State of Yemeni Cities 2020
This project was generously funded by the European Union and its Instrument contributing to Stability and Peace (IcSP).

UN-Habitat would like to thank the Joint Research Centre for their technical support in developing damage assessments and land-use mappings for the city of Aden.

Cover photo:
Sana’a City - UN-Habitat
State of Yemeni Cities 2020
Overall project supervision: Wael Al-Ashab
Project coordinator: Ivan Thung
National coordinators: Samira AlShawesh, Mohammed Zain.
Report analysis, writing, and finalisation: Synne Bergby, Ida Lien (Urban-A)
GIS and maps: Tommaso Cossu
Lay-out: Promozone

Academic contributions:

- Aden University Team (covering analysis on Aden, Al Hawtah, Zinjibar, Taiz, and Al Mukalla)
  Prof. Dr. Saleh Mohammed Mubarak
  Arch. Eng. Wiam Saleh Mubarak
  Prof. Dr. Hassan Mahmood Ali Al Hadithi
  Dr. Kadri Abdulbaki Ahmed
  Dr. Gamal Mohammed Bawazir
  Abu Al Gheth  Gameel Mohammed
  Dr. Mohamed Zaid A. Karim
  Dr. Muhammed Ali Muqbel
  Dr. Zaki Mohammed Othman
  Dr. Ali Abdo Saleh
  Prof. Dr. Ali Ahmed Alsagaf

- Sana’a University Team (covering analysis on Sana’a, Sa’dah, Ibb, Al Hodeidah, and Marib)
  Khalil Abdulwhab Nasher Al-Yosofy
  Wael Abdulmogheni Mohammed Alaghbari
  Abdulla Abdulkader Ahmed Noman
  Ali Mohammed Shatter Mothana
  Bikis Ali Abdulla Zabara
  Suhair Ali Ahmed Atef

  Ummah University Team
  Dr. Kadri Abdulbaki Ahmed
  Dr. Gamal Mohammed Bawazir
  Abu Al Gheth  Gameel Mohammed

- Urban Housing & Land property
- Urban Regional Planning & Urban Infrastructure
- Urban Housing & Land Property
- Urban Environment & Climate Change
- Economy & Finance
- Gender & Youth Empowerment
- Gender/Youth and inclusion of Yemeni Cities

The development of the State of Yemen Cities report would not have been possible without the financial support from the European Union. The work built on a collaborative effort by government and university partners, including city level analysis provided by the University of Aden and the University of Sana’a, and national and regional staff of the United Nations Human Settlements Programme (UN-Habitat).

The report was developed with data from the seven UN-Habitat City Profiles developed with contributions from iMMAP and UNESCO. Key informants and community focal persons who contributed to the City Profiles have contributed with valuable insight at the city and neighbourhood levels which has been important in this report. Furthermore, the report draws on input from civil society and sector experts who have contributed with key data, as well as review of the national report. We would like to thank the Civilian Impact Monitoring Project and the Yemen Data Project who have contributed with data to understand the conflict impact on the cities and residents, as well as Dr. Rukhsana Mohammed Ismail, Eng. Mohammed Bin Mohammed Moqbel, Eng. Arwa Humadi, and Eng. Niyazi Ghaleb.
Foreword

The report comes at a critical moment in one of the most difficult moments in the history of Yemen. The country remains in the worst humanitarian crises in the world, with an estimated 80 percent of the population in need. Our cities have become the locus of many of these challenges: destruction, displacement, and poverty across all of the population. But cities also offer the best opportunities to intervene positively.

This report examines the challenges of ten Yemeni cities across seven sectors, many of which stem from the crisis, but some of which were already apparent before the war, when rapid population growth strained cities beyond the capacity of our systems to manage it.

Now, the situation in Yemeni cities continues to change at a rapid pace, with new challenges facing our people every day. Although it is too early to determine the trajectory and impact of COVID-19 in Yemen, it is likely that the pandemic will have a devastating effect on an already extremely vulnerable population.

People are suffering, from the fighting that has dragged on for years, but also from the impact that the fighting has had on Yemeni cities. Water, healthcare, sanitation, education, electricity, housing — these are the most basic requirements for a decent life, yet now inaccessible for many.

But the Yemeni people are social, resilient and care deeply about supporting the most vulnerable in difficult times. Yemeni cities have also proved to endure, building on a rich history, both material and immaterial, that give a solid foundation for emerging better out of this crisis.

We therefore hope that the report can provide the basis for true multi-sectoral programming, and help chart a pathway towards urban recovery. I am also calling to the national and international community to take the recommendations for urban recovery presented in this report to heart, taking certain and steady steps towards the revival of Yemeni cities.

Wa’el Al Ashab
Country Representative UN-Habitat Yemen
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/

Disclaimer 2
Acknowledgements 4
Foreword 5
Contents 6
Abbreviations 10

Executive Summary 12
Definitions 14

Introduction 15
Structure of the report 16
Urban Recovery Framework 16
Methodology 17
Selection of ten case cities 17
City boundaries 17
Population data 18
Population data caveats 18
Primary data collection 18
Key Informant Interview (KII) 18
Community Focal Point (CFP) 18
Economic activities maps 18
Nightlight data 19
Damage Assessment 19
Urban Recovery Framework 19

Context 22
The 10 case cities featured in this report 24
Sana’a – Capital and primate city 24
Aden – Economic capital and centre of south and major seaport 24
Ta’iz - industrial hub on the fault line between north and south 25
Ibb – agricultural centre in the highlands 25
Al Mukalla – Important fishing port 26
State of Yemeni Cities

Ma’rib city – a city of relative stability and rapid growth 26
Al Hodeidah – port city of the north 27
Sa’dah City - historically important city on the trade route to Saudi Arabia 28
Zinjibar – Agricultural hub on the South coastal plain 29
Al Hawtah – Agricultural city serving Aden 29
Interlinked conflicts 30
Political landscape 32
Religious and Tribal affiliations 32
Yemen’s development path 33

Population and Demographics 35
Population development in Yemen 35
Urbanisation 35
Urban growth: the case of Aden 41
Age distribution 41
Youth 42
Gender 43
Displacement 44
Refugees, asylum seekers and migrants 46
Minorities 47

Governance 48
Introduction 49
Legal and regulatory framework 50
Decentralisation 50
Local governance elections and governance 52
Public spending & finance 52
Women’s empowerment 53
Civil Society for women: the examples of Ta’iz 53
Youth representation 54
Civil society 54

Social Cohesion & Protection 55
Introduction 55
Security and control in cities 57
Public Discontent 58
Availability of Small Arms and other Weapons 58
Shrinking protection space in Yemeni cities 58
The Impact of the Conflict on Children 59
Protection Concerns for Women 61
Inhospitable host environments, tenure insecurity and SGBV risks heightened for IDPs in cities 62
People with disabilities 64
Minorities in the City: the case of the Muhamasheen (marginalized) 65
Legal mechanisms and documentation 65
Social Safety Nets 65

Economy 67
Macroeconomic context Yemen 67
Economic activities and linkages 68
### Economic sectors
- Agriculture, Agro-economy and value chains 73
- Fishery 75
- Oil 75
- Industry and commerce 77
- Tourism 79
- Informal sector 79
- Effect of war 79
- Employment 81
- Youth unemployment 83
- Child labour 83
- Migration, displacement, and urban growth 84
- Poverty and inequality 84
- Food security 84
- Women in the economy 85
- Remittance 86

#### Housing, Land and Property
- Introduction 88
- Land and Housing Legislation in Yemen 88
- Land administration 89
- Land and housing acquisition 90
- Building Permits 91
- Housing Sector 91
- Access to Affordable and Adequate Housing 91
- Informal landownership and housing 92
- Informal areas and Slums 92
- Upgrading of informal areas and affordable housing construction 94
- Land and Property Disputes 96
- Rental law No 22 97
- Land Dispute Resolution 98
- Increased pressure on HLP rights following the conflict 98
- Explosive remnants of war 98
- Discrimination against women and minority groups 99

#### Basic and Social Services
- Institutional and Legal Framework 103
- Health Infrastructure and Operational Capacity 103
- Disease Outbreaks 106
- Women and health 106
- Covid-19 107
- Malnutrition 107
- Mental Health 109

#### Education
- The education system of Yemen 110
- Water 112
- Yemen’s urban water supply and sanitation sector 112
- Urban water provision 113
<table>
<thead>
<tr>
<th>CONTENTS</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sanitation</td>
<td>116</td>
</tr>
<tr>
<td>Solid Waste Management</td>
<td>117</td>
</tr>
<tr>
<td>Energy</td>
<td>118</td>
</tr>
<tr>
<td>Electricity supply</td>
<td>118</td>
</tr>
<tr>
<td>Renewable Energy</td>
<td>120</td>
</tr>
<tr>
<td>Transportation</td>
<td>123</td>
</tr>
<tr>
<td>Environment and Climate Change</td>
<td>124</td>
</tr>
<tr>
<td>Climate</td>
<td>124</td>
</tr>
<tr>
<td>Natural Disasters</td>
<td>126</td>
</tr>
<tr>
<td>Air Pollution</td>
<td>130</td>
</tr>
<tr>
<td>Preservation of local ecosystems</td>
<td>130</td>
</tr>
<tr>
<td><strong>Cultural Heritage</strong></td>
<td>134</td>
</tr>
<tr>
<td>A cultural heritage under threat</td>
<td>134</td>
</tr>
<tr>
<td>Damage to cultural heritage sites</td>
<td>135</td>
</tr>
<tr>
<td>Overview table</td>
<td>136</td>
</tr>
<tr>
<td>Looting of antiques and cultural assets</td>
<td>139</td>
</tr>
<tr>
<td>Current usage of heritage buildings</td>
<td>139</td>
</tr>
<tr>
<td>Environmental degradation</td>
<td>139</td>
</tr>
<tr>
<td>Management and maintenance</td>
<td>139</td>
</tr>
<tr>
<td>UNESCO heritage sites</td>
<td>140</td>
</tr>
<tr>
<td>The cultural heritage of Yemeni cities – the example of Sana’a</td>
<td>140</td>
</tr>
<tr>
<td>Historic Town of Zabid</td>
<td>141</td>
</tr>
<tr>
<td>Old Walled City of Shibam</td>
<td>141</td>
</tr>
<tr>
<td>Sacotra Archipelago</td>
<td>142</td>
</tr>
<tr>
<td><strong>Synthesis of damage assessments</strong></td>
<td>143</td>
</tr>
<tr>
<td>Impact on Cities</td>
<td>144</td>
</tr>
<tr>
<td>Nightlight change</td>
<td>154</td>
</tr>
<tr>
<td><strong>Recommendations for Urban Recovery</strong></td>
<td>149</td>
</tr>
<tr>
<td>Introduction</td>
<td>149</td>
</tr>
<tr>
<td>Findings: The impact of the conflict and-pre crisis stressors to Yemeni cities</td>
<td>149</td>
</tr>
<tr>
<td>From shock absorption towards transformation - Eight goals for urban Yemen</td>
<td>150</td>
</tr>
<tr>
<td><strong>Annexes</strong></td>
<td>157</td>
</tr>
<tr>
<td>List of participant in verification workshops</td>
<td>158</td>
</tr>
<tr>
<td>List of Figures</td>
<td>159</td>
</tr>
<tr>
<td>List of Tables</td>
<td>161</td>
</tr>
<tr>
<td>Abbreviation</td>
<td>Full Form</td>
</tr>
<tr>
<td>--------------</td>
<td>-----------</td>
</tr>
<tr>
<td>ACT</td>
<td>Aden Container Terminal</td>
</tr>
<tr>
<td>AFZ</td>
<td>Aden Free-Trade Zone</td>
</tr>
<tr>
<td>AQAP</td>
<td>Al-Qaeda in the Arabian Peninsula</td>
</tr>
<tr>
<td>AWD</td>
<td>Acute Watery Diarrhea</td>
</tr>
<tr>
<td>CARPO</td>
<td>Center for Applied Research in Partnership with the Orient</td>
</tr>
<tr>
<td>CBOs</td>
<td>Community Based Organisations</td>
</tr>
<tr>
<td>CBY</td>
<td>Central Bank of Yemen</td>
</tr>
<tr>
<td>CCCM</td>
<td>Camp Coordination and Camp Management</td>
</tr>
<tr>
<td>CFP</td>
<td>Community Focal Points</td>
</tr>
<tr>
<td>CIMP</td>
<td>Civilian Impact Monitoring Project</td>
</tr>
<tr>
<td>CRPD</td>
<td>Convention on the Rights of Persons with Disabilities</td>
</tr>
<tr>
<td>CSO</td>
<td>Central Statistical Organization</td>
</tr>
<tr>
<td>CSOs</td>
<td>Civil Society Organizations</td>
</tr>
<tr>
<td>DAESH</td>
<td>al-Dawla al-Islamiya fil Iraq wa al-Sham (Islamic State in Iraq and al-Sham, ISIS)</td>
</tr>
<tr>
<td>DEM</td>
<td>Digital Elevation Maps</td>
</tr>
<tr>
<td>DNA</td>
<td>Damage Needs Assessment</td>
</tr>
<tr>
<td>DTM</td>
<td>Displacement Tracking Matrix</td>
</tr>
<tr>
<td>EECR</td>
<td>Emergency Employment and Community Rehabilitation</td>
</tr>
<tr>
<td>EOSC</td>
<td>Economic Observatory for Studies and Consultations</td>
</tr>
<tr>
<td>EPA</td>
<td>Environment Protection Authority</td>
</tr>
<tr>
<td>ERWs</td>
<td>Explosive Remnants of War</td>
</tr>
<tr>
<td>FAO</td>
<td>Food and Agriculture Organization</td>
</tr>
<tr>
<td>FGC</td>
<td>Female Genital Cutting</td>
</tr>
<tr>
<td>GALSUJ</td>
<td>The General Authority for Land Survey and Urban Planning</td>
</tr>
<tr>
<td>GAM</td>
<td>Global Acute Malnutrition</td>
</tr>
<tr>
<td>GBV</td>
<td>Gender Based Violence</td>
</tr>
<tr>
<td>GCM</td>
<td>Global Climate Model</td>
</tr>
<tr>
<td>GDP</td>
<td>Gross Domestic Product</td>
</tr>
<tr>
<td>GDRSC</td>
<td>Gender Development Research and Studies Center</td>
</tr>
<tr>
<td>GEF</td>
<td>Global Environment Facility</td>
</tr>
<tr>
<td>GGGI</td>
<td>Global Gender Gap Index</td>
</tr>
<tr>
<td>GHGs</td>
<td>Greenhouse Gases</td>
</tr>
<tr>
<td>GIA</td>
<td>General Investment Authority</td>
</tr>
<tr>
<td>GII</td>
<td>Gender Inequality Index</td>
</tr>
<tr>
<td>GOAM</td>
<td>General Organization for Antiquities and Museums</td>
</tr>
<tr>
<td>GoY</td>
<td>Government of Yemen</td>
</tr>
<tr>
<td>HDI</td>
<td>Human Development Index</td>
</tr>
<tr>
<td>HF</td>
<td>Health Facilities</td>
</tr>
<tr>
<td>HH</td>
<td>Households</td>
</tr>
<tr>
<td>HRP</td>
<td>Humanitarian Response Plan</td>
</tr>
<tr>
<td>ICRC</td>
<td>International Committee of the Red Cross</td>
</tr>
<tr>
<td>ICZM</td>
<td>Integrated coastal zone management</td>
</tr>
<tr>
<td>IDMC</td>
<td>Internal Displacement Monitoring Centre</td>
</tr>
<tr>
<td>IDPs</td>
<td>Internally Displaced Persons</td>
</tr>
<tr>
<td>IED</td>
<td>Improvised Explosive Device</td>
</tr>
<tr>
<td>IHL</td>
<td>International Humanitarian Law</td>
</tr>
<tr>
<td>IHRL</td>
<td>International Human Rights Law</td>
</tr>
<tr>
<td>ILO</td>
<td>The International Labour Organization</td>
</tr>
<tr>
<td>INGOs</td>
<td>International Non-Governmental Organisations</td>
</tr>
<tr>
<td>IOM</td>
<td>International Organisation for Migration</td>
</tr>
<tr>
<td>IPCC</td>
<td>International Panel on Climate Change</td>
</tr>
<tr>
<td>IRC</td>
<td>International Rescue Committee</td>
</tr>
<tr>
<td>JRC</td>
<td>Joint Research Centre (of the European Commission)</td>
</tr>
<tr>
<td>KII</td>
<td>Key Informant Interviews</td>
</tr>
<tr>
<td>LAEO</td>
<td>Literacy and Adult Education Organization</td>
</tr>
<tr>
<td>LAL</td>
<td>Local Authority Law</td>
</tr>
<tr>
<td>LCs</td>
<td>Local Councils</td>
</tr>
<tr>
<td>LNG</td>
<td>Liquefied Natural Gas</td>
</tr>
<tr>
<td>MCLA</td>
<td>Multi-Cluster Location Assessment</td>
</tr>
<tr>
<td>mcm</td>
<td>million cubic meter</td>
</tr>
<tr>
<td>MENA</td>
<td>Middle East and North Africa</td>
</tr>
<tr>
<td>MoE</td>
<td>Ministry of Education</td>
</tr>
<tr>
<td>MoHESR</td>
<td>Ministry of Higher Education and Scientific Research</td>
</tr>
<tr>
<td>MoLA</td>
<td>Minister of Local Authorities</td>
</tr>
<tr>
<td>MoPIC</td>
<td>Ministry of Planning and International Cooperation</td>
</tr>
<tr>
<td>MoPW</td>
<td>Ministry of Public Works</td>
</tr>
<tr>
<td>MoTEVT</td>
<td>Ministry of Technical Education and Vocational Training</td>
</tr>
<tr>
<td>MSF</td>
<td>Médecins Sans Frontières</td>
</tr>
<tr>
<td>MWE</td>
<td>Ministry of Water and Environment</td>
</tr>
<tr>
<td>SCMCHA</td>
<td>Supreme Council for the Management and Coordination of Humanitarian Affairs</td>
</tr>
<tr>
<td>NAPA</td>
<td>National Adaptation Program of Action</td>
</tr>
<tr>
<td>NCAR</td>
<td>National Center for Atmospheric Research</td>
</tr>
<tr>
<td>NCDC</td>
<td>National Climatic Data Center</td>
</tr>
<tr>
<td>NCEI</td>
<td>National Centers for Environmental Information</td>
</tr>
<tr>
<td>NCSA</td>
<td>Yemen’s National Capacity Self-Assessment</td>
</tr>
<tr>
<td>NDC</td>
<td>National Dialogue Conference</td>
</tr>
<tr>
<td>NFI</td>
<td>Non-Food Items</td>
</tr>
<tr>
<td>NGOs</td>
<td>Non-Governmental Organisations</td>
</tr>
<tr>
<td>NHDS</td>
<td>National Health and Demographic Survey</td>
</tr>
<tr>
<td>NLP</td>
<td>National Land Policy</td>
</tr>
<tr>
<td>NOAA</td>
<td>National Oceanic and Atmospheric Administration</td>
</tr>
<tr>
<td>NRC</td>
<td>Norwegian Refugee Council</td>
</tr>
<tr>
<td>Acronym</td>
<td>Full Form</td>
</tr>
<tr>
<td>---------</td>
<td>-----------</td>
</tr>
<tr>
<td>NSDHEY</td>
<td>National Strategy for the Development of Higher Education</td>
</tr>
<tr>
<td>NSES</td>
<td>National Strategy for Environmental Sustainability</td>
</tr>
<tr>
<td>NWRA</td>
<td>National Water Resources Authority</td>
</tr>
<tr>
<td>OCHA</td>
<td>United Nations Office for the Coordination of Humanitarian Affairs</td>
</tr>
<tr>
<td>OHCHR</td>
<td>Office of the United Nations High Commissioner for Human Rights</td>
</tr>
<tr>
<td>PCDP</td>
<td>Port Cities Development Program</td>
</tr>
<tr>
<td>PCEP</td>
<td>Public Corporation for Electric Power</td>
</tr>
<tr>
<td>PDRY</td>
<td>People’s Democratic Republic of Yemen</td>
</tr>
<tr>
<td>PEDL</td>
<td>Public Eminent Domain Law</td>
</tr>
<tr>
<td>PPCR</td>
<td>Pilot Program for Climate Resilience</td>
</tr>
<tr>
<td>PTSD</td>
<td>Post-Traumatic Stress Disorder</td>
</tr>
<tr>
<td>RECREEE</td>
<td>Regional Center for Renewable Energy and Energy Efficiency</td>
</tr>
<tr>
<td>SDGs</td>
<td>Sustainable Development Goals</td>
</tr>
<tr>
<td>SFD</td>
<td>Social Fund for Development</td>
</tr>
<tr>
<td>SLREA</td>
<td>The State Lands and Real Estate Authority</td>
</tr>
<tr>
<td>SNC</td>
<td>Yemen’s Second National Communication</td>
</tr>
<tr>
<td>SPC</td>
<td>Supreme Political Council</td>
</tr>
<tr>
<td>SPI</td>
<td>Standard Precipitation Index</td>
</tr>
<tr>
<td>STC</td>
<td>Southern Transition Council</td>
</tr>
<tr>
<td>TFPM</td>
<td>Task Force on Population Movement</td>
</tr>
<tr>
<td>TNC</td>
<td>Third National Communication</td>
</tr>
<tr>
<td>TWG</td>
<td>Population Technical Working Group</td>
</tr>
<tr>
<td>UAE</td>
<td>United Arab Emirates</td>
</tr>
<tr>
<td>UNDP</td>
<td>United Nations Development Programme</td>
</tr>
<tr>
<td>UNESCO</td>
<td>United Nations Educational, Scientific and Cultural Organisation</td>
</tr>
<tr>
<td>UNFPA</td>
<td>United Nations Population Fund</td>
</tr>
<tr>
<td>UN-Habitat</td>
<td>United Nations Human Settlements Programme</td>
</tr>
<tr>
<td>UNHCR</td>
<td>United Nations High Commissioner for Refugees</td>
</tr>
<tr>
<td>UNICEF</td>
<td>United Nations Children’s Fund</td>
</tr>
<tr>
<td>UNOPS</td>
<td>United Nations Office for Project Services</td>
</tr>
<tr>
<td>UNOSAT</td>
<td>United Nations Operational Satellite Applications Programme</td>
</tr>
<tr>
<td>UNSC</td>
<td>UN Security Council</td>
</tr>
<tr>
<td>UNWOMEN</td>
<td>United Nations Entity for Gender Equality and the Empowerment of Women</td>
</tr>
<tr>
<td>URF</td>
<td>Urban Recovery Framework</td>
</tr>
<tr>
<td>WASH</td>
<td>Water Sanitation and Hygiene</td>
</tr>
<tr>
<td>WCRP</td>
<td>World Climate Research Program</td>
</tr>
<tr>
<td>WECS</td>
<td>Wind Energy Convertor System</td>
</tr>
<tr>
<td>WFP</td>
<td>World Food Programme</td>
</tr>
<tr>
<td>WHO</td>
<td>World Health Organization</td>
</tr>
<tr>
<td>WHZ</td>
<td>Weight-for-Hight z scores</td>
</tr>
<tr>
<td>WWTP</td>
<td>Wastewater Treatment Plants</td>
</tr>
<tr>
<td>YAR</td>
<td>Yemen Arab Republic</td>
</tr>
<tr>
<td>YEAP</td>
<td>Youth Employment Action Plan</td>
</tr>
</tbody>
</table>
The State of Yemen Cities report represents the first cross-sector, multi-level analysis of Yemeni cities. In order to examine the ‘state’ of cities in Yemen, a strategic selection of ten cities was made to identify shared and unique trends, needs, challenges and opportunities, and to learn from a range of urban contexts. Overall, the report demonstrates the adverse effect of the conflict and how this has manifested across cities due to a number of factors. It further suggests how the analysis can be used as a foundation for identifying strategic entry points for reconstruction, recovery, and longer-term transformative response in urban areas.

