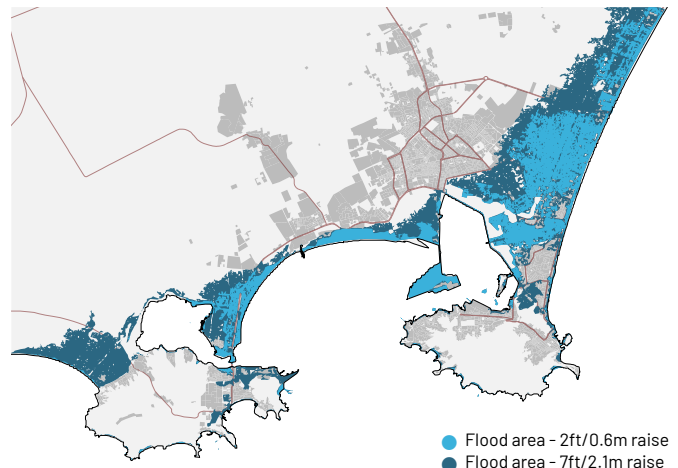
- **Plan for climate change**

The future masterplan should take into consideration the likely effects of climate change and adjust the master plan accordingly. For example, significant areas in Khor Maksor are likely to be under threat of inundation, if the sea level rises at current projected levels. Investment in infrastructure in these areas will

be costly in the long-term. Furthermore, natural wadi courses, such as the great Wadi that connects from the north to the sea should left as an open area to prevent structures in this course to be threatened by seasonal flooding.

- **Take back control of the informal housing market.**

The informal housing market does not only pose a housing problem, but a health and safety problem: informal constructions on hillsides endanger natural water management functions (e.g. cisterns area No.9). Furthermore, the growth of informal settlements has led to further sewage and sanitation issues, leading among other to pollution of the groundwater and open water sources. In addition, encroachments of on hillsides impede the water management functions of some areas. Within already built-areas, furthermore, officials have noted the rise of unsafe constructions on top of existing buildings to meet demand, some of which have a high risk of collapse. Finally, the informal housing market is a security risk, as conflicts over land have the potential to spread if households or speculators seek protection of their existing or acquired assets if with groups that are able to provide protection through private means. Legalisation of informal developments on areas under government control, can be done conditionally upon adherence to health and safety standards (e.g. road widths, space for sewage systems) which can be negotiated on community level.



Map 1.9 Expected flood areas in two scenarios: global sharp carbon cuts and unchecked pollution

Location	Needs
Aden Health and Population office	Rehabilitation of the sewage network
	Reconstruction of the old building
	Building the second floor
	Rebuilding the primary health care building
	Building a national burn center
	Building a national tuberculosis treatment center
	Building a center for kidney transplant surgery
	Building a health center (specialized in epidemic diseases)
Crater District	Building a health center for eye surgery and cornea transplantation
	Rehabilitation of health complexes in general
	Completion of new room in the Al Qata'a complex
	Re-equipping the laboratories in Al Qata'a complex and Al Maydan
	Equipping ophthalmology department, dentistry department and surgery department in Al Qata'a complex and Al Maydan
	Rehabilitation, equipping and furnishing of the Health and Population Office in Sirah + building a fence for the Health Office
	Processing of information and statistics in a data room
	Expanding and increasing the clinical capacity of the obstetric center
Al Mualla District	Increasing the number of nurseries
	Raising fence height of Al-Mualla and obstetric emergency center
	Rehabilitation and equipping of Al-Mualla complex with dental chair, chest x-ray equipment and laboratory equipment
	Rehabilitation and equipping the obstetric center in Al-Mualla complex, in order to run 24 hours for obstetric emergency
	Building a guard room for the complex and another for reproductive health
	Building a health department office in the directorate
	Rehabilitation and equipping of Tawahi health complex
	Equipping the Al-Fateh Health Center with furniture and medical equipment
Tawahi District	Running emergency and obstetric center
	Rehabilitation and equipping of Al Qalaa'a Health Center
	Add rooms to Khormaksar health complex
Khormaksar District	Equipping Khormaksar health complex
	Adding and equipping two rooms for x-rays and ophtalmology to Al-Areesh Health Center
	Rehabilitation of Primary Healthcare building
Mansura District	Equipping and furnishing the emergency center
	Providing ambulances
	Completing the construction of ten rooms in Hashed and Qahira complex
	Activating obstetric emergency services operating 24 hours
	Rehabilitation and furnishing of the hospitality building
	Equipping and furnishing the health complex
	Provision of water and electricity to the health complex
	Rehabilitation and equipping of Sheikh Othman complex
Sheikh Othman District	Building additional rooms
	Providing equipment and furniture to health centers (Al-Muharik, Al-Mamdara, and the Ottoman Code)
	Raising fence height of health centers (Al-Muharik, Al-Mamdara, and the Ottoman Code)
Dar Saad District	Rehabilitation, equipping and furnishing the Dar Saad complex
	Supporting Al Lohom and Al Amad centers with equipment and furniture
	Rehabilitating Al Sharqia Health Center
Al Buraiyqah District	Providing furniture and medical equipment to Al Sharqia Health Center
	Building a Health Center in Al-Salam
	Rehabilitating Al Burayqah complex
	Providing medical equipment to Al Burayqah complex
	Rehabilitating and expanding Bir Ahmed Center
	Rehabilitation of Al Kheisa clinic, restoration and expansion of the maternity center
	Building a fence and a crematorium for the health centers
	Rehabilitating the building
Psychiatric and Neurological Hospital	Providing furniture and equipment
	Raising fence height
	Restoring the garden
	Building a lecture hall
	Building new departments for autism, drugs addiction and mental illness
	Building a separate department for patients with criminal records
Al Saddaqa General Teaching Hospital	Rehabilitation of building through maintenance of sewage and electricity system
	Provision of furniture and medical equipment
	Rehabilitation of physiotherapy, pediatric, internal medicine, surgery and epidemiology departments, as well as central laboratory
	Expanding dialysis departmen
	Rehabilitation of hospital gates