Key findings:

- Yemen has a rich history of city making, which is reflected in its significant and diverse cultural heritage. Over time, cities with strategic geographical locations on the coast or main traveling routes, have grown in importance and size, while political shifts, rural-to-urban migration, and recently largescale displacement has further steered urbanisation patterns. Although still predominantly a rural country, with an estimated around 30 percent of the population living in cities, Yemen experiences rapid urbanisation fuelled by high natural birth rates and continued rural-to-urban migration. The 27 largest cities have an estimated population of more than 8.9 million people. Sana’a, the primate city in Yemen with a population of 3.4 million, is more than three times larger than the second largest city, Aden, and larger than the combined population for the nine other cities covered in this report.

- Informal and sprawling areas in and around cities, as a result of unmanaged urban growth, are characterised by limited access to basic and social services and infrastructure, poor housing conditions, socio-economic divisions and competition for resources. Already prior to the conflict, there were persistent inequalities in the housing market, where the formal market exclusively serviced high- and middle-income groups, leaving few formal options for lower-income groups. Conflict and precariously environmental conditions combined with poor construction methods, a lack of infrastructure, and building in flood or land/rockslide-prone areas have further exacerbated the situation, where large-scale damage and destruction to residential buildings have substantially increased the number of people in need of shelter or who are suffering from inadequate shelter conditions.

- About half of urban IDPs and almost all rural IDPs own property. However, once displaced, there is a high risk that property that remains in the area of origin becomes occupied by neighbours, militias, sold to new owners or divided through inheritance claims, making it difficult to reclaim the property upon return. The possibility of contamination of housing and land with landmines or other explosive remnants of war is a further obstacle to return.

- Weak regulatory mechanisms, the absence of a transparent land registry and system for authenticating land deeds and documents, formal or customary, as well as the absence of a national cadastre, complex and overlapping legal systems for land and tenure, tribal claims, land grabbing, corruption, and the use of land to drive political agendas, have resulted in increased and deepening land disputes. Although land disputes in urban areas should normally be settled in court, failures of the formal system make people reliant on customary or informal mechanisms for land resolution even in cities.

- Some Yemeni cities have been hit particularly hard by the fighting between warring fractions, leading to a large number of displacements, injuries and casualties. Particularly cities which represent strategic nodes have endured significant fighting, devastation, casualties, and displacement over the course of the current conflict. Al Hodeidah, with its critical port facilities, has experienced the by far largest destruction of built structures.

An estimated 3.6 million people are currently displaced in Yemen, with 1.3 million people displaced and 900,000 arriving in the ten cities featured in this report. As a result, some cities have to (re-)integrate a large number of IDPs who are ‘pulled’ by the relative safety, perceived livelihood opportunities and access to services. The majority settle in rented accommodation or with host communities, while others live in dispersed settlements, squatted buildings, or collective centres as a result of a ‘no-camp’-policy by the government. Relocation often takes place to inhospitable environments, characterised by social stigma, marginalisation, discrimination, harassments, and tenure insecurity, at times fuelled by conflicts over assistance and access to local services between host communities and new arrivals. Other cities have lost a large number of people, who leave behind empty houses, fragmented social fabrics, and vacant stores and workplaces. The influx of people to certain city areas has contributed to increased rental prices, overcrowding, competition over resources, and repeated displacements.

Protection needs in Yemen are increasing while social cohesion is reducing. This is oftentimes more pronounced in urban areas due to the fluidity of the ethnic composition within cities resulting from multiple waves of displacements. To compensate, a system of patronage networks appears to have been established to gain access to government and people in positions of power. Gender Based Violence (GBV), harassment, violence, and limitation of rights, including access to services, as well as negative coping mechanisms such as early forced marriage, forced labour, and the recruitment of child soldiers, are increasingly observed, while social divisions are deepened and unequal access to social safety nets increased.

The urban population in the ten cities is young, with more than half the population under 25 years old, reflecting the estimated national median age of 20.2 years. There is a majority of men in the ten cities, with the highest average share of men between 20-24 years, where work prospects are likely to attract more young men than other demographic groups to cities. At the same time, young people are facing very high under- and unemployment, while also lacking formal channels to participate and potentially influence their
State of Yemeni Cities

Access to, availability, and the operational capacity of health services has been severely impacted by the conflict. The economic structure of Yemeni cities is diverse, but has been severely affected by the conflict. Additionally, the rapid depreciation of the Yemeni rial, plummeting prices of food and other essential goods, and a sharp drop in remittance coupled with major cuts in donor support for humanitarian aid, is further driving the economy towards collapse.

The economic structure of Yemeni cities is diverse, but has historically been driven by agriculture, fishery, and oil. While agriculture is still a large sector in many cities, Yemeni cities have limited access to land and property. Coupled with limited domestic and social service delivery in Yemen has severely impacted the economy, the economic conditions of Yemeni cities is still to a large degree dependent on the conflict. The Yemeni economy is still very fragile and requires support from the international community.

Conflict has significantly affected the trend of changing socio-economic and political circumstances. Areas which were once densely populated informal areas, and those without adequate services have been severely affected by the conflict, rendering large share of the population without essential healthcare. While women remain excluded from formal decision making roles, there is a rising trend of women taking up social roles traditionally held by men, including different types of activities in supporting local populations. However, increased use of intimidations, threats, excessive force, arrests, and abductions by state and non-state actors are complicating their operations.

Civil Society Organisations (CSOs) have played a key role in supporting local populations. However, increased use of intimidations, threats, excessive force, arrests, and abductions by state and non-state actors are complicating their operations.

Yemen has the lowest water per capita availability in the world, and groundwater extraction exceeding replenishment capacity. Urbanisation is adding additional strain on limited water supplies, and the quality of water will be significantly affected by the conflict. The conflict has resulted in people resorting to private water tankers and result in people resorting to private water tankers. Urbanisation is adding additional strain on limited water supplies, and the quantity and quality of the water supply in the cities will be significantly affected by the conflict.

The economic structure of Yemeni cities is diverse, but has historically been driven by agriculture, fishery, and oil. While agriculture is still a large sector in many cities, Yemeni cities have limited access to land and property. Coupled with limited domestic and social service delivery in Yemen has severely impacted the economy, the economic conditions of Yemeni cities is still to a large degree dependent on the conflict. The Yemeni economy is still very fragile and requires support from the international community.

Conflict has significantly affected the trend of changing socio-economic and political circumstances. Areas which were once densely populated informal areas, and those without adequate services have been severely affected by the conflict, rendering large share of the population without essential healthcare. While women remain excluded from formal decision making roles, there is a rising trend of women taking up social roles traditionally held by men, including different types of activities in supporting local populations. However, increased use of intimidations, threats, excessive force, arrests, and abductions by state and non-state actors are complicating their operations.

Civil Society Organisations (CSOs) have played a key role in supporting local populations. However, increased use of intimidations, threats, excessive force, arrests, and abductions by state and non-state actors are complicating their operations.

Yemen has the lowest water per capita availability in the world, and groundwater extraction exceeding replenishment capacity. Urbanisation is adding additional strain on limited water supplies, and the quality of water will be significantly affected by the conflict. The conflict has resulted in people resorting to private water tankers. Urbanisation is adding additional strain on limited water supplies, and the quantity and quality of the water supply in the cities will be significantly affected by the conflict.
Definitions

Urban Recovery Framework (URF) refers to the approach developed to guide urban-specific dimensions of post-conflict recovery, serving to fill a significant gap in the international system’s ability to support countries affected by conflict. The URF is an enabling institutional and policy framework and related programming to support resilient urban recovery at scale, and the renewal of the social contract.

Shock is a sudden upsetting or surprising event. In this report, shock and stresses refers to the full range of independent and inter-dependent, human induced, geophysical, and biological shocks and stresses, such as conflict, drought and Covid-19.

An urban area refers to a town or a city characterised by densely built neighbourhoods and interlinked services, infrastructure, and economic activities. In this document urban refers to both city areas, and rural or semi-urban villages with certain traits and city-like systems, or towns and villages interconnected as part of larger urban agglomerations. Urban areas are composed on heterogeneous communities, often comprised of people with different backgrounds and origin, a high degree of mobility, often with intra- and inter-communal inequalities and competition for resources and income.

Systems refers to both physical and societal systems across scales and stakeholders, including infrastructure, economy, and governance. In cities, a number of often interlinked or inter-dependent systems across scales are at work, where a change in one system will also impact other systems. Examples of systems can relate to the built environment, basic services such as water, waste management, and energy, or social services like the health and educational systems.

Reconstruction is defined as the medium and long-term rebuilding and sustainable restoration of resilient infrastructure, services, housing, facilities, and livelihoods required for the full functioning of a community or a society affected by a disaster.

Recovery involves the restoring or improving of livelihoods and health, as well as economic, physical, social, cultural and environmental assets, systems, and activities of a disaster-affected community or society.

Absorptive phase signifies the extent to which systems are able to withstand shocks and stresses, through 1) prevent that the event is leading to immediate loss of functionality and / or 2) minimize the loss of functionality in one system, and thereby preventing loss of functionality in other systems, to minimize and address immediate needs.

Adaptive phase signifies the degree to which the systems are recovering from shocks and stresses by integration of risk reduction measures and ways to ‘build back better’ through learning and improvement of systems and revitalization of livelihoods, economies, and the environment.

Transformative phase signifies the extent to which the systems have increased resilience through learning, and ‘bounce forward’ through the restoration of systems and revitalization of livelihoods, economies, and the environment.

Internally Displaced Persons (IDPs): persons or groups of persons who have been forced or obliged to flee or to leave from their homes or places of habitual residence, in particular as a result of or in order to avoid the effects of armed conflict, situations of generalized violence, violations of human rights or natural or human-made disasters, and who have not crossed an internationally recognized State border (this includes individuals who moved within their locations, across locations, within their districts, across districts, within governorates, and across governorates).

Refugee: a person who, “someone who is unable or unwilling to return to their country of origin owing to a well-founded fear of being persecuted for reasons of race, religion, nationality, membership of a particular social group, or political opinion.” (UNHCR)

Returnee: Refugee or IDP who has now returned to their place of habitual residence where they used to live prior to being displaced, irrespective of whether they have returned to their former residence or to another one.

Migrant: any person who has crossed State borders on a voluntary basis for economic or other personal reasons.

Host Community: non-displaced population of a location where there is a high density (minimum of 8 percent) of displaced individuals (Refugees, IDPs, and returnees). Could be up to 11 percent as per OCHA standards.
In 2020, Yemen entered its sixth year of conflict. Since the start of the conflict, the country has faced substantial and continued political, economic, environmental, security, and social challenges. Violence, displacement, poverty, disease and now COVID-19 coupled with donor fatigue are all contributing to a rapidly deteriorating situation. From 2015 to 2019, more than 233,000 Yemenis were killed as a result of fighting and the humanitarian situation. During the same period, the economy contracted by more than 50 percent. The population is suffering from a range of challenges, many with distinct urban dimensions. These includes extremely high levels of poverty and unemplyment rates, low education attainment, poor infrastructure, scarcity of water, limited to no access to basic and social services, and largescale damage to infrastructure, businesses, and the housing stock. Certain cities have been key areas of contestation with targeted fighting and damages, and all cities have experienced large population fluctuations as a result of displacement. Rapid population increase places additional strain on limited urban infrastructure, housing, services, and markets, with increased competition over scarce resources and income generating opportunities amongst the most vulnerable groups. Yemen is still predominantly rural, however high population growth, rural to-urban migration, and displacement where people seeking to urban areas of relative safety and livelihood options has contributed to urban expansion and has shifted the relative size and position of Yemeni cities.

The situation in Yemen can be described as a chronic emergency with overlapping and intertwining stresses and shocks - and fluctuations back and forth between in-crisis and post-crisis periods. For many Yemenis, the dependency on humanitarian assistance is open ended. Compounded by stresses and shocks to already vulnerable systems, immediate prospects for peace in Yemen remain uncertain. The shocks often have widespread, cascading, and irreversible effects, each adding stresses and exacerbating weaknesses within existing systems. The continuously reconfiguration and weakening of environmental, socio-political, and economic systems, whereby resilience is reduced over time, calls for a high degree of flexibility in how reconstruction, recovery, and longer-term development are approached. It must further ensure the capacity to respond to interconnected and unpredictable reactions in systems resulting from shocks and stresses. As an example, at the time of writing this report, there is great uncertainty of the immediate and longer-term effects of COVID-19 in Yemen and internationally. Based on the grave humanitarian situation, a collapsing economy and deficient systems, the impact of COVID-19 is expected to be extremely high. This is particularly the case in urban areas, which will experience the highest number of outbreaks and most severe measures and consequences. This requires a solid understanding of which systems and communities will be the most affected and how, both in the immediate and longer term, in order to identify and prioritise efficient and timely urban response, recovery, and development.

Against this backdrop, the State of Yemen Cities report shows the impact of the conflict on urban areas, as well as some of the most urgent and increasing needs, challenges, opportunities, drawing on examples from ten Yemeni cities. Rather than representing the ten largest cities in Yemen, these cities have been selected based on several criteria, to gauge how the conflict have impacted differently on a range of city typologies. The data and analysis presented thus highlights findings specific to the various cities, and linkages and commonalities between cities. As such, the report gives a nuanced picture of urban realities spanning national to local levels. The following ten Yemen cities are featured in more detail in this report:

- Sana’a
- Aden
- Ta’iz
- Ibb
- Al Mukalla
- Ma’rib
- Al Hodeidah
- Sa’dah
- Zinjibar
- Al Hawtah

The State of Yemen Cities is intended as a source of information on the current state of Yemeni cities, and as a starting point for a further structured process for support and engagement with national and local partners to set urban priorities and programming goals moving forward. The information and analysis in the report contribute towards a diagnostic, or shared understanding, of key challenges, gaps, capacities, and areas of opportunities in Yemeni cities. Based on an Urban Recovery Framework (see Methodology and below for more on the Urban Recovery Framework theory and method) the report provides a foundation for identifying immediate, medium, and longer-term urban needs and priorities in a holistic manner for conflict-resolution, reconstruction, recovery, and transformation.

The report builds on city level analysis conducted by the Universities of Aden and Sana’a as well as the seven UN-Habitat City Profiles developed for the following cities: Aden, Al Hawtah, Al Hodeidah, Sa’dah, Sana’a, Ta’iz, and Zinjibar. The City Profiles were produced in parallel to this report, and provide insight into the political, social, and economic conditions on a city and sub-city level. Whereas the State of Yemen Cities gives a cross-city and overarching analysis drawing on the information from the City Profiles, the City Profiles should be consulted for more granular information on specific cities. Many of the cities are facing the same key challenges and constraints, but the analysis in the State of Yemen Cities report also suggests how and why the conflict and systems’ shocks are produced or manifests differently across cities.

53 The selection criteria include economic and political importance, estimated level of damage, percentage of IDPs proportional to the population, duration of displacement of IDPs, population size, number of informal settlements, coverage of urban services, international support, government response to needs and funding. This is further elaborated in the Methodology Chapter.
**Structure of the report**

The analysis and diagnostics section of the report is structured under the following chapters: 1) Context; 2) Population & Demography; 3) Governance; 4) Social Cohesion & Protection; 5) Economy; 6) Housing, Land, and Property; 7) Basic & Social Services; 8) Environment & Climate Change; 9) Cultural Heritage; and 10) Structural Damages from Air Attacks. Given the pervasive information gaps and unreliable data for Yemen, including very limited urban-specific data available, the report should not be read as a comprehensive overview of urban challenges or needs in Yemen. The analysis does, however, provide important insight into the situation in Yemeni cities, and serves to highlight areas to focus potential interventions and further investigations.

A synthesis of chapter 1-10 is developed through a cross-sector, multi-level and phased analysis in the final chapter 11) Urban Recovery Framework. As such, chapter 11 suggests potential entry points for reconstruction, recovery, and longer-term development and how this may inform urban recovery across actors to withstand ('absorb'), recover ('adapt') and bounce forward ('transform') from the current conflict at the local levels.

**Urban Recovery Framework**

The Urban Recovery Framework (URF) is an enabling institutional and policy framework including related programming to support resilient urban recovery at scale, and the renewal of the social contract (see Methodology chapter for more on the theoretical basis and methodology for the URF used in this report). Contrary to most post-crisis tools, which are organized on purely sectoral lines without recognising their inter-dependence in urban areas, the URF recognizes the need for both immediate response and longer-term adaptive and transformative measures in localised response in cities, based on needs, gaps, and priorities.

The State of Yemen Cities report represents the first step in a larger consultative and collaborative process to develop an URF for Yemeni cities. As described above, the report provides both an analysis of urban needs, capacities and gaps in chapter 1-10, and an outline for a multi-sector, multi-stakeholder approach to identify and streamline priorities across the humanitarian-development-peace nexus in chapter 11. The development and finalisation of the URF requires a participatory process involving different stakeholders and key actors operating in Yemeni cities, with strong involvement by local authorities. As part of this process, and in order to estimate risk and anticipate future needs, scenarios can be developed. This will aid the understanding of how immediate response will affect longer-term recovery and development, and how future shocks and stresses will impact urban systems. Because prioritisation of response and ‘punctual’ urban recovery efforts will have an impact across temporalities, planning and development of programming for short, medium- and longer-term response must be done in parallel. In other words, response to immediate needs must be linked to longer-term adaptive and transformative measures. As such, the URF aligns with and can feed into the UN Strategic Framework to further bolster the “basic social services, socio-economic resilience, social cohesion and protection and peacebuilding” to promote “sustainable solutions to the humanitarian needs of the country, to ensuring a robust recovery process once the circumstances allow” through identifying ways of addressing vulnerabilities, modifying stresses and facilitating opportunities in urban areas across levels and temporalities.

---

Methodology

With the current conflict, and the difficulties of accessing certain areas specifically and information more generally, there are pervasive gaps in reliable urban data. For this report, information gaps have been partly filled by triangulation of various data sources, including secondary data review (reports, data sets etc.), interviews of Community Focal Points (CFPs), Key Informant Interviews (KIIs), remote sensing, damage verification on-ground, and urban profiling and recovery workshops. The CFP survey, KIIs (conducted in Aden, Ta’iz, Al Hawtah and Zinjibar) and damage verification on the ground was conducted at the city level, feeding into both the respective city profiles as well as this report. Cities in the north were not accessible for CFPs and KIIs due to operational constraints.

The University of Sana’a and the University of Aden have developed analysis on each of the ten cities this report focuses on. The universities contributions have been developed by researchers within their respective fields, building on their insight and knowledge of the Yemen context as well as unpublished academic material to create two technical versions of the report. These technical versions report developed by the University of Aden and Sana’a have been verified by a number of city and government officials and sector experts. Please see Annex 1. Three consultants have then synthesized the material of the technical versions and city profiles into one report.

Selection of ten case cities

UN-Habitat, in collaboration with national partners from the north and the south of Yemen, selected a sample of 10 cities to be studied for city profiles. Rather than selecting the seven largest cities in the country, the selection also includes smaller cities that are significant due to the impact of the conflict on these cities, concentration of Internally Displaced Persons (IDPs), economic significance etc. Together with the largest cities in the country, the ten cities thus provide an insight into the broader urban situation in Yemen.

City boundaries

The most relevant administrative level for cities is the “district”, defined by Yemen Administrative Boundaries overview from the Central Statistics Organisation (CSO). Cities usually comprise one or several districts. For the purpose of this report, cities were defined based on districts encompassing the continuously built-up urban areas, allotting the full district to a city if the built-up covers a significant area of a district.

Population data

The last population census in Yemen was conducted in 2004. High rural-urban migration, and high number of internally displaced persons renders the population projections based on the 2004 CSO data unreliable, and exact figures on the current population at the country or city level is therefore not available. For the purpose of this report, data from the Population Technical Working Group (TWG) have been used. The TWGs were formed in Sana’a and Aden, comprising the CSO, International Organisation for Migration (IOM), United Nations Population Fund (UNFPA), United Nations Office for the Coordination of Humanitarian Affairs (OCHA), National Authority for the Management and Coordination of Humanitarian Affairs and Disaster Recovery (SCMCHA), and the Ministry of Planning and International Cooperation (MOPIC) including the Executive Unit. The adopted methodology for developing IDP estimates was collection of IDP data flow figures (from district to district), and cross-checking between different sources (IOM Displacement Tracking Matrix (DTM), SCMCHA, Executive unit) in cases multiple datasets for the same location were available. This resulted in a countrywide IDP movement database. The database was then used to calculate the estimated population in each district using the formula below. Both working groups agreed on the final results on 3 Dec 2018.

Estimated Population = Projected population + (IDPs inflow - IDPs outflow)

Population projections for 2019 are calculated from the 2004 census data, and IDP data from the TWG estimates. The population data for the cities and governorates in this report has been produced based on the TWG data, where the defined district areas have been used to calculate the population for each city.
Population Data

Population data caveats

After the last 2004 census, a number of significant changes have taken place that will bias the estimated population figures. Data caveats include:

I. Growth rate: Different population growth rates were applied to the 2004 census data based on past growth to calculate population projections. Comparing the population growth rate used across the governorates from 2004 to 2017, the average growth rate is 2.78 percent, with the lowest growth rate in Amran (1.4 percent) and the highest in Al Maharah (4.13 percent). There is no distinction in population growth rate between urban and rural areas within each governorate. Given that Yemen has a largely rural population, the country would likely have had high urbanisation rates as a result of rural-urban migration irrespective of the conflict. This reflects global trends, where cities attract rural populations due to proximity to services and job markets. Adjusting the CSO 2019 data for IDP movements will improve the accuracy of the population figures taking into consideration the impact of the conflict and pull factors that will attract migrants to urban areas, however the urban population growth rate is still expected to be an underestimate of the actual growth rate.

I. High mortality rates: The population estimates do not account for population losses as a direct or indirect result of the conflict, including conflict causalities, or increase of mortality rates due to famine, cholera etc. From 2015 to 2019 more than 233,000 persons are estimated to have been killed by conflict and the humanitarian crises.

I. Informality: Many displaced persons as well as migrants and returnees move to informal areas in the cities, where they settle amongst the existing community. Many might therefore not be registered and reflected in formal statistics, thus contributing to an underestimation of the urban population.

I. City boundaries: For the purpose of aggregating district level data produced for humanitarian purposes to city-level data, a mapping of districts to cities has been performed using the method described above.

I. Rural-Urban movement fluidity: Work opportunities in cities draw heads of households, predominantly men, to cities while their families often stay behind to look after their agricultural crops. The men frequently return to their village to take part in agricultural activities. To assess whether these migrants are urban or rural residents, and how this is captured in the data is difficult but will have an impact on the estimated population.

I. Potential changes in household size: Internal Displacement Monitoring Centre (IDMC) adjusted the household size they use in their calculations from 6.5 to 6 in 2018 after consultations with a number of partners, which gives a more conservative estimate of total population. In overcrowded urban areas, and in areas hosting IDPs with host communities, the household size might be underestimated in the data.

I. Disaggregation by sex and age: The population figures by sex and age for each city is estimated using CSO projected population for 2019 based on 2004 census data. This data does not account for variations of sex and age composition as a result of displacement and migration. As 76 percent of IDPs are estimated to be women and children, adding displacement figures disaggregated by sex and age would likely change the demographic composition.

Primary data collection

Key Informant Interview (KII)

KIs were undertaken for UN-Habitat’s urban profiling project in Al Hawtah, Aden, Taiz and Zinjibar the data of which was subsequently used in this report. Amongst the informants were current or retired government officials, representatives from various professions, and business leaders, selected based on their experience and knowledge of the cities. Intersectoral interviews were conducted focused on access to services (education, healthcare, infrastructure etc.), housing, safety, security and so forth.

Community Focal Point (CFP)

In the same four cities community leaders and elders were interviewed based on their long-standing ties to and knowledge of their community needs. The unit of analysis used was the district, and several CFPs per district were interviewed. The CFPs provided information regarding their communities’ needs, as well as about the quality, availability, and accessibility to basic services. The data is accessible on: https://yemenportal.unhabitat.org/neighborhood-profiles/

The data collected from the KIs and CFPs has in the State of Cities report been used to triangulate other data sources, and to provide further nuance to findings on the situation in the studied cities. It should be noted that while the KIs and CFPs ideally would have a broad representation, most informants interviewed either in official capacity or due to their role as ‘leaders’ in the local communities, were male and did not include youth and children. This data might therefore not represent stressors felt by women, youth, and children in a sufficient manner.

Number of CFPs and KIs

<table>
<thead>
<tr>
<th></th>
<th>CFP</th>
<th>KI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aden</td>
<td>50</td>
<td>50</td>
</tr>
<tr>
<td>Taiz</td>
<td>76</td>
<td>50</td>
</tr>
<tr>
<td>Al Hawtah</td>
<td>37</td>
<td>11</td>
</tr>
<tr>
<td>Zinjibar</td>
<td>25</td>
<td>21</td>
</tr>
</tbody>
</table>

Economic activities maps

The maps showing economic activities in the studied cities, found in the sub-chapter on Economic activities and linkages, have been developed based on data from the European Commission’s Joint Research Centre (JRC). From this data, commercial and industrial areas were highlighted, and industrial labels were cross-checked, and the seemingly greatest economic activities labelled on the map. Where the main industrial areas were not covered by the land use mapping from JRC, yet visible on google maps, other open sources, such as OpenStreetMap and Wikimapia, were used.
**Urban Recovery Framework**

This section explains the theoretical basis and methodology for the URF as it applies to this report.

The URF has been used to structure this State of Yemen cities report as follows: analysis and diagnostics in chapter 1-10 and the cross-analysis and identification of leverage points for interventions across phases in chapter 11. The information and analysis in the report provide a starting point and suggested framework for a complete URF for Yemen. As explained in the Introduction chapter, the development of a URF requires a participatory process involving different stakeholders and key actors operating in Yemeni cities, with strong involvement from local authorities. This report should therefore be seen as a contribution to this process, and is not in itself an urban recovery framework.

The URF has been developed to guide urban-specific dimensions of post-conflict recovery, serving to fill a significant gap in the international system’s ability to support countries affected by conflict.

The URF can be described as an enabling institutional and policy framework and related programming to support resilient urban recovery at scale, and the renewal of the social contract.

As such, the URF recognizes the need for both immediate response and longer-term adaptive and transformative measures in cities, taking into account existing needs, gaps and priorities. Most post-crisis tools (eg. Recovery and Peace-building Assessment, Transitional Results Framework) are organized on purely sectoral lines without recognising their inter-dependence in urban areas. Nor do they necessarily take into account local dynamics – including that economic, social, cultural and political dimensions are manifested differently in different cities and across different scales of human settlements, thus requiring the ability to locally tailor approaches to recovery. The URF’s intended purpose is to help planning efforts of national and decentralised government, as well as compliment frameworks such as the forthcoming United Nations Sustainable Development Cooperation Framework, United Nations Strategic Framework for Yemen (2017-2019) the existing Recovery and Peacebuilding Assessments (RPBAs), and the Humanitarian Response Plans (HRP).

**Damage Assessment**

Damage assessments were conducted using 2019 satellite imagery, with support of the JRC and the United Nations Operational Satellite Applications Programme (UNOSAT). The assessment has been used to estimate the degree of physical damage inflicted on infrastructure and services for the cities by comparing pre-crisis imagery to 2019 imagery. The categories were harmonized to: “destroyed”, “severe” and “moderate” damage.

Satellite damage assessments only captures damaged structures when there is visible damage to the roof. For that reason, the actual damage on the ground will be significantly higher. Earlier validations on the ground suggested that actual damages on the ground can be in the range of 3-8 times higher. For that reason, and given that satellite imagery usually can be obtained before access on the ground can be secured in a conflict setting, satellite damage assessments are valuable for comparisons between cities, and as an indication of the distribution of damages within neighbourhoods. For example, while the damage assessment indicates that the total number of damaged buildings in Aden were 1,693, local government authorities suggest that over 12,000 structures have been damaged.

The damage assessment was conducted for Aden, Sana’a, Al Hodeidah, Ta’iz, Sa’ada, Al Hawtah and Zinjibar.

**Nightlight data**

Nightlight analysis has been used as an indicator for the impact of the war. The light emitted during night-time has been recorded and analysed using satellite imagery, to capture and compare light emitted during the night over time periods. The Earth Observation Group, National Oceanic and Atmospheric Administration (NOAA) National Centers for Environmental Information (NCEI) observations at 15-arc-seconds, or roughly 450 by 450 meters is used in this report.

Nightlight data

Nightlight data has been used as an indicator for the impact of the war. The light emitted during night-time has been recorded and analysed using satellite imagery, to capture and compare light emitted during the night over time periods. The Earth Observation Group, National Oceanic and Atmospheric Administration (NOAA) National Centers for Environmental Information (NCEI) observations at 15-arc-seconds, or roughly 450 by 450 meters is used in this report.

**The resilience curve**

The resilience curve is a useful conceptual tool to explain how shocks and stresses affect urban systems. Figure 1 illustrates how resilience changes in response to a shock. This covers the different phases from anticipating and preparing for a shock, to the absorption, adaptation, and transformation stages once the shock hits the systems. The diagram suggests that a city’s resilience depends on the prior functionality of its systems, the degree of preparedness in anticipation of a shock, as well as which systems a shock is targeting to the greatest extent. Given that a city responds to shocks based on its systems’ intrinsic capacities and deficiencies, the resilience of cities will vary and diverge depending on the type of shock and which systems are hit the hardest.

For the purpose of this report, the resilience curve can be understood as a function of Yemeni cities’ systems, illustrated as the cities’ DNA. As such, the resilience curve showcases the combined loss in functionality in urban systems in Yemen once shocks and stresses occur. The illustration both show the combined resilience of cities, as well signifies that there might be unique variations between cities and their ability to absorb, adapt and transform in response to shock. This theoretical framework has been used as a starting point for identifying strengths and weaknesses in urban systems across the cities featured in the report. Once urban systems are identified and key mechanisms for how shocks will manifest or be mitigated have been detected, entry points and priorities for interventions and activities to respond to and recover from shocks through absorption, adaptation and transformation emerge. This requires bolstering the most critical systems on the three tracks of response (conflict-resolution, recovery, and longer development) in parallel to address immediate needs (such as emergency health care and water provision) while simultaneously working on root-causes and systems strengthening (such as securing adequate housing and basic service delivery). This will build better linkages and facilitate more effective prioritisation of responses in complex urban environments across temporalities, levels, actors, and initiatives.
Urban Recovery Framework

The Urban Recovery Framework (Figure 2) has two main parts:

1. **Diagnostics and analysis, and**
2. **Identification of Absorptive, Adaptive, and Transformative priorities.**

3. **Multi-Sector Diagnostic and Analysis:**
   - The diagnostics and analysis are carried out as a foundation for a shared understanding of the current situation. This involves information gathering and analysis focused on:
     1. Identifying current and anticipating future needs in urban areas;
     2. Mapping current capacities across systems, stakeholders, and actors to address the needs;
     3. Mapping of ongoing work in urban areas, including what the work is responding to and how;
     4. Identify key gaps in response.

Both the State of Yemen Cities analysis (Chapter 1 to 10) and the urban profiles at city and neighbourhood scales, contribute towards a shared understanding of urban needs and to the information and analysis used for the diagnostics of the URF.

2. **Identifying Absorptive, Adaptive, and Transformative Priorities**

As the resilience curve underscores, risks, and short- and long-term impacts of shocks should be understood as multiple temporalities to be planned for and addressed in parallel. The URF contains the following three categories that accounts for these temporalities:

1. **Absorptive**, responding to immediate needs;
2. **Adaptive**, medium-term response and recovery, including efforts to build-back-better;
3. **Transformative**, longer-term response, including disruptive and “bounce forward” measures.

As highlighted in the diagram, this analysis provides the foundation for multi-sector, multi-stakeholder, area-based frameworks. The URF requires accountability in all phases, including diagnostics, identification of priorities and to develop multi-sector, multi-stakeholder, area-based frameworks. In other words, monitoring and evaluating should be considered an ongoing activity across the URF, rather than something that is done post-implementation.
State of Yemen Cities

July 2020
Yemen is situated at the south-western corner of the Arabian Peninsula, on the crossroads of Africa, the Middle East, and Asia. It is neighboured by Saudi Arabia to the north, Oman to the east, with the Red sea, the Gulf of Aden and the Arabian Sea to its west and south. As Figure 3 illustrates, Yemen’s landscape and topography is varied, and includes narrow coastal plains to the west and south, from which the mountainous interior forming semi-arid highlands arise, as well as desert landscapes in the north-eastern parts of the country. Due to the release of moisture as air moves from the coast and up the highlands a system of highly productive agriculture landscapes, often on man-made terraces, has been established in the central highlands. The highlands also consist of wadis, or seasonal river valleys, which dry up in the winter.

Of the ten cities features in this report, Ibb, Sana’a, Sa’dah, and Ta’iz are located in the mountainous part of Yemen (Figure 4). Yemen’s capital and primate city, Sana’a, has the highest elevation 2,250 metres above sea level (MAMSL). Al Hawtah, north of Aden, is situated in an agricultural plain. Eastwards, the country has a desert landscape, which traditionally has been dominated by nomadic and semi-nomadic herding. Ma’rib, found in this region and away from the most conflict prone and contested areas of Yemen, represents one of the fastest growing cities in the country. Yemen has several large seaports, including Aden which has one of the world’s largest natural harbours, as well as Al Hodeidah, Zinjibar, and Al Mukalla. The Socotra archipelago, which is 250 km long and comprises four islands and two rocky islets known for its biodiversity, also belongs to Yemen.

Figure 2 Topography of Yemen (UN-Habitat 2020)

---

55 NRC, “Repairing Fractured Landscapes: Challenges and Opportunities for Resolving Disputes over Land, Housing, Water and Other Natural Resources in Yemen,” April, 2019.
56 Ibid.
Figure 3 Cities in Yemen (UN-Habitat 2020)
The 10 case cities featured in this report

Sana’a
Capital and primate city
Sana’a is the capital and primate city in Yemen, situated between the Jabal An-Nabi, Shu’ayb and Jabal Tiyal mountains of the Sarawat mountain range, representing the two highest peaks in the Arabian Peninsula. Wedged between these mountains, the city has expanded along a north-south axis.

Being one of the oldest continuously inhabited cities in the world, Sana’a is a historically important centre and capital city. Sana’a came under Ottoman rule first from 1547 – 1629 and then from 1872 until the end of World War I in 1918. Thereafter, Sana’a became the capital of the Mutawakkilite Kingdom of Yemen (MKY), except for a brief period between 1948 and 1962 when Ta’iz replaced it. Following the North Yemen Civil War (1962–1970), Sana’a regained its status as the capital city of the new north Yemen Arab Republic (YAR) (“North Yemen”) and remained the national capital of the Republic of Yemen (RoY) after the unification with the People’s Democratic Republic of Yemen (PDRY) (or “South Yemen”) in 1990.

To accommodate high population growth driven by rural-urban migration, Sana’a has expanded through unplanned and sprawling development. Since 1962, the city has experienced tremendous growth and expanded its urban boundaries from its 3.7 km² medieval core to over 40 km² in the 1970s, and more than 1,600 km² in 2010. In 1983, the Amanat Al Asimah governorate was created within, but distinct from, Sana’a governorate. It is here that the administrative institutions and functions of the capital city, Sana’a, are located. In this report, the boundaries of Sana’a city are defined as the area of Amanat Al Asimah governorate.

Aden
Economic capital and centre of south and major seaport.
Aden is a city and major seaport in the Aden governorate in southern Yemen. Situated approximately 170 km east of the Bab Al Mandeb strait, which connects the Gulf of Aden to the Red Sea, Aden overlooks Somalia across the Arabian Sea. Aden possesses one of the world’s largest natural harbours, with a naturally deep and protected port that allows for the docking of large oil tankers. Its strategic position, just six kilometres from the main East - West shipping routes, have made the city a historically important node in East - West trading networks. For centuries, Aden represented the economic capital of Yemen as the principal passageway.
for commerce passing from Europe, East Africa, the Arabian Peninsula, and East Asia. In the 1950s, the port of Aden was the second busiest harbour in the world, after New York, serving as an important oil storage and refuelling station for tankers passing through the Suez Canal.

After 1967, Aden served as the political capital of the PDRY until unification of Yemen in 1990. With the unification 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).

**Ta’iz**

**Industrial hub on the fault line between north and south**

Ta’iz is located in the interior highlands of Yemen. The city is the administrative capital of Ta’iz governorate and is seen as the gateway to southern Yemen. The city and surrounding areas are home to the Old Medina and its historic monuments, including the newly restored Al Qahira castle, and traditional architecture and landscapes, especially the agricultural terraces on Sabir mountain.

**Ibb**

**Agricultural centre in the highlands**

Ibb city, the capital of Ibb Governorate, is located in central Yemen in the Western highlands. The city is estimated to have been established in the first millennium B.C. and developed during the Ottoman empire. The city is surrounded by green terraces developed on volcanic soil and served by substantial rainfall. Ibb has been known as a tourist destination in Yemen. The city is surrounded by a thick wall enclosing the tall houses. However, over the past three decades, the city has experienced rapid and unmanaged urban growth beyond this, encroaching on agricultural land.

The city is at the frontline of battles between the Government of Yemen (GoY) backed by the Saudi-led coalition, and the Houthis. Since 2015, the city has been under siege where the Houthis control about one third of the city – including the heights overlooking the northern edge of Ta’iz, while the rest is run by the government. Over time the situation in Ta’iz has changed from clashes between government forces and the Houthis, to increasingly internal fighting between various fractions.

---


58 Ibid.


Al Mukalla
Important fishing port

Al Mukalla is a seaport and the capital of Hadhramaut province, located on the Gulf of Aden overlooking the Arabian sea. The port is the third largest in Yemen, situated about 480 km east of Aden and away from the frontlines of the conflict. However, the city was occupied by AQAP during an offensive in early April 2015, making it a new headquarter for the group. However, the government had recaptured Al Mukalla by April 2016.

The total area of Al Mukalla is 1963.05 km², consisting of scattered settlements distributed over a narrow coastal plain. The topography leads to coastal exposures to storms and heavy rainfall flooding and inundation as happened during Chapala cyclone of November 2015 (see Environment and Climate Change).

Ma’rib city – a city of relative stability and rapid growth

Ma’rib city is the capital of Ma’rib governorate. Its location serves as a crossroad between Al Jafe governorate leading to Saudi Arabia to the north, the capital Sana’a approximately 120km to the east, and Al Bayda approximately 280 km to the south. Ma’rib is the start of the main oil pipeline in Yemen connecting the oil refineries in Ma’rib with the offshore terminal at Al-Salif. In addition to oil fields and refinery, Ma’rib is also the key producer of natural gas in Yemen.

Representing a city with relative stability and livelihood opportunities, Ma’rib has attracted a large number of IDPs, and rapidly expanded the size of the city and its productive capacities. Ma’rib’s increased significance as an economic and socio-political pole in the country is unprecedented in its recent history. This is partially a result of relatively successful decentralisation process, which entailed securing access to a share of the governorate’s natural resource revenue.


Al Hodeidah
port city of the north

Al Hodeidah city holds the principal port on the Red Sea. The city is the capital city in Al Hodeidah Governorate, situated in the western part of the country on the Yemeni Tihamah coastal plain. In 1961, the Soviet Union completed the construction of a deep-water port at Ahmadi, which modern facilities enabled the city to become one of the country’s main ports. Before the war, more than 70 percent of Yemen’s food and fuel imports came through the port of Al Hodeidah, accounting for over 40 percent of the nation’s customs income. The port remains crucial for incoming aid, food, and medicines. Given its strategic significance, the city has been at the centre of contestation and conflict, including port operations and parties access to transport goods from the port. In December 2018, the Stockholm Agreement was negotiated by the conflict parties, stipulating a ceasefire which amongst others included withdrawal from Al Hodeidah port. In May 2019, parties withdrew from the port allowing international organisations to finally regain access to the port to supply humanitarian aid.

Al Hodeidah Map. Source: google earth.

---


Sa’dah City
historically important city on the trade route to Saudi Arabia

Sa’dah is the capital city in Sa’dah governorate, located in the northern part of Yemen 243 kilometres north of Sana’a. Sa’dah is on the Al Hajji (pilgrimage) road, and the city has therefore played an important role linking Yemen, with Najd and Hejaz in Saudi Arabia.\(^\text{67}\)

Sa’dah is one of the oldest cities in Yemen; it was founded before the fourth century B.C., as the hub of the Minaean Kingdom of Main.\(^\text{68}\) In modern time, it was the original capital of the Zaydi dynasty of imams (religious-political leaders) of Yemen (AD 897–1962).\(^\text{69}\) In 1636 the Zaydi capital was moved to Sana’a (243 Km away) and Sa’dah declined in national importance, although it for a long time functioned as the administrative centre of the northern part of the country. Sa’dah became the starting point for the military activity of Houthis leading up to the current conflict.\(^\text{70}\)

Sa’dah Map. Source: google earth.
Zinjibar
Agricultural hub on the South coastal plain
Situated in South-Central Yemen, the port city of Zinjibar is the capital city of Abyan Governorate. Zinjibar has long been considered a strategic entry point to Aden, located 60km away. Zinjibar is further in the Abyan Project Delta, an artificial spate irrigation delta comprising approximately 40 thousand hectares of irrigable land. The area was considered to be the most agriculturally productive region in the country.\(^{71}\)

In 2010, the “Battle of Zinjibar” took place between forces loyal to former President Ali Abdullah Saleh and Al-Qaeda in the Arabian Peninsula (AQAP). Over the course of the conflict, the city has seen fierce clashes between warring factions with devastating effects on buildings, infrastructure, electricity, and water networks.\(^{72}\)

Al Hawtah
Agricultural city serving Aden
Al Hawtah is the capital of Lahj governorate, located 30 km north of Aden. Its proximity to mineral rich areas in Yemen has been decisive for its industrial production, for which high-quality reserves of metallic and non-metallic minerals historically has been excavated. The area is further known for its highly fertile valleys.