While access to facilities – places of worship, museums, theaters, and cultural institutions – remains open, sector experts indicate that it is limited. Furthermore, the supporting tourism infrastructure (e.g. hotels) has been severely damaged and virtually revenue from tourism-related activities has been lost, with massive unemployment in this sector as a result. However, there are a lot of potential cultural heritage sites, for example in Little Aden (No. 8 and 9 on the map), that can attract tourists. Areas such as #14 the proximity to the coast would attract tourists who would like to enjoy the beautiful beach. The beach and small islands near the coast has a potential to develop villas and hotels to attract a large number of tourists (#14).

• Youth development programmes

From 2015-2018 the unemployment rate in the private Yemen was estimated to be approximately 65%, as a lot of employees, particularly women and youth, were let go. Consequently, youth should be at the centre of any capacity development programme.

Table 6 Health sector: Needs assessment as reported by Office of Public Health and Population



4. CULTURE, HERITAGE AND YOUTH AT THE CENTRE OF ADEN'S FUTURE

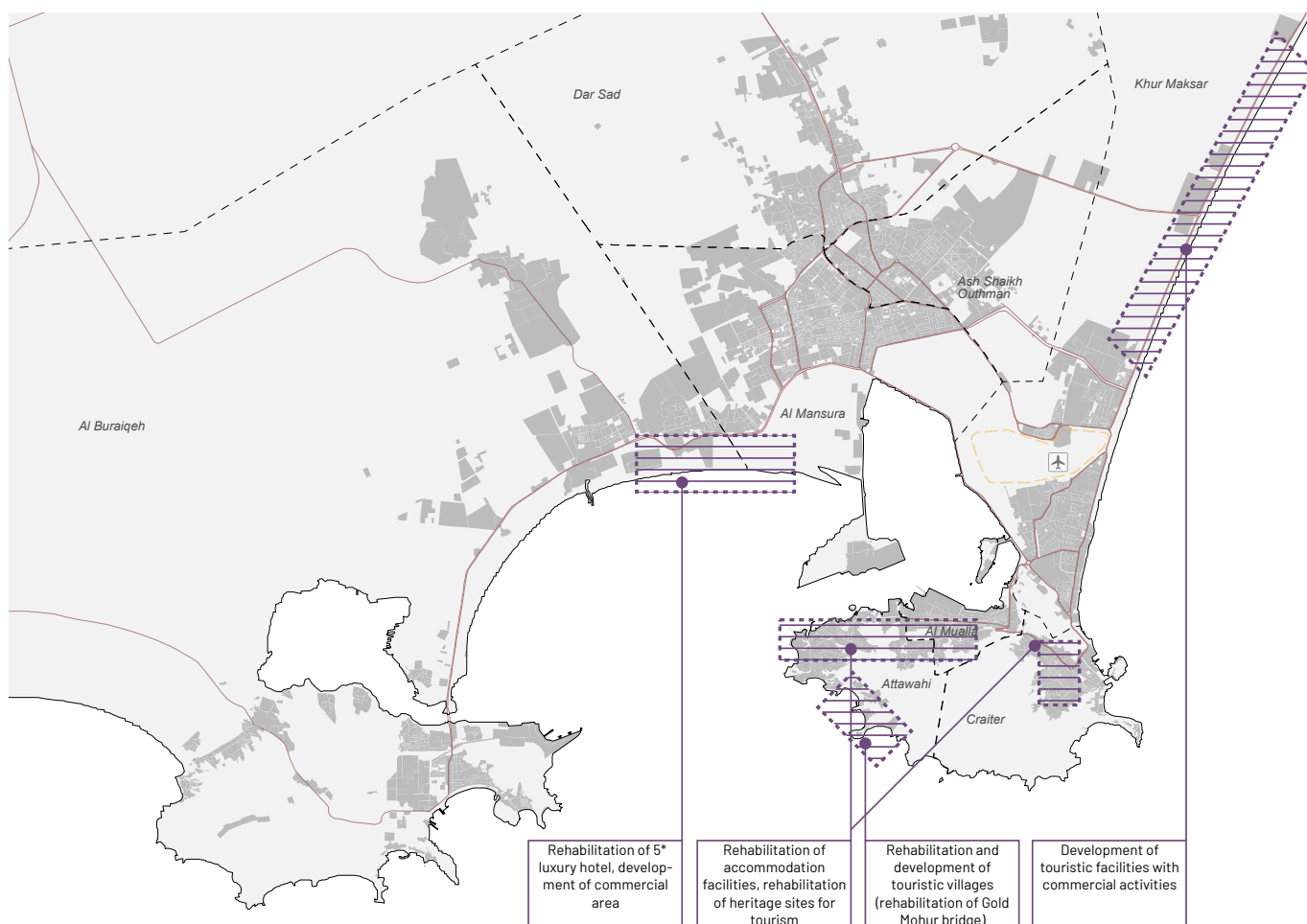
Although the conflict affected some of the heritage sites in Aden, neglect against culture and heritage and lack of management of the heritage sites and antiquities were considered the major cause of damages. Additionally, even though about 65% of Aden's population is youth, young men and women are not given enough opportunities, particularly in education and employment.

- **Put heritage at the centre of a future Aden.**

Aden has a proud past in recognizing its heritage, for example with the construction of the first museum in the Arab States in the 1830s. Although conflict has damaged some sites, the majority of damages is the result of longstand neglect, including demolition of mosques as a result of investments, development of informal settlements close or within heritage sites, lack of authority/accountability that leads to a lack of maintenance (esp. after 2015). Loss of documents, archival