Al Hawtah was the capital of the Abdali sultanate and later part of the British protectorate due to its strategic location and to protect its interests in Aden. The city has a cultural history of being home to artists, including poets and composers, who created music, poems, and songs specific to Lahj culture.\(^{73}\)

Al Hawtah was captured by AQAP in March 2015 as the group advanced towards Aden, gaining full control of the city, but AQAP’s presence since dwindled and disappeared completely by 2018.\(^{74}\)

The city has continued to be a fighting ground, predominantly between the pro-Hadi forces and the Southern Transitional Council forces.

\(^{71}\) A Noaman et al., “Adapting to Water Scarcity for Yemen’s Vulnerable Communities,” 2007.


Interlinked conflicts

The conflict, which started in 2011 and intensified in 2014 and 2015, has caused thousands of fatalities, massive physical damage and destruction, large-scale displacement, and contributed to the country’s economic collapse. The situation, where an estimated 24.1 million people (80 percent of the population) are in need, remains the worst humanitarian crisis in the world. In 2020, the country entered its sixth year of conflict, with substantial and continued security, political and economic challenges. Sustained violence, displacements, poverty, diseases and now COVID-19, coupled with increased donor fatigue, is causing the situation to rapidly deteriorate. Compounded by continuous threats and shocks to already vulnerable systems, immediate prospects for peace remain uncertain at best.

The conflict has heavily impacted urban as well as rural Yemen. Cities have endured destruction of infrastructure and buildings, displacement to and from the cities, and socio-economic and political disruption, where governance, basic and social services, infrastructure, land, housing, property, economies and the environment have been affected. It is worth noting that Yemen has a long history of tribal practice of mediation, negotiation and conflict management, where the protection of non-combatants in ‘sacred enclaves’ where different tribes and parties can interact safely, is commonly practiced in urban areas throughout Yemen.

In January 2020 the Panel of Experts on Yemen submitted its final report to the Security Council of the United Nations (S/2020/70). The report underlines the complexity of the conflict, where different fighting fractions and events are interlinked and connected to the extent where the different conflicts no longer can be clearly separated based on internal or external actors or events. Looking to the two main parties, the Houthis and the GoY, the development over the course of 2019 does not seem to have brought either party closer to conclusive military victory, or towards a political settlement. Key drivers of the multiple conflicts and fighting taking place are control of revenue streams and armed violence in the areas where armed groups are present.

---


79 Ibid.
Figure 4 shows the development of the frontline between the Houthi’s and the GoY over the course of 2015 to 2019. As illustrated on the map, which cities that have been contested has shifted over the same period. In 2015, several of the more eastward located cities where contested, including Ma’rib, Ta’iz and Ibb. While Ta’iz continues to be under siege, a general trend of a shifting frontlines towards the west coast has been observed. In 2017, attention shifted to Al Hodeidah as the GoY initiated an attempt to recapture the city from the Houthis. The port is key to control import and export from Yemen, including aid, weapons, food, and fuel. Despite brokering the Stockholm agreement in December 2018 the parties to the conflict have failed to fully demilitarize Al Hodeidah, and there continuous to be breaches to the truce agreement, resulting in amongst others continued high number of casualties. During the same period, Ma’rib has become one of the relatively safer cities in Yemen, although this status is increasingly under pressure.

Most of the southern governorates have an active AQAP presence. Of the cities featured in the report, Al Mukalla and Zinjibar have been key cities for AQAP. Since 2014 al-Dawla al-Islamiya fil Iraq wa al-Sham (Daesh) has also increased its presence in Yemen, however from 2016 only had a reduced presence in the central-east district.

Figure 4 Mapped areas of control as of July 2019 (Redrawn from ECFR).  

<table>
<thead>
<tr>
<th>City</th>
<th>Under control as of July 2020:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sana’a</td>
<td>Houthi</td>
</tr>
<tr>
<td>Aden</td>
<td>Contested between GoY and STC</td>
</tr>
<tr>
<td>Ta’iz</td>
<td>Largely government with exception of the northern area</td>
</tr>
<tr>
<td>Ibb</td>
<td>Houthi</td>
</tr>
<tr>
<td>Al Mukalla</td>
<td>GoY</td>
</tr>
<tr>
<td>Ma’rib</td>
<td>Semi-independent</td>
</tr>
<tr>
<td>Al Hodeidah</td>
<td>Largely Houthi with exception of the southern area</td>
</tr>
<tr>
<td>Sa’dah</td>
<td>Houthi</td>
</tr>
<tr>
<td>Zinjibar</td>
<td>GoY</td>
</tr>
<tr>
<td>Al Hawtah</td>
<td>GoY</td>
</tr>
</tbody>
</table>

Table 1 Governing forces of the selected cities
Political landscape

“Yemen's modern-day political contours took shape at the beginning of the 19th century, when British and Ottoman spheres of control were agreed upon in the north and south. Despite attempts to establish a viable central authority following the unification of North and South Yemen in 1990, the state continues to be divided along these fault lines today. Although there have been periods of relative and partial (regional) stability, the country has rarely experienced a complete absence of violence.”

“North” and “South” Yemen refers to what was formerly Yemen Arab Republic (YAR) and People’s Democratic Republic of Yemen (PDRY). Although the territory of the two parts are changing as the conflict develops, “northern Yemen” is geographically predominantly west, while “southern Yemen” makes up the territory to the south and east in addition to most of the northern border to neighbouring Saudi Arabia. As such, the political and geographical significance of Sana’a in the north and Aden in the south, can help explain the nomenclature which intuitively suggests a north-south divide. North and south Yemen have been characterised by distinct and diverging political and cultural development. In the north the Zaidi theocratic rule, a branch of the Shia Imamiya of Iran, has been a major influence. In the south, Britain’s presence and subsequently the establishment of the only Marxist state in the Arab world have been decisive.

Land is a root cause and key driver of the conflict in Yemen. Land scarcity and the use of land holdings to gain power by tribal elites in the north, and land reforms to restructure the governance of land and resources, including expropriation of land to create state-run farms in the south, has provided the backdrop for further contention and conflict, also after the unification. With the establishment of the Republic of Yemen in 1990, the push to integrate the two economies and two legal systems included new decrees and investment regulations. In the aftermath of the civil war in 1994, reorganisation of land ownership and redistribution of properties in the defeated south was carried out. Through this process, state land was returned both to legitimate previous owners and other people claiming to be “rightful owners” by different ministries. In some cases, the same land was allotted to multiple people who had been loyal supporters of the Sana’a government, including state employees, army officers, and civil servants. Resulting land grievances from this process continue to fuel the conflict to date.

The political landscape in Yemen is fragmented and increasingly complex. Although political parties exist, they are victim of severe repression by various authorities and armed groups controlling different areas across the country. Northern Yemen, including the capital Sana’a, is dominated by the Houthis, while southern Yemen is dominated by the internationally recognized Government of Yemen (GoY), and a smaller part by the United Arab Emirates (UAE)-backed Southern Transition Council (STC). In addition, militant groups including AQAP and Daesh have seized territory in the south. While the frontline of the conflict and thus areas under southern and northern Yemen keeps shifting, several of the cities such as Aden and Al Hodeidah, and Ta’iz hold key strategic positions and continue to be areas of contestation.

Religious and Tribal affiliations

Of Yemen’s population 99 percent is Muslim, of which 35-45 percent are Zaydi Shi’as, while the remaining population are Sunni Muslims. In general, southern Yemen and the coastal areas are dominated by the Shafi’i branch of Sunni Islam (Figure 6). Increasing violent sectarianism between Sunni and Zaidi Shi’a Muslims, and the Sunni militant groups and Shi’a Houthis in particular, as well as the rise of extremist groups such as AQAP and Daesh, are fueling the conflict and deepening religious and social fault lines.

85 NRC, “Repairing Fractured Landscapes: Challenges and Opportunities for Resolving Disputes over Land, Housing, Water and Other Natural Resources in Yemen,” April, 2019.
87 Ibid.
89 Ibid.
Yemen is relatively homogenous in terms of language and ethnicity. Tribal structures are relatively stronger in the northern highlands and weaker in southern Yemen as a result of historic factors. Traditions of community self-help and dispute mediation continue to be important, particularly in rural areas. However, social capital, which is deeply rooted in tribal affiliations, has been eroded over time due to political, social, and economic changes, a process further heightened by the conflict. As areas have been captured and recaptured by different groups at different points in time, the beneficiary apparatus governing these areas have shifted accordingly. This has entailed that different individuals have been favoured by different groups in order to strengthen their political agendas, producing social fragmentation including political disenfranchisement, family vendettas and personal rivalries. The result has been changing social dynamics within communities, with increased social polarisation and unequal and diminishing access to social safety nets. Even if the conflict is brought to an end, local violent disputes may well continue, especially tribal feuds and between armed groups acting as local authorities in their areas.

Yemen’s development path

In 2019, the Human Development Index (HDI) ranked Yemen 177th out of 189 countries, 23 positions lower than in 2014 before the conflict broke out. This ranking reflected low average years of schooling among its population, modest life expectancies and low per capita income, amongst others. Yemen’s rapidly increasing population is faced with the effect of the conflict, including a collapsing economy, extreme shortage of water, destruction of critical health, education, and transportation infrastructure and buildings. By 2017, 48.2 per cent of the population lived in extreme poverty and life expectancy declined by one year. In the same period (2014-2017), the HDI fell nearly 10 per cent, pushing Yemen to 2001 levels. According to the World Food Programme (WFP), 15.9 million people wake up hungry every day, a figure likely to grow to two thirds of the population if food assistance is not sustained.

The situation has broad implications for Yemen’s development path moving forward. While Yemen was not projected to meet any of the Sustainable Development Goals (SDG) targets even in the absence of conflict, Yemen today is falling further behind. The United Nations Development Programme (UNDP) assessment of

---


the impact of war on development in Yemen shows the annual percentage point improvement needed to achieve the 2030 SDG targets under two scenarios: “No Conflict conditions” and “2019 conflict conditions” for a select group of indicators across seven human development SDGs. It should be noted that there are major caveats to measuring these indicators in Yemen due to the lack of data, and that the information is only indicative of the trends. The report explains the severe effect of conflict on Yemen’s development with the following example: “extreme poverty rates would need to be reduced by five percentage points every year from now until 2030 to meet the SDG targets. In a No Conflict Yemen, by comparison, extreme poverty would only need to be reduced by 1.4 percentage points each year to meet the SDG targets. If Yemen is to meet the targets for extreme poverty reduction, poverty rates must decline 3.5 times faster than they would have had to in the absence of conflict—a rate of reduction historically unseen. Under the No Conflict scenario, by comparison, the sustained rate needed to achieve the extreme poverty SDG target would have been just 0.2 percentage points higher than the global average for a given 11-year period.” As such, the report serves to highlight the retrogression in development towards the SDGs in Yemen after five years of conflict, where recovery to pre-conflict levels will require two to three generation, as well as the consequences for medium to long-term development.


98 Ibid, p.41
Urbanisation characterised by rapid growth of selected cities and a population in flux as the conflict continues to impact choices of whether to leave, remain and arrive in cities.

Although still predominantly a rural country, with an estimated around 30 percent of the population living in cities, Yemen is characterized by rapid urbanisation fuelled by high natural birth rates and rural-to-urban migration. This has manifested in urban expansions, sprawl, and growth of informal areas in and around cities. There are currently 27 cities and towns in Yemen with estimated populations close to or exceeding 35,000 inhabitants, including IDPs, with a combined population of 8,908,402. With an estimated population of 3,406,643, Sana’s is three times larger than the second largest city, Aden, confirming its position as the primate city in Yemen.

Conflict patterns and their intensity are decisive for how many IDPs arrive or flee cities. In Yemen, large population fluctuations represent a unique set of challenges, where cities have to (re-)integrate a large number of IDPs who are ‘pulled’ to urban areas for relative safety, livelihood opportunities and access to services, while other cities have lost a large number of people, who leave behind empty houses, fragmented social fabrics and vacant stores and work places.

The urban population is young. In the ten cities studies in this report, more than half the population is under 25 years old, reflecting the estimated national median age of 20.2 years. There is a majority of men in these ten cities, with the highest average share of men between 20-24 years. The prospect of finding work in urban areas is likely to attract more young men than other groups to the cities, further changing the urban demography towards a larger share of young men.

Population development in Yemen

Yemen has the highest population growth rate in the Middle East and North Africa (MENA) region, reaching up to 3.5 percent and recently around 3.2 percent annually. The last census conducted by the Central Statistics Organisation (CSO), the 2004 Population, Housing and Establishment Census, counted 19,685,161 inhabitants. The projection for 2019, based on the 2004 census, was 29,673,271 inhabitants, and further estimated to reach 34 million by 2025. When including net IDPs for all governorates, the total estimated population for 2019 was 29,884,585. This is leaving 211,314 persons unaccounted for, which could be explained by the estimated 233,000 casualties since the start of the conflict (See Social Cohesion & Protection, p.68 for more on civilian and total casualties).

At the same time, the natural growth rate has declined, with a reduction in fertility rates over the past fifteen years. From 1994 to 1997, births per woman decreased from an average of 7.4 births to 6.5 births, and further to 6.1 births by 2004. The 2013 National Health and Demographic Survey (NHDS) indicates further reduction in births, with a birth rate of 4.4 births per female in 2013 (3.2 births per female in urban areas compared to 5.1 births per female in rural areas).

Urbanisation

The urban population in Yemen has been increasing with a selected number of cities receiving the large bulge of the growth. This is in part a result of rural-urban migration, reflecting global urbanisation trends. Yemen, together with Sudan, Somalia, Djibouti and the Comoros, make up the southern tier countries of the Arab region. Urbanization in these countries is lower than in the rest of the Arab region. In 2010, more than 70 percent of the Yemeni population was estimated to live in rural areas, and in 2019 the estimate is 69.2 percent.

Table 3 provides an overview of the data sources used to produce the population data for this report as well as caveats to keep in mind.

Table 3

<table>
<thead>
<tr>
<th>Source</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ibid.</td>
<td>101</td>
</tr>
<tr>
<td>Ibid.</td>
<td>102</td>
</tr>
<tr>
<td>Ibid.</td>
<td>103</td>
</tr>
</tbody>
</table>

Figure 6 Urbanisation trends in the Arab region (UNDESA).

mind when reading the information. Table 4 gives the population estimates for 2019 for the ten cities, broken down by districts studied for this report. Unless specified otherwise, the population figures used in this report are referring to Table 4 data, where population projections are adjusted for IDP movements.

The selection of districts that defines the city boundaries for each city, listed in the table, has taken into consideration the functional urban areas, thus it includes districts characterized by urban continuity as well as social and/or economic dependency (e.g. satellite villages around a city) (see Selection of ten case cities in the Methodology chapter).

Table 3 Data source and caveats for population data for the ten selected cities

<table>
<thead>
<tr>
<th>Dataset</th>
<th>Population estimate / year</th>
<th>Source</th>
<th>Methodology</th>
<th>Caveats</th>
</tr>
</thead>
<tbody>
<tr>
<td>Population projections</td>
<td>6,622,209</td>
<td>CSO</td>
<td>Projections of 2004 census data, applying an growth rate between 1.4 and 4.13 percent and a household size of 6.5</td>
<td>- Baseline outdated and pre-dates the conflict - National growth rate likely to be below urban growth rate - Displacement and return to city areas as a result of the conflict have further increased urbanisation rates</td>
</tr>
<tr>
<td></td>
<td>(2019)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Population estimation</td>
<td>6,204,421</td>
<td>Technical working group.</td>
<td>CSO projected population (2019) - IDPs who left the district + IDPs who came to the district.</td>
<td>As above +</td>
</tr>
<tr>
<td></td>
<td>(2019)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>In Sana’a: IOM, UNFPA,</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>OCHA, SCMCHA and CSOs;</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>In Aden: IOM, OCHA,</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>CSOs, MOPIC including</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Executive Unit</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

For Sana’a and Aden, the boundaries of the governorates (Amanat Al Asimah and Aden) are the same as for the cities. For both Sana’a and Aden, some of the built-up area seems to ‘spill’ into the bordering districts along the main transportation axis. The population in these areas, which could be counted as part of the cities’ populations, is thus not captured within the city boundaries used in this report, and as such the estimated number of people in each of the two cities will be slightly lower than if these additional areas were included. The advantage of defining city boundaries as the same as the governorate is that data on a governorate level also apply to the city. This is particularly useful because most data in Yemen is reported on the governorate level.

State of Yemeni Cities

Source: Yemen Population Estimates 2019-HNO/HRP. See methodology chapter for an explanation of how this data has been generated.
<table>
<thead>
<tr>
<th>CITY</th>
<th>GOVERNORATE</th>
<th>District</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ibb city</td>
<td>Ibb</td>
<td>Ibb</td>
</tr>
<tr>
<td>Ibb city</td>
<td>Al Mashannah</td>
<td>Al Mashannah</td>
</tr>
<tr>
<td>Ibb city</td>
<td>Al Dhibah</td>
<td>Al Dhibah</td>
</tr>
<tr>
<td>Ibb city</td>
<td>Old City</td>
<td>Old City</td>
</tr>
<tr>
<td>Ibb city</td>
<td>Shuab</td>
<td>Shuab</td>
</tr>
<tr>
<td>Ibb city</td>
<td>Aziz</td>
<td>Aziz</td>
</tr>
<tr>
<td>Ibb city</td>
<td>Al Dhihar</td>
<td>Al Dhihar</td>
</tr>
<tr>
<td>Ibb city</td>
<td>As-Sabah</td>
<td>As-Sabah</td>
</tr>
<tr>
<td>Sa'dah City</td>
<td>Al Asimah</td>
<td>Al Asimah</td>
</tr>
<tr>
<td>Sa'dah City</td>
<td>Old City</td>
<td>Old City</td>
</tr>
<tr>
<td>Sa'dah City</td>
<td>Shuab</td>
<td>Shuab</td>
</tr>
<tr>
<td>Sa'dah City</td>
<td>Aziz</td>
<td>Aziz</td>
</tr>
<tr>
<td>Sa'dah City</td>
<td>Al Dhihar</td>
<td>Al Dhihar</td>
</tr>
<tr>
<td>Sa'dah City</td>
<td>As-Sabah</td>
<td>As-Sabah</td>
</tr>
<tr>
<td>Sa'dah City</td>
<td>Old City</td>
<td>Old City</td>
</tr>
<tr>
<td>Sa'dah City</td>
<td>Shuab</td>
<td>Shuab</td>
</tr>
<tr>
<td>Sa'dah City</td>
<td>Aziz</td>
<td>Aziz</td>
</tr>
<tr>
<td>Sa'dah City</td>
<td>Al Dhihar</td>
<td>Al Dhihar</td>
</tr>
<tr>
<td>Sa'dah City</td>
<td>As-Sabah</td>
<td>As-Sabah</td>
</tr>
<tr>
<td>Sa'dah City</td>
<td>Old City</td>
<td>Old City</td>
</tr>
<tr>
<td>Sa'dah City</td>
<td>Shuab</td>
<td>Shuab</td>
</tr>
<tr>
<td>Sa'dah City</td>
<td>Aziz</td>
<td>Aziz</td>
</tr>
<tr>
<td>Sa'dah City</td>
<td>Al Dhihar</td>
<td>Al Dhihar</td>
</tr>
<tr>
<td>Sa'dah City</td>
<td>As-Sabah</td>
<td>As-Sabah</td>
</tr>
<tr>
<td>Sa'dah City</td>
<td>Old City</td>
<td>Old City</td>
</tr>
<tr>
<td>Sa'dah City</td>
<td>Shuab</td>
<td>Shuab</td>
</tr>
<tr>
<td>Sa'dah City</td>
<td>Aziz</td>
<td>Aziz</td>
</tr>
<tr>
<td>Sa'dah City</td>
<td>Al Dhihar</td>
<td>Al Dhihar</td>
</tr>
<tr>
<td>Sa'dah City</td>
<td>As-Sabah</td>
<td>As-Sabah</td>
</tr>
<tr>
<td>Sa'dah City</td>
<td>Old City</td>
<td>Old City</td>
</tr>
<tr>
<td>Sa'dah City</td>
<td>Shuab</td>
<td>Shuab</td>
</tr>
<tr>
<td>Sa'dah City</td>
<td>Aziz</td>
<td>Aziz</td>
</tr>
<tr>
<td>Sa'dah City</td>
<td>Al Dhihar</td>
<td>Al Dhihar</td>
</tr>
<tr>
<td>Sa'dah City</td>
<td>As-Sabah</td>
<td>As-Sabah</td>
</tr>
<tr>
<td>Sa'dah City</td>
<td>Old City</td>
<td>Old City</td>
</tr>
<tr>
<td>Sa'dah City</td>
<td>Shuab</td>
<td>Shuab</td>
</tr>
<tr>
<td>Sa'dah City</td>
<td>Aziz</td>
<td>Aziz</td>
</tr>
<tr>
<td>Sa'dah City</td>
<td>Al Dhihar</td>
<td>Al Dhihar</td>
</tr>
<tr>
<td>Sa'dah City</td>
<td>As-Sabah</td>
<td>As-Sabah</td>
</tr>
<tr>
<td>Sa'dah City</td>
<td>Old City</td>
<td>Old City</td>
</tr>
<tr>
<td>Sa'dah City</td>
<td>Shuab</td>
<td>Shuab</td>
</tr>
<tr>
<td>Sa'dah City</td>
<td>Aziz</td>
<td>Aziz</td>
</tr>
<tr>
<td>Sa'dah City</td>
<td>Al Dhihar</td>
<td>Al Dhihar</td>
</tr>
<tr>
<td>Sa'dah City</td>
<td>As-Sabah</td>
<td>As-Sabah</td>
</tr>
<tr>
<td>Sa'dah City</td>
<td>Old City</td>
<td>Old City</td>
</tr>
<tr>
<td>Sa'dah City</td>
<td>Shuab</td>
<td>Shuab</td>
</tr>
<tr>
<td>Sa'dah City</td>
<td>Aziz</td>
<td>Aziz</td>
</tr>
<tr>
<td>Sa'dah City</td>
<td>Al Dhihar</td>
<td>Al Dhihar</td>
</tr>
<tr>
<td>Sa'dah City</td>
<td>As-Sabah</td>
<td>As-Sabah</td>
</tr>
<tr>
<td>Sa'dah City</td>
<td>Old City</td>
<td>Old City</td>
</tr>
<tr>
<td>Sa'dah City</td>
<td>Shuab</td>
<td>Shuab</td>
</tr>
<tr>
<td>Sa'dah City</td>
<td>Aziz</td>
<td>Aziz</td>
</tr>
<tr>
<td>Sa'dah City</td>
<td>Al Dhihar</td>
<td>Al Dhihar</td>
</tr>
<tr>
<td>Sa'dah City</td>
<td>As-Sabah</td>
<td>As-Sabah</td>
</tr>
<tr>
<td>Sa'dah City</td>
<td>Old City</td>
<td>Old City</td>
</tr>
<tr>
<td>Sa'dah City</td>
<td>Shuab</td>
<td>Shuab</td>
</tr>
<tr>
<td>Sa'dah City</td>
<td>Aziz</td>
<td>Aziz</td>
</tr>
<tr>
<td>Sa'dah City</td>
<td>Al Dhihar</td>
<td>Al Dhihar</td>
</tr>
<tr>
<td>Sana'a City</td>
<td>Al Amanat Al Asimah</td>
<td>Al Amanat Al Asimah</td>
</tr>
<tr>
<td>Sana'a City</td>
<td>Old City</td>
<td>Old City</td>
</tr>
<tr>
<td>Sana'a City</td>
<td>Shuab</td>
<td>Shuab</td>
</tr>
<tr>
<td>Sana'a City</td>
<td>Aziz</td>
<td>Aziz</td>
</tr>
<tr>
<td>Sana'a City</td>
<td>Al Dhihar</td>
<td>Al Dhihar</td>
</tr>
<tr>
<td>Sana'a City</td>
<td>As-Sabah</td>
<td>As-Sabah</td>
</tr>
<tr>
<td>Sana'a City</td>
<td>Old City</td>
<td>Old City</td>
</tr>
<tr>
<td>Sana'a City</td>
<td>Shuab</td>
<td>Shuab</td>
</tr>
<tr>
<td>Sana'a City</td>
<td>Aziz</td>
<td>Aziz</td>
</tr>
<tr>
<td>Sana'a City</td>
<td>Al Dhihar</td>
<td>Al Dhihar</td>
</tr>
<tr>
<td>Sana'a City</td>
<td>As-Sabah</td>
<td>As-Sabah</td>
</tr>
<tr>
<td>Sana'a City</td>
<td>Old City</td>
<td>Old City</td>
</tr>
<tr>
<td>Sana'a City</td>
<td>Shuab</td>
<td>Shuab</td>
</tr>
<tr>
<td>Sana'a City</td>
<td>Aziz</td>
<td>Aziz</td>
</tr>
<tr>
<td>Sana'a City</td>
<td>Al Dhihar</td>
<td>Al Dhihar</td>
</tr>
<tr>
<td>Sana'a City</td>
<td>As-Sabah</td>
<td>As-Sabah</td>
</tr>
<tr>
<td>Sana'a City</td>
<td>Old City</td>
<td>Old City</td>
</tr>
<tr>
<td>Sana'a City</td>
<td>Shuab</td>
<td>Shuab</td>
</tr>
<tr>
<td>Sana'a City</td>
<td>Aziz</td>
<td>Aziz</td>
</tr>
<tr>
<td>Sana'a City</td>
<td>Al Dhihar</td>
<td>Al Dhihar</td>
</tr>
<tr>
<td>Sana'a City</td>
<td>As-Sabah</td>
<td>As-Sabah</td>
</tr>
<tr>
<td>Sana'a City</td>
<td>Old City</td>
<td>Old City</td>
</tr>
<tr>
<td>Sana'a City</td>
<td>Shuab</td>
<td>Shuab</td>
</tr>
<tr>
<td>Sana'a City</td>
<td>Aziz</td>
<td>Aziz</td>
</tr>
<tr>
<td>Sana'a City</td>
<td>Al Dhihar</td>
<td>Al Dhihar</td>
</tr>
<tr>
<td>Sana'a City</td>
<td>As-Sabah</td>
<td>As-Sabah</td>
</tr>
<tr>
<td>Sana'a City</td>
<td>Old City</td>
<td>Old City</td>
</tr>
<tr>
<td>Sana'a City</td>
<td>Shuab</td>
<td>Shuab</td>
</tr>
<tr>
<td>Sana'a City</td>
<td>Aziz</td>
<td>Aziz</td>
</tr>
<tr>
<td>Sana'a City</td>
<td>Al Dhihar</td>
<td>Al Dhihar</td>
</tr>
<tr>
<td>Sana'a City</td>
<td>As-Sabah</td>
<td>As-Sabah</td>
</tr>
<tr>
<td>Sana'a City</td>
<td>Old City</td>
<td>Old City</td>
</tr>
<tr>
<td>Sana'a City</td>
<td>Shuab</td>
<td>Shuab</td>
</tr>
<tr>
<td>Sana'a City</td>
<td>Aziz</td>
<td>Aziz</td>
</tr>
<tr>
<td>Sana'a City</td>
<td>Al Dhihar</td>
<td>Al Dhihar</td>
</tr>
<tr>
<td>Sana'a City</td>
<td>As-Sabah</td>
<td>As-Sabah</td>
</tr>
<tr>
<td>Sana'a City</td>
<td>Old City</td>
<td>Old City</td>
</tr>
<tr>
<td>Sana'a City</td>
<td>Shuab</td>
<td>Shuab</td>
</tr>
<tr>
<td>Sana'a City</td>
<td>Aziz</td>
<td>Aziz</td>
</tr>
<tr>
<td>Sana'a City</td>
<td>Al Dhihar</td>
<td>Al Dhihar</td>
</tr>
<tr>
<td>Sana'a City</td>
<td>As-Sabah</td>
<td>As-Sabah</td>
</tr>
<tr>
<td>Sana'a City</td>
<td>Old City</td>
<td>Old City</td>
</tr>
<tr>
<td>Sana'a City</td>
<td>Shuab</td>
<td>Shuab</td>
</tr>
<tr>
<td>Sana'a City</td>
<td>Aziz</td>
<td>Aziz</td>
</tr>
<tr>
<td>Sana'a City</td>
<td>Al Dhihar</td>
<td>Al Dhihar</td>
</tr>
<tr>
<td>Sana'a City</td>
<td>As-Sabah</td>
<td>As-Sabah</td>
</tr>
<tr>
<td>Sana'a City</td>
<td>Old City</td>
<td>Old City</td>
</tr>
<tr>
<td>Sana'a City</td>
<td>Shuab</td>
<td>Shuab</td>
</tr>
<tr>
<td>Sana'a City</td>
<td>Aziz</td>
<td>Aziz</td>
</tr>
<tr>
<td>Sana'a City</td>
<td>Al Dhihar</td>
<td>Al Dhihar</td>
</tr>
<tr>
<td>Sana'a City</td>
<td>As-Sabah</td>
<td>As-Sabah</td>
</tr>
<tr>
<td>Sana'a City</td>
<td>Old City</td>
<td>Old City</td>
</tr>
<tr>
<td>Sana'a City</td>
<td>Shuab</td>
<td>Shuab</td>
</tr>
<tr>
<td>Sana'a City</td>
<td>Aziz</td>
<td>Aziz</td>
</tr>
<tr>
<td>Sana'a City</td>
<td>Al Dhihar</td>
<td>Al Dhihar</td>
</tr>
<tr>
<td>Sana'a City</td>
<td>As-Sabah</td>
<td>As-Sabah</td>
</tr>
<tr>
<td>Sana'a City</td>
<td>Old City</td>
<td>Old City</td>
</tr>
<tr>
<td>Sana'a City</td>
<td>Shuab</td>
<td>Shuab</td>
</tr>
<tr>
<td>Sana'a City</td>
<td>Aziz</td>
<td>Aziz</td>
</tr>
<tr>
<td>Sana'a City</td>
<td>Al Dhihar</td>
<td>Al Dhihar</td>
</tr>
<tr>
<td>Sana'a City</td>
<td>As-Sabah</td>
<td>As-Sabah</td>
</tr>
<tr>
<td>Sana'a City</td>
<td>Old City</td>
<td>Old City</td>
</tr>
<tr>
<td>Sana'a City</td>
<td>Shuab</td>
<td>Shuab</td>
</tr>
<tr>
<td>Sana'a City</td>
<td>Aziz</td>
<td>Aziz</td>
</tr>
<tr>
<td>Sana'a City</td>
<td>Al Dhihar</td>
<td>Al Dhihar</td>
</tr>
<tr>
<td>Sana'a City</td>
<td>As-Sabah</td>
<td>As-Sabah</td>
</tr>
<tr>
<td>Sana'a City</td>
<td>Old City</td>
<td>Old City</td>
</tr>
<tr>
<td>Sana'a City</td>
<td>Shuab</td>
<td>Shuab</td>
</tr>
<tr>
<td>Sana'a City</td>
<td>Aziz</td>
<td>Aziz</td>
</tr>
<tr>
<td>Sana'a City</td>
<td>Al Dhihar</td>
<td>Al Dhihar</td>
</tr>
<tr>
<td>Sana'a City</td>
<td>As-Sabah</td>
<td>As-Sabah</td>
</tr>
<tr>
<td>Sana'a City</td>
<td>Old City</td>
<td>Old City</td>
</tr>
<tr>
<td>Sana'a City</td>
<td>Shuab</td>
<td>Shuab</td>
</tr>
<tr>
<td>Sana'a City</td>
<td>Aziz</td>
<td>Aziz</td>
</tr>
<tr>
<td>Sana'a City</td>
<td>Al Dhihar</td>
<td>Al Dhihar</td>
</tr>
<tr>
<td>Sana'a City</td>
<td>As-Sabah</td>
<td>As-Sabah</td>
</tr>
<tr>
<td>Sana'a City</td>
<td>Old City</td>
<td>Old City</td>
</tr>
<tr>
<td>Sana'a City</td>
<td>Shuab</td>
<td>Shuab</td>
</tr>
<tr>
<td>Sana'a City</td>
<td>Aziz</td>
<td>Aziz</td>
</tr>
<tr>
<td>Sana'a City</td>
<td>Al Dhihar</td>
<td>Al Dhihar</td>
</tr>
<tr>
<td>Sana'a City</td>
<td>As-Sabah</td>
<td>As-Sabah</td>
</tr>
<tr>
<td>Sana'a City</td>
<td>Old City</td>
<td>Old City</td>
</tr>
<tr>
<td>Sana'a City</td>
<td>Shuab</td>
<td>Shuab</td>
</tr>
<tr>
<td>Sana'a City</td>
<td>Aziz</td>
<td>Aziz</td>
</tr>
<tr>
<td>Sana'a City</td>
<td>Al Dhihar</td>
<td>Al Dhihar</td>
</tr>
<tr>
<td>Sana'a City</td>
<td>As-Sabah</td>
<td>As-Sabah</td>
</tr>
<tr>
<td>Sana'a City</td>
<td>Old City</td>
<td>Old City</td>
</tr>
<tr>
<td>Sana'a City</td>
<td>Shuab</td>
<td>Shuab</td>
</tr>
<tr>
<td>Sana'a City</td>
<td>Aziz</td>
<td>Aziz</td>
</tr>
<tr>
<td>Sana'a City</td>
<td>Al Dhihar</td>
<td>Al Dhihar</td>
</tr>
<tr>
<td>Sana'a City</td>
<td>As-Sabah</td>
<td>As-Sabah</td>
</tr>
<tr>
<td>Sana'a City</td>
<td>Old City</td>
<td>Old City</td>
</tr>
<tr>
<td>Sana'a City</td>
<td>Shuab</td>
<td>Shuab</td>
</tr>
<tr>
<td>Sana'a City</td>
<td>Aziz</td>
<td>Aziz</td>
</tr>
<tr>
<td>Sana'a City</td>
<td>Al Dhihar</td>
<td>Al Dhihar</td>
</tr>
<tr>
<td>Sana'a City</td>
<td>As-Sabah</td>
<td>As-Sabah</td>
</tr>
<tr>
<td>Sana'a City</td>
<td>Old City</td>
<td>Old City</td>
</tr>
<tr>
<td>CITY</td>
<td>GOVERNORATE</td>
<td>District</td>
</tr>
<tr>
<td>-----------------</td>
<td>-------------</td>
<td>----------</td>
</tr>
<tr>
<td>Aden</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ash-Shaikh Obeid</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Al Mansura</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Al Burayqeh</td>
<td></td>
<td></td>
</tr>
<tr>
<td>At Ta'iziyah</td>
<td></td>
<td></td>
</tr>
<tr>
<td>At-Tawahi</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Al Hawtah</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tuban</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
State of Yemeni Cities

<table>
<thead>
<tr>
<th>City</th>
<th>Governorate</th>
<th>Population change</th>
<th>Total current population</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sana’a</td>
<td>Amanat Al Asimah</td>
<td>193896</td>
<td>3406843</td>
</tr>
<tr>
<td>Aden</td>
<td>Aden</td>
<td>10 308</td>
<td>997 308</td>
</tr>
<tr>
<td>Ta’iz</td>
<td>Ta’iz</td>
<td>-272346</td>
<td>689 258</td>
</tr>
<tr>
<td>Bayt al Faqih</td>
<td>Al Hodeidah</td>
<td>35 184</td>
<td>413 406</td>
</tr>
<tr>
<td>Ibb</td>
<td>Ibb</td>
<td>17 454</td>
<td>374 688</td>
</tr>
<tr>
<td>Dhamar</td>
<td>Dhamar</td>
<td>29 674</td>
<td>295 027</td>
</tr>
<tr>
<td>Zabid</td>
<td>Al Hodeidah</td>
<td>39 948</td>
<td>284 436</td>
</tr>
<tr>
<td>Al Mukalla</td>
<td>Hadramawt</td>
<td>3318</td>
<td>282023</td>
</tr>
<tr>
<td>Bajil</td>
<td>Al Hodeidah</td>
<td>-2 846</td>
<td>262 946</td>
</tr>
<tr>
<td>Dhi as Sufal</td>
<td>Ibb</td>
<td>28 272</td>
<td>265 406</td>
</tr>
<tr>
<td>Yarim</td>
<td>Ibb</td>
<td>5 460</td>
<td>249 822</td>
</tr>
<tr>
<td>Ma’rib</td>
<td>Ma’rib</td>
<td>89 844</td>
<td>202 343</td>
</tr>
<tr>
<td>Al Hodeidah</td>
<td>Al Hodeidah</td>
<td>-462 330</td>
<td>176 344</td>
</tr>
<tr>
<td>‘Amran</td>
<td>Amran</td>
<td>20 370</td>
<td>138 121</td>
</tr>
<tr>
<td>Al Jabin</td>
<td>Raymah</td>
<td>12 150</td>
<td>136 426</td>
</tr>
<tr>
<td>Dhalie</td>
<td>Ad Dali’</td>
<td>510</td>
<td>132 166</td>
</tr>
<tr>
<td>Jawf al Maqbabah</td>
<td>Abyan</td>
<td>-408</td>
<td>119 074</td>
</tr>
<tr>
<td>Hajjah</td>
<td>Hajjah</td>
<td>19 746</td>
<td>102 237</td>
</tr>
<tr>
<td>Sa’dah</td>
<td>Sa’dah</td>
<td>-18954</td>
<td>750 84</td>
</tr>
<tr>
<td>Al Ghadzah</td>
<td>Al Maharrah</td>
<td>6 168</td>
<td>55 513</td>
</tr>
<tr>
<td>Ataq</td>
<td>Shabwah</td>
<td>1 788</td>
<td>53 467</td>
</tr>
<tr>
<td>Hadibu</td>
<td>Socotra</td>
<td>-60</td>
<td>52 774</td>
</tr>
<tr>
<td>Al Bayda</td>
<td>Al Bayda</td>
<td>2 688</td>
<td>43 497</td>
</tr>
<tr>
<td>Zinjibar</td>
<td>Abyan</td>
<td>5226</td>
<td>40 707</td>
</tr>
<tr>
<td>Al Hawtah</td>
<td>Lahj</td>
<td>-3138</td>
<td>34 852</td>
</tr>
<tr>
<td>Al Hazm</td>
<td>Al Jawf</td>
<td>-7 110</td>
<td>34 811</td>
</tr>
<tr>
<td>Al Mahwit</td>
<td>Al Mahwit</td>
<td>4 854</td>
<td>34 654</td>
</tr>
</tbody>
</table>

Table 4: Population figures largest 27 cities (cities presented in this report highlighted)

As mentioned earlier, currently, there are 27 cities and towns with a population exceeding about 35,000 inhabitants, including IDPs, in Yemen. The estimated urban population of these 27 cities and towns are 8,908,402, ranging from 3,4 million in Sana’a to just over 34,000 in Al Hazm and Al Mahwit. Nine of the cities, including Al Hawtah, Zinjibar, and Sa’dah, have populations below 100,000; 17 cities, including Al Hodeidah, Ma’rib, Al Mukalla, Ibb, Ta’iz, and Aden have populations below 1 million; while only Sana’a’s population exceeds 1 million. The estimated urban population made up 29.8 percent of the total population in 2019. This is likely to be an underestimate due to the following reasons:

- 27 cities do not account for all urban areas in Yemen;
- a share of the people migrating or fleeing to urban areas are not registered as they often relocate to informal areas or stay with family or friends, thus going “under the radar”; temporarily movements of IDPs due to security situation might temporarily change or mask what are longer-term trends; the boundaries of the cities as defined in this report might not account for all the people living in the outskirts of the cities if this falls outside of the districts included.

\[106\] Smaller sized urban areas are not included in this list. According to the Republic of Yemen’s Habitat III report, there were 3,642 cities and towns in Yemen in 2010. Moreover, there is no relevant information available on a city-scale for one of the larger cities originally included in the list, Sahar, which is a village south-east of Sana’a, and its population is therefore not included.

\[107\] This is particularly important to note in the case of Aden and Sana’a, Ibb, Marib where the cities, as seen on satellite imageries, have expanded beyond these boundaries. See methodology for further details.
Sana’a is the primate city in Yemen. Demonstrating its importance as the central political and socio-economic pole, the capital has seen a remarkable increase in its urban population over the past two decades. The municipality’s population increased more than tenfold in less than three decades, from 162,000 in 1977 to 1.7 million in 2004, and doubling again to 3.4 million in 2019. Much of this expansion has taken place through the growth of informal settlements on the periphery of the city. Sana’a is more than three times larger than the second largest city, Aden, with an estimated population of close to one million. In fact, Sana’a’s population is larger than the combined population for the nine other cities covered in this report (with a total population of 2.9 million people).

As Table 6 and Figure 8 shows, all 10 cities covered this report, except Aden and Sana’a, make up a minority share of the total population on the governorate level. Ma’rib has the relative largest share after Aden and Sana’a with 44 percent of the governorate’s population living within the city boundaries, while Al Hawtah has the smallest share with a modest 3 percent of the governorate’s population. This entails that data on a governorate level is likely to not be representative for most of the cities.

It is important to note that in Yemen, the share of a city’s population relative to the governorate will oscillate considerably as a result of displacement trends. For cities such as Ta’iz and Al Hodeidah, it is likely that a share of the large population which has been displaced from the cities have relocated within the respective governorates, thus augmenting the population size in the governorates relative to the cities. If the security situation allows for return, these cities will grow in absolute terms, and likely even more relative to the governorates’ populations.
State of Yemeni Cities

Urban growth: the case of Aden

Aden is the only city in Yemen for which census has been carried out before the 1970s. In 1946 and 1955 the British authorities carried out census documenting a population size of 80,516 inhabitants in 1946 and 138,441 in 1955, compared to the 589,419 in the 2004 census and the current estimated population of close to 1 million.

As seen in Table 7, apart from the period from 1965 to 1973, Aden has experienced a positive and significant population growth from 1900 to 2019. The period where Aden had the highest population growth (1946-1965), coincides with Aden’s increased strategic significance under the British colonial period. Aden’s independence in 1967 further corresponded to the closure of the Suez Canal (from 1967-1975), which significantly decreased the port’s activities, a period (1965-1973) with negative population growth in Aden of 2.1 percent. From the time of unification Aden has continued to grow, with particularly high growth around the time of unification (4.8 percent annually) and during the lead-up to and the first year of the outbreak of the conflict from 2010-2014.