records, electronic databases, and lack of specialized equipment and knowhow necessary for conservation projects, reduce access and pose a clear threat to the preservation of cultural heritage. Reshape the regular urban planning process so that it recognizes heritage as one of the key drivers of economic growth and as focal point of Aden's identity.



Figure 2: Prince of Wales pier © Khaled Mashaba



Map 1.10 Tourism: strategic projects for the touristic sector

ANNEX F – STRATEGIC RECOVERY PRIORITIES

- **Support the rehabilitation of the tourism sector**

While access to facilities – places of worship, museums, theaters, and cultural institutions – remains open, sector experts indicate that it is limited. Furthermore, the supporting tourism infrastructure (e.g. hotels) has been severely damaged and virtually revenue from tourism-related activities has been lost, with massive unemployment in this sector as a result. However, there are a lot of potential cultural heritage sites, for example in Little Aden (No. 8 and 9 on the map), that can attract tourists. Areas such as #14 the proximity to the coast would attract tourists who would like to enjoy the beautiful beach. The beach and small islands near the coast has a potential to develop villas and hotels to attract a large number of tourists (#14).

- **Youth development programmes**

From 2015-2018 the unemployment rate in the private Yemen was estimated to be approximately 65%, as a lot of employees, particularly women and youth, were let go. Consequently, youth should be at the centre of any capacity development programme.

Location	No. of schools	Estimated cost (USD)
Crater District	12	1,813,000
Khormaksar District	7	2,032,000
Tawahi District	12	1,938,000
Al Mualla District	11	1,612,000
Mansura District	22	3,231,000
Sheikh Othman District	17	3,654,000
Dar Saad District	27	3,174,000
Al Buraiqah District	32	7,181,000
TOTAL	140	24.635.000

Table 7 Education sector: Cost estimation for rehabilitation and expansion as reported by Aden Education Directorate – Ministry of Education (MoE)



Figure 3: Aden University graduates © Murad Abdo/Xinhua