<table>
<thead>
<tr>
<th>Year</th>
<th>Population</th>
<th>Population change</th>
</tr>
</thead>
<tbody>
<tr>
<td>1900</td>
<td>42 417</td>
<td></td>
</tr>
<tr>
<td>1931</td>
<td>51 500</td>
<td>0.6%</td>
</tr>
<tr>
<td>1946</td>
<td>80 516</td>
<td>3.0%</td>
</tr>
<tr>
<td>1955</td>
<td>138 441</td>
<td>6.2%</td>
</tr>
<tr>
<td>1965</td>
<td>285 000</td>
<td>7.5%</td>
</tr>
<tr>
<td>1973</td>
<td>240 370</td>
<td>-2.1%</td>
</tr>
<tr>
<td>1988</td>
<td>304 985</td>
<td>1.6%</td>
</tr>
<tr>
<td>1994</td>
<td>404 257</td>
<td>4.8%</td>
</tr>
<tr>
<td>2004</td>
<td>589 419</td>
<td>3.8%</td>
</tr>
<tr>
<td>2010</td>
<td>734 562*</td>
<td>3.7%</td>
</tr>
<tr>
<td>2014</td>
<td>897 015*</td>
<td>5.1%</td>
</tr>
<tr>
<td>2019</td>
<td>997 308 **</td>
<td>2.1%</td>
</tr>
</tbody>
</table>

Table 6 Population growth Aden 1900-2019
* Population projections based on CSO2004 data
Sources: The Central Statistical Organization.

Age distribution

Yemen has a very young population, with the median age estimated to be 20.2 years. According to the CSO projections for population in 2019 based on the 2004 census data, the age distribution across cities in Yemen, shown in Figure 9, varies greatly. Mindful of potential caveats in the data (see Table 3), some interesting observations on the age distribution for the selected cities can be made. The largest cities also have the largest population share under the age of 14 are Sana’a (52 percent), Aden (45 percent), and Ta‘iz (40 percent) in addition to Sa‘dah (43 percent), whereas some of the cities with the smallest population size, such as Al Hawtah and Zinjibar, has the largest share of population aged 25-64 (47 and 46 percent respectively). The population above 65 years is low across all cities, reflecting a life expectancy at birth at 66.4 years in Yemen in 2018.

Given the large population movements in Yemen as a result of the conflict, the demographic composition in cities is likely to have changed compared to the projections. As further discussed in the Economy and Housing, Land and Property chapters, heads of households and persons with better education are more likely to flee or migrate to urban areas, indicating that there are likely more young people and more men in ‘arrival’ cities compared to the CSO data, while more children, and women reside in ‘departure cities’ compared to the CSO data. At the same time, given that 76 percent of IDPs are estimated to be women and children, there might also be more women amongst the new arrivals.

109 World Bank.
The young population in Yemen is reflected also in the youth share of the cities’ populations, where the share of population below 25 years ranges from 66 percent of the population in Sana’a to 26 percent of the population in Ta’iz. As noted above, these estimates are projections based on the 2004 census data, and the conflict and resulting displacement patterns are likely to have shifted the share of young people and gender composition compared to these projections.
Using the CSO 2004 projections for 2019 the data show that there is, generally, a majority of men in the ten cities for all age groups. The highest average share of men is between 20-24 years. Al Mukalla has an estimated 57 percent men and Al Hodeidah 56 percent men between 20-24 years. Sana’a has an estimated 58 percent male population between the ages of 25-64. This supports the assumption more men seek to the cities in search of livelihoods, a trend which is likely to have been reinforced as a result of the conflict.
Displacement

The conflict has resulted in largescale displacement, including between cities and from rural to urban areas, within the same governorate and between governorates. As many as 3.6 million people are currently displaced in Yemen. Some 76 percent of IDPs are estimated to be women and children, and nearly 21 percent of IDP households as well as host communities are headed by women below the age of 18. While the conflict patterns and the degree of intensity of the conflict in different parts of the country is decisive for which cities have an outflow or influx of IDPs, the general migration trend from the rural areas to the large agglomeration areas is expected to continue. Driven by the accelerated contraction of the agricultural sector in recent years, urban areas with relative safety continue to attract large numbers of people looking for income opportunities and access to basic and social services.

Displacement has had a dramatic effect on the overall population size, particularly early in the conflict. Figure 11 shows the annual displacement to and from 12 governorates in Yemen. Notably, in 2015-2016, 9 governorates experiences net outflux of displaced persons, with Marib receiving the vast majority of displaced persons. The displacement has impacted the population size in many Yemeni cities, including internal displacement within cities leading to higher population concentrations in certain areas of these cities. As a result, cities will have to (re-) integrate a large number of persons who come to urban centres in search for livelihood opportunities and services — or safety, and conversely compensate for the loss of residents as people are pushed out of or forced to flee urban areas, leaving behind vacant houses and businesses, as well as fragmented social fabrics. Rapid urbanization through displacement and migration is adding additional pressure on already strained scarce resources such as services, infrastructure, housing, health, schools, electricity, roads. Moreover, it is increasing competition in the labour market characterised by already limited and reducing employment opportunities. Amid a severe economic crisis and protracted conflict, IDPs and their hosts are rapidly exhausting reserves to meet their needs.

According to the IDP flow estimates, a total of 1,338,402 people were displaced from the ten selected cities by end of 2019, while 900,780 IDPs came to these cities, resulting in a net reduction of 437,622 persons in the ten cities. Whereas cities such as Al Hodeidah, Ta‘iz, Sa‘dah and Al Hawtah has experienced a significant outflow of IDPs (over 970,000 combined), other cities has experienced large fluctuations or steady increase of IDPs. Sana’a, which early in the conflict suffered large population losses, experienced a positive net influx of 193,896 IDPs in 2019. Al Hodeidah has experienced even more extensive population changes, with a net outflow of 462,330 IDPs (72 percent of the population), while Ta‘iz has a net outflow of 272,346 IDPs. Looking at smaller cities such as Zinjibar, the influx of 8,106 IDPs is dramatic considering an overall population of only 40,707. Ma’rib has experienced the largest influx of IDPs compared to its size. Since 2015 to the end of 2019, 153,561 IDPs came to the city, causing a total population change of an additional 89,844 persons. A new wave of displacement in early 2020 led to a
surge in displacement with an estimated 9,500 households (HHs) relocating to Ma’rib city and nearby districts. The city has 13 recorded displacement sites, of which Al Jufainah is the largest, estimated to host more than 4000 households. According to the rapid displacement tracking for June 2020, many of the new displacements recorded are a result of COVID-19 (in Aden and Lajh). This suggests that the COVID-19 epidemic will further drive displacement as the pandemic is spreading across the country.  

Figure 10 Annual displacement from the 12 governorates in Yemen (PNGK, based on IOM DTM 2019).

Persons with better education or transferrable skills have been more likely to flee to cities, compared with those who remain in rural areas. A further pull factor is social networks, with families and friends offering housing or assist with finding work.  

Rural-to-urban migration has been characterized by heads of households moving to the cities for work while leaving their families at home. Often men from rural areas share small crowded apartments while living in the cities. This is due to high living costs in the cities, in combination with limited unskilled day labour opportunities as well as the economic reliance on agriculture, where the men return regularly to take part in agricultural activities. The influx of people to urban areas continues to put pressure on an already strained housing sector. Increased poverty rates in rural areas, lack of security with an escalation of the war, absence of employment opportunities and climate-related factors, are all contributing to the displacement. However, the war has rendered many of the ‘pull factors’ to urban areas, such as provision of basic and social services, largely unavailable, thus lessening the rural to urban displacement compared to what it could have been. The displacement patterns are also influenced by a North-South divide. In Aden in particular, groups of people from the Security Belt forces have deported Yemenis with a northern origin from Aden. The main targets, although not limited to this, have been male shop and restaurant owners.

In recent years, however, a countertrend has been observed, where the armed conflicts lead to a “reverse” population movement from main cities, including Sana’a, Aden and Ta’iz, to rural areas transforming them into hosting areas for IDPs. However, according to IDMCs study, urban-to-rural migration is limited for several reasons, including lack of employment opportunities, lack of access to electricity and running water, the distance to markets, schools and health facilities as well as differences in social life. As such, of those relocating to rural areas, several choose to return to a city to look for income opportunities. See Table 12 for displacement trends of the ten studied cities. 

117 IDMC.
118 IDMC.
Refugees, asylum seekers and migrants

Migration has been a contributor to urbanisation in Yemen. This includes the return of migrants to Yemen during the Gulf War in 1990, particularly from Saudi Arabia. Most of these returnees settled in the largest cities, such as the capital Sana’a, and often contributed to the growth of informal settlements. In 2019, IOM Displacement Tracking Matrix (DTM) estimated that an approximate 140,000 migrants entered Yemen and an approximate 50,000 Yemeni nationals returned from Saudi Arabia.\footnote{IOM Yemen, “Yemen — Flow Monitoring Points - Migrant Arrivals and Yemeni Returns From Saudi Arabia in 2019,” January 19, 2020, accessed: July 09, 2020, https://migration.iom.int/reports/yemen—flow-monitoring-points-migrant-arrivals-and-yemeni-returns-saudi-arabia-2019.} This reflects an increase of migrants from the Horn of Africa to Yemen since 2014, despite the deteriorating situation in the country, making the Gulf of Aden the busiest maritime migration route in the world.\footnote{IOM UN Migration, “IOM Releases Crisis Appeal to Support over 5.3 Million Yemenis and Migrants - International Organization for Migration,” UN Migration, May 29, 2020, accessed: July 09, 2020, https://www.iom.int/news/iom-releases-crisis-appeal-support-over-53-million-yemenis-and-migrants.} Approximately 40 percent of the refugees, asylum-seekers and migrants have acute needs which require some form of assistance, and many are faced with severe protection risks. The tracking of migrants in May 2020 suggests that migrants (100 percent of the migrants documented) are only passing through Yemen with Saudi Arabia as the intended destination country.\footnote{IOM Yemen, “Yemen – Flow Monitoring Points - Migrant Arrivals and Yemeni Returns From Saudi Arabia in May 2020,” June 08, 2020, accessed: July 09, 2020, https://displacement.iom.int/system/tdf/reports/YE-Migrants_FMR_May 2020 Dashboard_04052020.pdf?file=1&type=node&id=8868.} However many, also of migrants with valid travel documents, find themselves stranded in Yemen due to increased restrictions on movement as a result of the COVID-19 pandemic.

The influx of refugees, asylum-seekers and migrants has been driven by a significant increase in the number of Ethiopian refugee and migrant arrivals, where over 90 percent of arrivals in 2018 came from Ethiopia while the rest originated from Somalia. Of those tracked by IOM, 88 percent were heading towards Saudi Arabia while 12 percent intended to remain in Yemen.\footnote{Ibid.} Economic drivers were reported by 98 percent of the migrants as their main reasons for moving. The migrants were predominantly male (72 percent), with 18 percent women and 10 percent children reported, 7 percent boys and 3 percent girls. Out of the 14,210 children who migrated to Yemen in 2019, 8,186 were unaccompanied children and 173 children were under the age of five years old.\footnote{Ibid.} Cities such as Ma’rib has become a transit hub for African migrants crossing the Gulf of Aden from Somalia (see Figure 12 and Figure 13 over location of refugee and migrant presence). The migrants are reported to try to find daily work in or around the city to meet their basic needs while they wait to continue their journey, and are often left to sleep on the streets or in mosques at night.\footnote{Ibid.}

\textbf{Figure 11 Overview refugees and migrants (HNO 2019)}
Minorities

The Muhamasheen community (locally referred to as ‘Akhdam’) is recognised as Yemen’s most marginalized group. The Muhamasheen suffer from caste-based, socio-economic, and political discrimination and fall outside established tribal and societal structures. Historically, the Muhamasheen have been known to live in very poor conditions in segregated slums on the periphery of urban areas, made up of small huts built of wood and cloth with few basic services available. Many Muhamasheen are unemployed, and they are generally excluded from public sector jobs, except jobs in waste management and as street cleaners. In the private sector, they are often confined to menial, low-paid jobs such as shoe-shining and car washing. While there are no official statistics on the size of the community, there is an estimated population of 3.5 million throughout Yemen, with presence in every Yemeni governorate including large numbers in Al Hodeidah, Ta’iz and Hajjah governorates.

There is a small Jewish minority in Yemen, many of whom were residing in Sa’dah, a city that used to be famous for its Jewish silversmiths. While estimates on the number of Jewish people in Sa’dah vary, 2005 sources indicate there were between 200 – 500 Jewish people residing in Yemen. Other research suggests that this number may actually be higher and that between 1,500 – 2,000 Yemeni Jews may have resided in the country in 2005, but concealed their religious convictions due to fear of persecution. For example, in January 2007, the Yemeni government relocated 65 Yemeni Jews from Sa’dah following threats against the community. Further, there are an estimated 2,000 Baha’i in Yemen who have been increasingly persecuted since the outbreak of the conflict.

Another minority, and testifying to longstanding ties during the British colonial period in the country, the country has a vibrant Indian diaspora. This group is 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 percent of the estimated 100,000 Indians concentrated along the coastal regions in amongst others Aden, Mukalla, and Al Hodeidah. However, 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 professions.
Governance

Strong centralisation yet fragmented governance in a country with contracting civic space and limited opportunities to participate in decision-making, especially amongst women and youth.

With the ongoing conflict and a fluid yet increasingly fragmented and complex power structure, urban governance in Yemen is multifaceted. A process of political, fiscal, and administrative decentralisation was introduced in 2000 with the establishment of Local Councils (LCs) on governorate and district levels. However, the protests in 2011, demanding that the deep centralization of power and top-down approach for decision-making were to be addressed, is emblematic of the barriers to implementing the Local Authorities Law and strengthen local governance in Yemen. This has led to a marked mistrust expressed by the people towards the LCs to date. One of the main challenges facing local authorities is limited budgets to address the demands and needs of the population, which severely restricts local governments capacity to govern and deliver services and renders them without the flexibility to respond to changing socio-economic and political situations.

Both women and youth have limited influence on decision-making. For both cohorts, the conflict has reduced the space for political engagement. Despite a very young population, youth lack formal channels to participate as active citizens. At the same time, Civil Society Organisations (CSOs) have played a key role in supporting local populations. However, increased use of intimidations, threats, harassment, excessive force, arrests and abductions by state and non-state actors is making it more difficult for these organisations to operate.
Introduction

Both the former Yemen Arab Republic (YAR) in the north and People’s Democratic Republic of Yemen (PDRY) in the south were single party rule systems. With the unification and the formation of the Republic of Yemen (RoY) in 1990, the economic and political systems in YAR and PDRY were attempted integrated and a political pluralism system was established. Sana’a was made the national capital in Yemen and all central government offices moved to the capital. In 1994 the northern and southern parts entered into warfare, which was won by the northern leadership only months later. This resulted in a large-scale restructuring of the southern administration, as further described under the Political landscape in the Context chapter. In parallel, the constitution was amended making Shariah the sole source of legislation, while Aden’s administrative significance was reduced to the capital of Aden governorate.

Currently, different powers govern different parts of the country (see Interlinked conflicts, Context, for more details). While this chapter will aim to describe the institutional and regulatory framework for central and decentralised governance, with particular attention to the management of the studied cities, Yemen is largely governed by tribal governance (mainly outside the cities), and legal pluralism between the national and tribal laws exists. The tribal system could be seen as a hindrance to national state building and development, however rural as well as also many urban residents turn to Tribal Customary Law rather than the court system as the tribal system is experienced as more accessible and effective than the formal system. An absence of reliable national rule of law, both judiciary and law enforcement, is reported as an important root cause and contributor to continuous conflict.

Figure 13: Governorates, districts and main cities in Yemen (UN-Habitat 2020).

135 Bertlemanns Stiftung.
138 Ibid.
Legal and regulatory framework

Decentralisation

The state responded to calls for decentralization in 2000 with the Local Authority Law (LAL) which introduced Local Councils (LCs) at governorate and district levels. After 2000, there were 21 governorates as well as one municipality in Sana’a, the upper tier, and 333 districts, in the lower tier (Figure 14 and Figure 15). Each governorate has a capital city. Two LCs elections has taken place, the first in 2001 and the second one in 2006.

Also in 2000 and 2006, two important legislative and institutional reforms were carried out by the GoY:

1. **Presidential Decree No.35 of 2006**: Established the General Authority for Lands, Survey and Urban Planning (GALSUP), and was issued in an attempt to better coordinate public authorities with responsibility for land. The GoY consolidated authority over a number of urban functions formerly exercised by different entities, including:
   - Land survey, mapping and registration, formerly implemented by the Survey Authority and Land Registry, Presidency of the Council of Ministers;
   - Management of State land and real estate, formerly under the State Land and Real Estate Authority, Presidency of the Council of Ministers, and;
   - Urban planning, formerly under the Urban Planning Sector, Ministry of Public Work and Highways (as mentioned earlier).

2. **Local Authorities Law (No. (4) of 2000)**: Initiation of a comprehensive reform of the Yemeni Governance system through the establishment of three levels of government: central, governorate, and district. The law defines the responsibilities of government bodies accountable to the Ministry of Local Authorities (MOLA). In brief, those bodies include actors at two levels of government, or what the law refers to generically as the ‘administrative units’ of ‘governorates’ and ‘districts.’ The law describes the government actors within those units as being:

---

As explained in the National Report prepared by the Republic of Yemen for the Habitat III conference: 141

“The Local Authorities Law (LAL) provides a clear and comprehensive legislative framework for decentralization based on the following principles:

- Popular participation in decision-making and local management in socio-economic and cultural development through elected councils;
- Financial decentralization, and;
- Decentralization of administrative and services delivery functions.

With the passage of the LAL, Yemen made a major step towards political, fiscal, and administrative decentralization. In fact, the law transferred decision-making from the central level to elected local councils at the governorate and municipal levels, which were given the competencies of formulating development strategies and programs, budgeting capital investment plans, supervising the implementation of different strategies and programs, and monitoring the activities of the executive local authorities. The different line ministries’ local branches (e.g. public works, education, health, etc) were transformed into local executive authorities operating under local councils’ guidance and whose mandate includes the implementation of the strategies and programs proposed under the annual developmental plan and budget and the delivery and management of the different services. 142

Although the local government structure is based on the general organisational structure of governorates, it also departs from it in several significant ways. Broadly, organizational units (offices and bureaus) are either tied directly to the Office of the Governor or managed by the Office of the Deputy Governor, also called vice governor or Secretary General. The Office of the Governor, which ranks as a government minister, exercises executive control over the governorate, either directly or through his deputies.

The district local authorities have a similar structure at the district level except that the head of the District LC, and head over all civil servants and public employees in the district, is called Director General, who is appointed centrally, and the organization units are tied directly with the ones at the governorate level. 143

However, with time the LAL came under criticism from various parties. As a result, and based on a series of studies on decentralization between the period extending from 2003 until 2007, the LAL was modified from a system of local authorities to one of local government. A Presidential decree 264/2003 was issued to establish a ministerial committee to promote decentralization. The Cabinet resolution which set out the tasks and functions of the committee also adopted the following two resolutions: 143

- Resolution 401/2008 that endorsed a draft strategy submitted to the Cabinet and the nation’s governors by the Minister of Local Authorities (MoLA), and
- Resolution 411, which obligated MoLA to design a national program to implement the National Strategy for Local Governance.

The strategy addresses what was considered the failure of the LAL to equip local authority systems to run local affairs such that local needs were addressed and residents aspirations were protected in a way that conforms to international quality and efficiency standards. This despite the recognition that the essential principles required to facilitate this were included in the LAL. 144

With the outbreak of the 2011 events, the reform process was halted. Notably, one of the main demands of the protestors in 2011 was to address the extreme centralization of power and top-down approach for decision-making, including poor application of the LAL and its amendments. The National Dialogue Conference (NDC) held in January 2014, addressed the current political conflict in the country and growing discontentment. Yemen’s governance structures, such as presidential versus parliamentary systems, centralized versus decentralized systems, and the organisation of local government institutions, were key aspects discussed.

Despite reforms and changes to the governance system, the president and the central government right to veto local activities in effect means that there is strong central control over local decision-making. There are inherent ambiguities within the LAL, which opens up for this. For instance, Article 105 specifies that if MoLA 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 officials at lower district posts as well. 145

References:

144 Ibid.
145 Ibid.
Local governance elections and governance

In the period between unification in 1990 and 2001, three national, two parliamentary and one presidential elections took place.146 Until 2008, governors were appointed by presidential decree. Following significant political pressure, an amendment was added in 2008 which granted LCs, at both the governorate- and district-level, the right to elect governors. Once elected, the governor was confirmed to hold the post by a presidential decree. The governor elections took place the same year, however, Saleh was discontent with the results, especially in Ad Dali’ and Sa’adah, and he therefore continued to appoint the governors, deputy governors and district Director Generals.147

After the Houthis took over control of the capital Sana’a in 2014, they formed a Supreme Revolutionary Committee and later the Supreme Political Council (SPC) to serve as RoY’s interim authority. In terms of local governance, the SPC disregarded governorate-level security and public service rules and regulations in personnel appointments. Moreover, the Houthis established the so-called “Popular Committees” and “Neighborhood Watch” organizations on a local level to ensure a supervisory role.148 As such, although the Houthis have not made any substantial changes to the local governance framework, they also have not facilitated or strengthened local level governance processes,149 thus undermining the LC’s ability to provide essential services to their communities.

There is a high level of mistrust amongst the people towards the LCs. A lack of accountability of those in power positions in government has been reported as a root cause of conflict.150 Nevertheless, the LCs hold an important role in alleviating the impact of the war and for reconciliation. For example, they are central to mediating between armed groups and fighting fractions; facilitating safe pathways for humanitarian aid on the frontlines; and facilitation of prisoner exchanges between different groups, such as an exchange that took place in Ta’iz between the Houthis and Salafi militias headed by Abu al-Abbas; and settling the disputes that have been triggering revenge killings.151

Public spending & finance

Public debt services, salaries and wages had consumed the remaining reserves held by the Central Bank of Yemen (CBY) by summer 2016, leaving little for much-needed capital investment. Until that point, the CBY had continued to coordinate finances with local governing councils, with a number of key functions including: facilitation of basic public service provision; disbursement of monthly salaries for public servants; protection of the Yemeni rial; and ensure access to foreign currency for import of basic commodities.152

Combined, the de facto government and the GoY employed around 1.2 million civilian and military staff in 2018, who are estimated to support almost one third of the population.153 Most of these employees did not receive steady salaries since 2016. 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; 1) district’s local revenues; 2) joint revenues gathered by the district and the governorate; 3) joint public resources; and 4) financial support by the central government.154 The budget of local councils, however, is neither distinct nor separate from the national state budget. They are, in fact, a subset of the latter which vertically integrates and consolidates taxation and finance from district to governorate to the national budget. This setup considerably limits the authority of the municipalities to amend budgets or reallocate resources to address crises as they arise, and gives LCs little incentive to follow-up on taxation or other revenue generating activities. In addition, the 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, etc. In practice, the degree to which these funds are sufficient to address and alleviate local issues is uncertain.

The LCs are in theory entitled to financial support from the central government for capital investments and recurring operating expenses. According to the 2014 national budget, an estimated 90-95 percent of local council income consisted of transfers from the central government.155 In practice, however, the conflict has considerably reduced the funds available. LC income is ordinarily generated from commercial taxes: building permits, registrations, state-operated utilities, such as water and electricity bills, property transfers, car registrations, fees on sporting events, tourism, entertainment venues, and the like. Yet, income from these resources is meagre given the current situation. As such, the LCs do not have a budget that can cover operations and allow them to address challenges as needed. Ordinary council members do not receive salary, apart from a small stipend to cover their expenses to attend meetings.

---


151 Ibid.


Women’s empowerment

There are many challenges pertaining to women and gender equality in Yemen. The Global Gender Gap Report 2020 ranks Yemen as the worst performing country in the world in terms of gender-gap.156 The UNDP Gender Inequality Index (GII), measuring women’s disadvantages across reproductive health, empowerment, and economic activity dimensions, Yemen ranked 165 out of 166 countries in 2019 (based on 2018 data).157 Women in Yemen do not have equal rights to divorce, inheritance, and child custody, and are underrepresented in education.

However, regional and local customs and traditions play an important part in the extent to which women have a role in political, economic or domestic decision-making. UN Women’s report Women in Conflict Resolution and Peacebuilding in Yemen highlights that the regional and historical differences in women’s role in many cases have been further heightened as a result of the current conflict.158

Field data shows that in governorates where women were historically engaged in peacebuilding, they have continued to play this role since the eruption of the most recent phase of the conflict in 2015. Conversely, in areas where generally women did not have an active role, they typically play a very limited role during more complex times.

A trend of increased participation in the public sphere, where women move beyond socially acceptable roles, has been observed during the conflict. This includes examples of women working with local governance structures, where local leaders reportedly have been open to this. Moreover, women’s role in conflict resolution varies between governorate and local level, and rural and urban areas. For example, female informants in Sana’a report that they have a limited role in conflict resolution on a governorate level, but more influence in the city of Sana’a, including conflict resolution over land, and revenge killings.159

Women’s political representation stood at 1.9 percent in 2014 (Atef, 2014), and 0.5 percent of parliamentary seats were held by women. Despite efforts to increase female participation in decision-making processes, exemplified by a thirty percent female representation at the National Dialogue Conference160 in 2013-14, women’s political participation has been seen to be further repressed during the conflict. As Afrah Nasser writes: Militarization constituted a significant loss for women’s political voice and role in decision-making. Under conditions of war, the push for women’s representation has shifted from political institutions to diplomacy, reconstruction and transitional justice.162

As such, women are still excluded from formal decision making and political structures,163 and it is still to be seen if changing perceptions of women’s participation in the workforce will have an impact on other dimensions or a lasting effect post-conflict.164

The Security Council Panel of Experts on Yemen, documented January 2020 that women who have been politically active, participated in demonstrations, or working for Non-Governmental Organisations (NGOs) on women empowerment projects have been directly targeted by the Houthis, with arrests, detention, ill-treatment and torture used as means of repression (see more on protection issues in the Social Cohesion & Protection chapter). Cases were amongst other documented in Sana’a.165 Several of the most prominent female activists now reside outside the country for security reasons.

Civil Society for women: the examples of Ta’iz

A number of civil society initiatives are working to empower women. In Ta’iz city more than a hundred civil society initiatives are ongoing, involving more than 1500 young people, of which 40 percent are women. Often supported by International Non-Governmental Organisations (INGOs), local committees have been formed to provide health and protection services, and humanitarian aid, where women participate in the delivery of women-specific services, improving social services, including education.166 The engagement seems to have given women not only access to, but also increased their social status and standing among the main political and security actors in the governorate.167 Some women also work on organizing relief convoys, smuggle medicines to hospitals in besieged areas, rescue injured citizens, and cross during fire exchange to help stuck families escape fire lines.168

Women in Ta’iz speak of the personal courage they had shown in approaching militia leaders to negotiate for the release of prisoners of war, including through negotiating across kinship groups they are tied to through marriage.

159 Ibid.
160 Ibid.
163 Ibid
Youth representation

The National Children and Youth Strategy of the Republic of Yemen 2006-2015 is based on a life-cycle framework, where the areas of strategic focus for young people aged 15-14 includes strengthening national identity, youth inclusion and participation.169 Young people in Yemen were instrumental in the uprising in 2011, where the protests and local social movements were initially driven by students and unemployed graduates.170 Further, the Supreme Council for Youth was established as an outcome of the NDC in 2013, with the intended purpose of “institute clear policies and mechanisms for youth participation and inclusion in public policy making”.171 However, a study shows that already in 2013 youth pointed to how undemocratic their institutions had become, even though the political space apparently increased during the 2012-2014 transitional period.172 The failure of applying regulations and monitoring and accountability functions allowed those in power to operate unchecked. Moreover, the conflict has severely hampered the opportunities for CSOs to operate, where the organisations that have remained predominantly focus on humanitarian relief173 (see Civil Society sub-chapter below). As such, there is limited space for youth to be engaged in formal decision making with the possibility to influence the direction of the development of the country nor their own futures.

As a response to the challenges and the potential demographic dividend that the youth bulge in Yemen represents, the GoY has been engaging in several initiatives. These include the National Children and Youth Strategy (2006-2015), the Youth Employment Action Plan (YEP), and recently the National Vision to Build A Modern Yemeni State by the Supreme Political Council (SPC), 2019. Youth were for the first time given a voice in the NDC 2014 to express their needs and concerns, however the NDC outcomes could not be translated into action with the escalation of the war in 2015. Some initiatives in cities including in Sana’a, Al Hodeidah, Ibb, Ma’rib, and Sada’a have focused on training of the war in 2015. Some initiatives in cities including in Sana’a, Al Hodeidah, Ibb, Ma’rib, and Sada’a have focused on training young people in Yemen were instrumental in the uprising in 2011, strengthening national identity, youth inclusion and participation.

Civil society

From a legislative perspective, the Yemeni Law on Associations and Foundations (Law 1 of 2001) is the most enabling law governing CSOs.174 The constitutions allows people to organise themselves along political, professional and union lines, to form associations, and guarantees assembly rights.175 The law makes it comparably more easy to establish and operate CSOs with limited government interference. As a result, Yemen has a considerable CSO sector, including more than 10,000 registered associations and foundations.176 The number of registered CSOs reportedly increased after the conflict erupted in 2011, reflecting the political transition and the growing demand for government accountability and improved public service delivery, particularly in areas where government institutions have had difficulties providing services. In parallel, human rights issues gained greater attention in Yemen, as the signing of a number of human rights treaties, the establishment of the Ministry of the State of Human Rights, a CSOs Human Rights Network, and the draft constitution developed by the NDC demonstrates. The latter highlighted a number of human rights aspects, particularly how the rights of women, children and girls could be addressed in the proposed legal text, and recommendations for reforming existing legal frameworks.177

With their presence on the ground, CSOs are able to reach and engage local communities through a number of development programmes. The GoY has worked with a number of relevant agencies and partnered with a range of CSOs and Community Based Organisations (CBOs) to ensure adequate community participation in development programmes and initiatives. The Social Fund for Development (SFD), established in 1997 to strengthen social safety nets and address support and bolster local economies,178 is an example of how local communities in both rural and urban areas have been involved in programme delivery through demand-driven initiatives. Through this approach, procedures for elections and meetings have been established, including for participation from women in public events. Over the course of the conflict, intimidations, threats, harassment, excessive force, arrests and abductions has been reported to increasingly be used by both state and armed non-state actors, making it more difficult for SCOs and CBOs to operate.179

---


173 Ibid.


177 Ibid.


Continued urban warfare undermines social cohesion, causes increase in civilian impact incidents, and reduces the protection space for the most vulnerable, including women, children, and minorities.

As a result of the ongoing conflict, protection needs are increasing while social cohesion is reducing in Yemeni cities. Some of Yemen’s cities have been hit particularly hard by the fighting between warring factions, leading to a large number of displacements, injuries and casualties. While a decrease in civilian casualties was reported in 2019, there was an overall increase in civilian impact incidents.

At the same time as people are fleeing insecure cities and surrounding areas, other urban areas have received large numbers of IDPs, giving rise to specific protection concerns. Relocation often takes place to inhospitable environments, characterised by social stigma, marginalisation, discrimination, harassments, and tenure insecurity. This may be fuelled by conflicts over assistance and access to local services between host communities and new arrivals. Vulnerable groups, such as children, women, minority groups, elderly, and disabled persons are at particular risk. In general, Sexual and Gender Based Violence (SGBV), harassment, violence, and limitation of rights, including access to services, as well as negative coping mechanisms such as early forced marriage, forced labour, and recruitment of child soldiers, are increasingly being observed.

The conflict has deepened social divisions and the unequal access to social safety nets. This is oftentimes more pronounced in urban areas due to the fluidity of residents, and the heterogeneity of people. To compensate, a system of patronage networks appears to have been established to gain access to government and people in positions of power.

Armed groups present in cities are reportedly collecting ‘tax’ for businesses and residents. Public demonstrations, including in some of the worst hit cities such as Ta‘iz, as well as cities of relative safety such as Al Mukalla, have been held by people expressing their discontent and demanding delivery of services and rebuilding of damaged infrastructure and buildings.

Introduction

From 2015 till the end of 2019, it is estimated that 233,000 Yemenis were killed as a result of fighting and the humanitarian situation. More than 20,000 civilian fatalities and injuries has been documented by the Office of the United Nations High Commissioner for Human Rights (OHCHR). In response to the escalation of violence along frontlines, local de-escalation agreements were negotiated helping to reduce overall number of incidents of violence in 2019 compared to 2018.

In response to the 2020 COVID-19 outbreak, UN Secretary General Antonio Guterres made a specific call for the Yemen conflict partners to end hostilities to facilitate access for humanitarian partners to respond to the outbreak. While a unilateral ceasefire was called by Saudi Arabia early April 2020 and some reduction in incidents were observed, hostilities sustained throughout the first half of 2020 with continued impact on civilian lives.

In 2018, the far majority of civilian casualties were caused by


This was attributed to aerial engagements struggling to distinguish between military and civilian targets, as well as to the frequent targeting of governmental institutions and political figures, including the homes of politicians located in residential areas. In 2019, a decrease in civilian casualties in Yemen was recorded (down 34 percent), however the proportion of child casualties increased to one in four, and 17 percent more civilian houses were impacted compared to the previous year (5,650 houses). Education facilities were the infrastructure type most frequently impacted by armed violence. Moreover, an overall increase of civilian impact incidents was recorded, with shellfire accounting for the greatest direct impact on civilians. In Sana’a however, airstrikes remained the deadliest type of armed violence. The highest number of civilian impact incidents and civilian casualties were recorded in Al Hodeidah governorate, with 966 incidents of recorded violence.

Figure 15: Civilian spaces and civilian casualties (ACAPS Yemen).

<table>
<thead>
<tr>
<th>City</th>
<th>Armed violence incidents</th>
<th>Total incidents</th>
<th>Civilian injuries</th>
<th>Child injuries</th>
<th>Women injuries</th>
<th>Civilian fatalities</th>
<th>Child fatalities</th>
<th>Women fatalities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zinjibar</td>
<td>3</td>
<td>16</td>
<td>10</td>
<td>0</td>
<td>1</td>
<td>6</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Aden</td>
<td>96</td>
<td>364</td>
<td>295</td>
<td>23</td>
<td>6</td>
<td>69</td>
<td>9</td>
<td>6</td>
</tr>
<tr>
<td>Al Hodeidah</td>
<td>534</td>
<td>953</td>
<td>705</td>
<td>107</td>
<td>65</td>
<td>248</td>
<td>43</td>
<td>31</td>
</tr>
<tr>
<td>Sana’a</td>
<td>68</td>
<td>449</td>
<td>379</td>
<td>80</td>
<td>39</td>
<td>70</td>
<td>23</td>
<td>5</td>
</tr>
<tr>
<td>Al Mukalla</td>
<td>2</td>
<td>4</td>
<td>3</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Ibb</td>
<td>14</td>
<td>36</td>
<td>22</td>
<td>2</td>
<td>0</td>
<td>14</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Al Hawtah</td>
<td>13</td>
<td>35</td>
<td>21</td>
<td>10</td>
<td>1</td>
<td>14</td>
<td>4</td>
<td>0</td>
</tr>
<tr>
<td>Mahrbi</td>
<td>39</td>
<td>96</td>
<td>70</td>
<td>14</td>
<td>7</td>
<td>26</td>
<td>7</td>
<td>1</td>
</tr>
<tr>
<td>Sadah</td>
<td>33</td>
<td>99</td>
<td>69</td>
<td>13</td>
<td>7</td>
<td>30</td>
<td>7</td>
<td>13</td>
</tr>
<tr>
<td>Ta’iz</td>
<td>194</td>
<td>633</td>
<td>465</td>
<td>75</td>
<td>54</td>
<td>188</td>
<td>42</td>
<td>47</td>
</tr>
<tr>
<td>Grand Total</td>
<td>996</td>
<td>2686</td>
<td>2039</td>
<td>324</td>
<td>180</td>
<td>646</td>
<td>137</td>
<td>105</td>
</tr>
</tbody>
</table>

Table 7 Armed violence incidents impacting civilians, casualties and structures damaged in cities. (CIMP)


187 Ibid
Figure 16 Number of civilian injuries and fatalities (CIMP).

Table 8 and Figure 17 shows the Civilian Impact Monitoring Project’s (CIMP) incidents data on armed violence reported to have impacted upon civilians in the ten selected cities between January 2018 and June 2020. In total, 996 incidents with 2685 resulting causalities were recorded. Of these, close to one fourth (24 percent) were fatal. The data shows that the civilian injuries and fatalities are highest amongst men, who account for 75 percent of injuries and 63 percent of fatalities, followed by children (16 percent of injuries and 21 percent of fatalities) and women (9 percent of injuries and 16 percent of fatalities).

Al Hodeidah has been most severely affected with 534 incidents and 953 casualties. However, Sana’a has by far the highest rate of casualties to number of incidents, with on average 6.6 casualties per incident, whereas Al Hodeidah has the lowest rate with less than two casualties per incident. This despite that in Al Hodeidah almost 50 percent of incidents are impacting civilian houses (total of 248 houses), which is close to two thirds of the total civilian houses damaged across the ten cities combined.

Security and control in cities

In Ta’iz, Houthis control about one third of the city – including the heights overlooking the northern edge of Ta’iz, while the rest is run by the government. The presence of armed groups in the city as well as crime and social tension, contribute to insecurity and violence. Reoccurring fighting by rivalling parties within the city continued in 2019 with a significant impact on civilian lives as the clashes took place in-between densely populated

neighbourhoods. The worsening circumstances in civil life in Ta’iz, including the collapse of the salaries system, have left the residents increasingly vulnerable to recruitment by armed groups. The police department in Ta’iz is lacking key equipment and an operational budget to address the situation. While about 3,000 members from the resistance forces have been recruited into the security apparatus, there are inadequate funds to train them. Further undermining the police forces and taking advantage of the vacuum of a weak police force, non-state armed groups are running their own makeshift police stations and prisons without the oversight of formal institutions.

All parties to the conflict have detained civilians from areas under the control of the opposing side, including based on their surnames or being from certain families thought to be of a particular political inclination. Detentions for lengthy periods without trial or clear charges are continued. A number of detainees have forcibly disappeared and have been tortured and in some cases killed.

‘Tax collection’ by armed groups have been reported in cities. In Ta’iz, violent clashes erupted among others over control of revenue streams, including tax location from local markets. Private business owners and residents have been experiencing ongoing embezzlement and harassment in cities including Al Hawtah and Ta’iz to contribute part of their earnings to ambiguous city taxation scheme. Levies and “fundraisers” are imposed on business owners and residents to support these groups’ activities. In Al Hawtah, unidentified groups of armed men have been forcing

188 The data accounts for incidents of armed violence that results in direct civilian impact, such as a destroyed house or a vehicle being hit. For information on how the data has been collected and monitored, see CIMP, Civilian Impact Monitoring Project Yemen - Methodology, https://civilianimpactmonitoring.org/methodology.html


business owners to contribute towards a City Improvement Fund without providing proper identification or issuing any receipts. Consequently, numerous businesses have taken their operations elsewhere, seeking safer markets in which to conduct business.\textsupERScript{194}

Public Discontent

Citizens in Taiz took to the streets in October 2019 in an escalation of popular discontent, calling for an end to the corruption that has plagued their city and demanding better benefits, including expediting treatment for casualties of war, providing salaries to employees, and improving sanitation services, among a range of issues. The demonstration’s rallying cry was: “All of you must leave, we want a state of services, not levies, we do not want you because you failed to provide water, electricity, hygiene, health and education, successful authorities in collecting taxes only”. These demonstrations extended to the most prominent streets of the city and included the burning of tires to interrupt traffic.\textsupERScript{195}

Even in Al Mukalla, known as one of the safer cities in Yemen, people are growing increasingly discontent with their situation.\textsupERScript{196} Reconstruction efforts, including the reconstruction of destroyed buildings, energy and water infrastructure, and economic development have been slow to progress, forcing residents to fend for themselves. Furthermore, the continuous influx of IDPs to the city has added additional strain on hospitals, schools, and other services. As a result, people have taken to the streets in protest, and some are also expressing the sentiment that things were better under Al Qaeda rule, who “were good. They imposed order. They imposed efficiency”.\textsupERScript{197}

Availability of Small Arms and other Weapons

Tensions between tribes who took sides in the conflict have exacerbated the situation. In the north, several prominent Sa’dah tribal sheikhs and the country’s most important weapons dealers enjoyed regional as well as international connections. In addition, a lack of oversight of military budgets has facilitated corruption and fostered trafficking inside the military. Throughout the war, army leaders routinely demanded additional weapons; although some were used against insurgents, a significant proportion of these weapons were also diverted, for example to Somalis.\textsupERScript{198}

In Sa’dah, dozens of arms sellers offer a wide range of weapons for sale such as small arms, light weapons, including military style assault weapons, rifles and shells, rockets and ammunition, as well as accessories.\textsupERScript{199} Tribal leaders and senior officials are known to have amassed military hardware and profit from sales of army stockpiles.\textsupERScript{200} Well-known larger markets, such as the al-Talh market, are known to host dozens of weapons vendors selling a wide range of small arms and light weapons.\textsupERScript{201}

Shrinking protection space in Yemeni cities

Yemen is facing the world’s largest protection crisis,\textsupERScript{202} forced displacement, weak rule of law, and widespread violations of International Humanitarian Law (IHL) and International Human Rights Law (IHRL) committed by all parties of the conflict with impunity.\textsupERScript{203} Despite reduction in incidents of violence, the Humanitarian Response Plan (HRP) for 2020 estimates that 14.2 million Yemenis will need Protection assistance in 2020, a slight decrease from the 14.4 million in need in 2019.\textsupERScript{204} However, acute shortfalls in funding saw an overall decrease in people reached with assistance from 15.2 million per month in 2019 to 13.5 million for the two first months of 2020 (across all sectors).\textsupERScript{205} Decrease in assistance was reported across 155 districts, with Sana’a City among the worst affected. The decrease of funding overlaps with the outbreak of the COVID-19 virus which in June 2020 already had caused hundreds of casualties, and further prompted the closure of protection facilities, including child friendly spaces and community centres.

Protection concerns in Yemen are multi-faceted: critical developments include a rise of conflict-related forcible displacement, human rights violations, and negative impacts of the conflict on specific vulnerable groups such as women and children.\textsupERScript{206} Rights Law (IHRL) committed by all parties of the conflict with impunity.\textsupERScript{207} Despite reduction in incidents of violence, the Humanitarian Response Plan (HRP) for 2020 estimates that 14.2 million Yemenis will need Protection assistance in 2020, a slight decrease from the 14.4 million in need in 2019.\textsupERScript{208} However, acute shortfalls in funding saw an overall decrease in people reached with assistance from 15.2 million per month in 2019 to 13.5 million for the two first months of 2020 (across all sectors).\textsupERScript{209} Decrease in assistance was reported across 155 districts, with Sana’a City among the worst affected. The decrease of funding overlaps with the outbreak of the COVID-19 virus which in June 2020 already had caused hundreds of casualties, and further prompted the closure of protection facilities, including child friendly spaces and community centres.

Protection concerns in Yemen are multi-faceted: critical developments include a rise of conflict-related forcible displacement, human


\textsupERScript{197} Ib.  


The Impact of the Conflict on Children

It is estimated that country-wide a total of 12.24 million children (under 18 years old) is in need, including 2 million internally displaced children. About 50 percent of Yemen’s IDPs are between 5-17 years old. Children are disproportionately and increasingly affected by the conflict and the humanitarian crisis. Severe child protection issues include child recruitment into armed groups, increased child labor, forced early marriage, as well as a growing number of unaccompanied/separated children as well as children suffering psychosocial trauma from armed attacks.

From April 2013 to December 2018, the UN verified 11,779 grave violations against children in Yemen, with 47 percent of all incidents being killing and maiming, mostly as a result of air strikes, followed by ground fighting (40 percent). According to CIMP, children accounted for one-quarter of civilian casualties in 2019, up from one-fifth in 2018. Ta’iz and Al Hodeidah are the two deadliest areas for children in Yemen. Between January and October 2019, 33 children have been killed or injured every month in the western port city of Al Hodeidah and Ta’iz in the southwest, despite the signing of the Stockholm peace agreement on 13 December 2018 aimed at stopping the fighting in the Red Sea area. In Ta’iz, child fatalities have more than doubled since the agreement. An investigation by Amnesty International in 2019 revealed that children as young as eight years old have been raped in the city of Ta’iz. A pattern of impunity and reprisals has thus far discouraged families from reporting these incidents, especially since suspects are reported to be politically aligned with the local Islahi-controlled authorities.

In 18 out of 22 governorates, children are at greater risk of being exposed to injuries caused by mines and other unexploded ordnance. Despite the risks, 66 percent of children do not know how to avoid the risks of explosive remnants of war (ERWs), despite 50 percent of IDPs having undergone mine risk education. In Sa’da for example, 890 children (50 percent) had physical disabilities attributed to the conflict.

Risk and violations to children and youths’ rights and welfare

Risks to children’s welfare are widespread, including the risks of violence, harassment, sexual exploitation, and early forced marriage. The actual extent of grave violations of children’s rights is almost certainly far higher than reported; underreporting is attributed to a lack of access in some conflict-affected communities as well as sensitivities around protection issues. From the information available, it seems that particularly early forced marriage is becoming more common due to the increased need for supplemental income and protection by affiliation. Several reports state that the conflict has led to an increase in child marriage as families are seeking dowry payments to cope with conflict-related hardship and to protect their daughters from harassment and destitution. Research by INTERSOS suggests that prior to the conflict the practice of early marriage had reduced but that the conflict reversed this trend as

a result of poverty and social insecurity. The NDC’s draft Child Rights Law recommendations including to set a minimum age of marriage of 18 years in 2014 has not been approved as the conflict escalated. According to a United Nations Children’s Fund (UNICEF) 2017 study on early marriage, 72.5 percent of women were married at the age of 18, of these 44.5 percent were married at the age of 15. Further, many families are continuously moving towards negative coping mechanisms, such as petty crimes and child labour, which also could include child recruitment into the many armed groups operating in the cities and surrounding areas. There has been a significant increase in cases where children are targeted for human trafficking.

Among the top ten governorates where child rights violations have been recorded, Ta’iz ranks highest with reports indicating that warring parties recruited children as young as ten years old in the fighting. In 2015, the Amanat Al Asimah counted for the highest number of recruitment of children as soldiers (435), followed by Ta’iz (238) and Amran (226).

In interviews with Community Focal Persons (CFPs) in Zinjibar City, 58 child-headed households were identified, where either the rest of the members of the household unit recognized the child as head of household, or because the child was living by him-/herself. Furthermore, 608 orphans were identified in the same city - a relative high figure against the total population of 40,707.

As further discussed in the Youth unemployment sub-chapter in Economy, amongst the main challenges for young people in Yemen is a restricted labour market. There is very high and increasing under- and unemployment, particularly amongst youth as more young people enter the market. The dire economic situation is facilitating the mobilisation and recruitment of children by warring parties. This overlays challenges associated with displacement as well as exclusion from political processes. These factors all contribute to a situation where many young people are deprived of envisioning a future, or of being in a position to change their own situation to the better. As one Adeni health official mentioned: “There is an increase of number in drugs addiction under young people after 2015, most of who are between 18-35 years old. They buy drugs in the streets and in the neighbourhoods. The police know them by name, but they can’t do anything about it. They are not interested anymore in schools and we try to tell them this is wrong, but they won’t listen”.

Photo 4 Children Carrying water in Taiz (UN-Habitat 2020).

Protection Concerns for Women

<table>
<thead>
<tr>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>220</td>
</tr>
<tr>
<td>221</td>
</tr>
<tr>
<td>222</td>
</tr>
<tr>
<td>223</td>
</tr>
<tr>
<td>224</td>
</tr>
<tr>
<td>226</td>
</tr>
</tbody>
</table>
The gender roles have been seen to be shifting as a result of the conflict. As discussed under the Women’s shifting roles in the Governance chapter, where and how these roles are changing are closely linked with tribal and cultural traditions in the given area. 227 Moreover, as discussed in the Economy chapter, changing gender roles as a result of the conflict has amongst others led to more women taking up work, or taken on other types of work than before. At the same time, there is evidence to suggest that changes due to the conflict have also further exacerbated pre-existing protection concerns and an intensified repression of women and girls. 228, 229

The deteriorating security and economic situation are disproportionately affecting women and girls, limiting ability to exercise their rights, accessing services, and increased exposure to SGBV. 230 Women have also been directly targeted and detained for public engagement.

In a letter to the Security Council January 2020, the Panel of Experts on Yemen provided evidences of direct and indirect targeting of women who were, or were perceived to be, a threat to Houthi rule. A growing pattern of repression was reported, including arrests and detention, including exposure to torture and rape due to political affiliations and activities, as well as public protests. The panel further noted that these women were threatened with charges of prostitution (inflicting shame and alienation from their families) and organized crime. 231

While most victims of detention-related abuses are men, women have also been detained, mistreated, and sentenced to death following unfair trials. 232 Open source information reports that dozens of women are held without bringing them to trial or charging them with a crime. 233 In Al Hodeidah city, for example, regional media reports that 12 women are imprisoned. 234 There have been reports of several women overstepping in Ta’iz prison although they completed their sentence, due to their inability to pay. Health service is very poor in all prisons and women are rarely provided with health care, even during pregnancy and delivery. 235

In several regions, women have protested the detention and/or enforced disappearance of their male family members. Given the reliance on male household members to sustain income and secure protection and access to services, female family members are suffering directly from the detention and/or enforced disappearances of their family members. Women forced to become the main caregivers are increasingly exposed to SGBV.

As men have been more affected by movement restrictions, women have increasingly had to travel alone to access services. This is adding to the risk of SGBV on roads or at checkpoints. In Ta’iz, men and women have been exposed to violence and harassment when crossing the number of checkpoints manned by different armed groups and active conflict, posing particular risks to women and girls. 236 Further, women and girls are at greater risk of protection as well as health threats in areas where they are responsible for fetching water and fuel. Their ability to reach health, nutrition, and other basic services remains a challenge due to long distances, dangerous routes, and lack of financial means to afford transport. Restrictions on street vending, with negative impact on the coping mechanisms of vulnerable groups, including women have been imposed by local authorities, amongst others noted in Zinjibar. 237

### Increasing Sexual and Gender-Based Violence

A higher prevalence of SGBV, forced marriage and child marriage have been reported in Yemen. 238 Reporting cases of GBV and especially sexual violence remains particularly difficult because of social conservatism and stigma. With this caveat, an increase by 36 percent between 2016 and 2017 and by an additional 70 percent in 2018 was observed of reported SGBV cases, with three million women in Yemen at risk of violence in 2018. 239 The escalation of the conflict and economic pressure are increasing risks of SGBV and increased vulnerability to violence and abuse, 240 with displaced women, poor women, female beggars, and Muhamasheen women being particularly vulnerable, including to sexual exploitation. 241 SGBV, particularly cases of violence by family members against women, girls and boys, has increased by more than 63 percent compared to the pre-war situation. 242

In December 2018, UNFPA

---


228 Ibid.


230 Sexual violence is in this report included in the term GBV


237 UN-Habitat, Zinjibar City Profile, 2020


240 Ibid


242 Ibid.
Women or girls who have been displaced suffer disproportionately, not just directly due to the conflict and humanitarian crisis but also as a target, both at the household and societal level, for violence, abuse, and exploitation.\textsuperscript{250}

**Displacement towards the cities**

Sa’dah is an example of where IDPs have found themselves in crossfires between parties to the conflict inside the city. Out of an estimated 130,000 persons displaced in 2008 as a result of conflict in Sa’dah governorate, 40,000 people lived with relatives inside the city.\textsuperscript{251} The IDPs in Sa’dah city cited inadequate attention to displacement needs, lack of adequate monitoring, and alleged discrimination in provision of assistance based according to political or tribal affiliation as main challenges.\textsuperscript{252} The intensity of conflicts in Sa’dah has oscillated, with corresponding increase or decrease in number of IDPs in the city. According to the Task Force on Population Movement (TFPM), in late March 2018, airstrikes intensified in Sa’dah governorate with escalated cross-border attacks with indiscriminate damage to the properties of civilians, loss of life and increased fear among the population, with a resulting 121,698 individuals displaced.\textsuperscript{253}

In Ta’iz, pressure have been placed on IDPs to vacate buildings and land due to competition over already scarce resources, and a local perception that IDPs are receiving preferential treatment through humanitarian assistance over non-displaced host communities in the city.\textsuperscript{254} The conflicts over assistance and access to local services between IDP and host communities have been seen to result in conflict and violence, and reinforced regionalist or tribal affiliations. This resonates with the findings in Oxfam’s protection assessment, where the majority of people said criminality had increased and crimes went unpunished, where higher crime rates exacerbate tensions and mutual distrust between displaced people and host communities who often blame their new neighbours for breaches of the law.\textsuperscript{255} However, the assessment also found that across all regions included in the research “relations between displaced people and host communities are generally sound”.\textsuperscript{256} In reality, many of the same protection concerns apply to both host communities and IDPs. For example, in Ta’iz, both host communities and IDPs frequently complain about inequality and discrimination, as they are often denied access to humanitarian assistance.
State of Yemeni Cities

Photo 3 IDP settlement outside of Aden city (UN-Habitat 2020).

Photo 4 Water collection at IDP settlement outside of Aden city (UN-Habitat 2020).
Safe return

Nearly 70 percent of returnees in Yemen are found in three main cities: Aden, Sana’a and Ta’iz. Substantial numbers of returnees are living in damaged houses, unable to afford repairs and faced with serious protection risks. The slow return rate is due to a wide range of impediments including the abundance of mines and unexploded devices, large scale destruction of housing and infrastructure.

People with disabilities

Yemen is a state party to the Convention on the Rights of Persons with Disabilities (CRPD) and its Optional Protocol, signed in 2007 and ratified in 2009. In June 2019, the UN Security Council (UNSC) unanimously adopted the first resolution on the protection of persons with disabilities in armed conflicts. The resolution calls on states and parties to armed conflict to protect persons with disabilities in conflict situations and to ensure they have access to justice, basic services, and unimpeded humanitarian assistance. At a national level, articles on disability are included in the Constitution (e.g. Article 56); an overarching national disability law has been established in 2002, namely Law No. 2 creating the Disabled Care and Rehabilitation Fund for people with disabilities; and in 2014, a National Disability Strategy was adopted.

While there is no reliable data available on the number of people with disabilities in Yemen or their needs, estimations suggest that 4.5 million Yemenis have disabilities, with the most commonly reported disabilities relating to mobility, visual, hearing, cognition, and communication. Despite acute needs, the conflict has severely affected implementation of the national disability strategy, with organisations providing services for persons with disabilities reduced from 300 prior to the conflict to a current 26 organisations. Amongst the protection risks faced by persons with disabilities are: being left behind at home if the family has to flee; the disability getting worse as a consequence of travelling; difficulties getting food, water, medicine or other necessities, particularly if items are located far away; no access to toilets, or only toilets that are difficult to use; and exclusion from planning and decision making.


266 Ibid.
Minorities in the City: the case of the Muhamasheen (marginalized)

The absence of adequate mapping of the location of Muhamasheen in the areas most affected by conflict makes it difficult to reach these communities and to make accessible protection mechanisms. The escalation of the ongoing conflict since March 2015 has greatly magnified the Muhamasheen community’s poverty, increased displacement and further hampered their social standing. The Muhamasheen were among the first groups to be displaced in the conflict, exacerbating existing discrimination. Oftentimes, the Muhamasheen are displaced to the edges of the cities or towards frontlines.

In 2016, Muhamasheen in Ta’iz began moving into highly volatile locations, closer to the fighting or in proximity to military zones. In Sa’dah it has been reported that a number of Muhamasheen have returned to the city as they felt that the treatment and living conditions in host areas and camps were so demeaning that they “preferred the bombs”. Reports indicate that Muhamasheen are being prevented by other IDPs from having access to IDP camps or shelter in “collective centres” located in schools, health facilities, religious buildings, and vacant public and private buildings. As such, displaced Muhamasheen are forced into “spontaneous settlements” and have had to reside in open farmlands, parks, and other public spaces where they often face hostility from the local community and landowners. They are often excluded from efforts by host communities and local authorities to support IDPs, and regularly face eviction threats from land where they take refuge. Reports suggest that in some cases, like Al Hawtah, even “Local Elders” (government appointed neighbourhood mediators) have been accused of human rights violations perpetrated against Muhamasheen. When Muhamasheen claim their rights, stand up for themselves in a dispute or engage in acts to increase upward social mobility, they often face further discrimination and violence.

Legal mechanisms and documentation

As noted in the Governance chapter, both national and tribal laws prevail in Yemen. Urban Yemenis largely turn to formal justice mechanisms and other nontribal dispute resolution, such as commercial arbitration. However, insufficient funds to access services are amongst the key reported barriers to access legal and law enforcement services, suggesting that the local law enforcement apparatus is inundated with corruption. The cost and inefficiency of formal system thus make urban residents turn to tribal customary laws for dispute resolution.

CFPs in Al Hawtah city noted that civil documentation, to their knowledge, is not a major issue. As per their understanding, virtually all of its original residents are currently in possession of a national ID card, a marriage registration/certificate and/or divorce certificates, or in possession of their birth registration/certificate. About all of its residents were believed to be in the possession of a passport and family booklet. According to the CFPs, approximately 80 percent of IDPs are in possession of birth registration documentation; however, only an approximate 8 percent in possession of their family booklet.

In Zinjibar, CFPs reported that 95 percent of the population is currently in possession of a national ID card, 100 percent of the population in possession of their marriage registration/certificate, but only 25 percent of the population in possession of their divorce certificates. Moreover, 98 percent of the population is currently in possession of their birth registration/certificate. 50 percent of the population is currently in possession of a passport and family booklet, similar to Al Hawtah city. However, only an approximate 15 percent of IDPs are in possession of their family booklet. In Zinjibar, approximate 75 percent of IDPs were reported to be in possession of birth registration documentation.

However, according to KI data, civil registry facilities are currently not operational in Al Hawtah city nor Zinjibar city (including the civil registry in Khanfar), presenting a challenge for future birth declarations and recognition of deaths processed, as well as matrimonial matters such as the registrations of divorce cases.

Social Safety Nets

The fighting and unrest in Yemen is a mosaic of multifaceted local, regional, and international power struggles that are the legacy of recent and long-past events. The conflict itself may have started as a dispute between specific groups, but since then multiple new fault lines have emerged. One of the most prominent of these lines is a social fault line, where the conflict has affected social dynamics within communities, and increased social polarisation and weakened social safety nets. While tribal affiliations traditionally has been core to social identity (see Context; Religious and Tribal affiliations), according to the World Bank, urban residents have established patron-client ties with wealthy individuals with influence, while networks of solidarity are generally weak due to inefficiency of formal system thus make urban residents turn to tribal customary laws for dispute resolution.

As noted in the Governance chapter, both national and tribal laws prevail in Yemen. Urban Yemenis largely turn to formal justice mechanisms and other nontribal dispute resolution, such as commercial arbitration. However, insufficient funds to access services are amongst the key reported barriers to access legal and law enforcement services, suggesting that the local law enforcement apparatus is inundated with corruption. The cost and inefficiency of formal system thus make urban residents turn to tribal customary laws for dispute resolution.

CFPs in Al Hawtah city noted that civil documentation, to their knowledge, is not a major issue. As per their understanding, virtually all of its original residents are currently in possession of a national ID card, a marriage registration/certificate and/or divorce certificates, or in possession of their birth registration/certificate. About all of its residents were believed to be in the possession of a passport and family booklet. According to the CFPs, approximately 80 percent of IDPs are in possession of birth registration documentation; however, only an approximate 8 percent in possession of their family booklet.

In Zinjibar, CFPs reported that 95 percent of the population is currently in possession of a national ID card, 100 percent of the population in possession of their marriage registration/certificate, but only 25 percent of the population in possession of their divorce certificates. Moreover, 98 percent of the population is currently in possession of their birth registration/certificate. 50 percent of the population is currently in possession of a passport and family booklet, similar to Al Hawtah city. However, only an approximate 15 percent of IDPs are in possession of their family booklet. In Zinjibar, approximate 75 percent of IDPs were reported to be in possession of birth registration documentation.

However, according to KI data, civil registry facilities are currently not operational in Al Hawtah city nor Zinjibar city (including the civil registry in Khanfar), presenting a challenge for future birth declarations and recognition of deaths processed, as well as matrimonial matters such as the registrations of divorce cases.
the stresses of urban life and heterogeneity of people in the towns and cities. As such, Yemen’s cascading system of patronage networks serves the narrow interests of elites and those who consent to these “emerging” governance structure. There is deep mistrust of government and institutions, and many Yemenis view the state as indifferent in implementing the rule of law in a way that could bring equal opportunity or justice.

As such, social resilience in urban areas across Yemen is challenged by a combination of factors. The conflict, risk of famine, disease outbreak, and collapsing basic services and institutions present multiple threats to human security and vulnerability in the cities. Layers of vulnerability caused by displacement, loss of heads of households etc. has resulted in the breakdown of community support structures, contributing to a push towards negative coping mechanisms. The UNDP Resilience Monitor found that a majority of people interviewed in six governorates did not perceive strong solidarity within their community or within neighbouring communities. In Aden Governorate and Sana’a city, more than 30 percent of people interviewed said they have problems among community members on at least one of the following three issues: access to livelihoods, natural resources and living spaces.

In Al Hawtah for instance, the decline in social capital was attributed to one of the following: a persistent inequality in accessing water and land; economic marginalization of certain groups (often based on political affinity or allegiances or lack thereof, where youth and women are often the victims of marginalisation); a decline in the traditional livelihood system the city had grown accustomed to; or social and economic marginalization of IDPs and inequity in infrastructure expenditures.

---


283 UN-Habitat, Al Hawtah City Profile, 2020
Economy

A crumbling economy heavily dependent on agricultural and oil, further augmented by recent natural and man-made shocks and recession in the global economy. Increase of women’s participation in the labour market, yet high levels of unemployment amongst youth and women.

The economic crisis in Yemen is characterised by extremely high poverty levels and large under- and unemployment. The ongoing conflict, high population pressure, restricted access to foreign markets and the blockage and destruction of ports with corresponding adverse effect on import and export of goods including oil, have resulted in a war economy. Furthermore, the rapid depreciation of the Yemeni rial, plummets prices of food and other essential goods, and a sharp drop in remittance, coupled with major cuts in donor support for humanitarian aid, is further driving the economy towards collapse.

The economic structure of Yemeni cities is diverse, but has historically centred on agriculture, fishery, and oil and gas production. While the agriculture sector has been severely impacted by the conflict, Yemen’s economy is still to a large degree dependent on agriculture. This is also the case in cities, where agrobusinesses, trade and export of agricultural products has been important. Yemen also has a rich and important cultural and architectural heritage, with considerable potential for tourism.

Yemen’s location at the entrance to the Red Sea has been decisive for the country’s economic development, and particularly the growth of port and coastal cities and cities along main travelling routes. In the conflict, port cities such as Al Hodeidah, Al-Makha, and Aden have become areas of contestation, where fighting frictions are trying to control and leverage economic assets, including import and export of goods.

The country has a very young population, many of whom are out of work. The trend of young men coming to the cities looking for work seems to have been amplified with the retraction of the agricultural sector and high displacement.

Yemen is ranked last of 153 countries in the World Economic Forum’s Global Gender Gap Index 2020, reflecting high structural and cultural barriers to women’s participation in the labour market. However, a trend of more women stepping into roles traditionally filled by men has been observed as a result of the current conflict, including more women looking for paid work. Whether the economic empowerment translates into more influence in decision-making or would last beyond the conflict, however, is not yet clear.

Macroeconomic context Yemen

Yemen was already the poorest country in MENA region before the conflict broke out in 2015. Poverty was estimated to affect half of the population before the crisis, and have increased to currently affect 71-79 percent of the population. Since the start of the conflict, Yemen’s economy has contracted by nearly 50 percent, with cumulative 66.5 billion dollars loss in Gross Domestic Product (GDP) over the 2015-2019 period. In 2018-19 alone, Yemen experienced extensive currency depreciation, 600,000 jobs were estimated to have been lost, with more than 40 percent of Yemeni households having lost their primary source of income. Being a predominantly agricultural-based economy, a one-third reduction of employment in the agricultural sector has severely impacted people’s livelihood opportunities. Moreover, of the around 1.2 million civilian and military staff employed by the de facto governments and GOV, and who are estimated to support almost one third of the population, most do receive consistent salaries.

In parallel, prices of basic commodities are soaring, with average food prices nearly 150 percent higher than prior to the conflict. CFPs in the surveyed cities report that it is difficult to even buy the minimum amount of food. While oil and gas production, which at one point made up two-thirds of state revenue and nearly 90 percent of export revenue, has nearly disappeared, fuel prices rose by 200 percent in 2018 compared to pre-crisis, and there is a brewing fuel crises in the northern governorates today. Combined, energy shortage, inflation, social and structural destruction, reduction in foreign exchange resources including remittances, as well as smuggling and lawlessness, represent major threats to an already small formal economy as well as the informal economy.


286 Ministry of Planning & International Cooperation, “Yemen Socio-Economic Update 2020,” Monthly Market Watch, Issues, 2020, accessed: July 22, 2020, https://www.vimye.org/opsnapᵗrait. the average fuel imports reached 157 thousand tons per month, covering on average about 29% of the domestic demand of that period. Consequently, the fuel demand gap was estimated at 71%, i.e., about 386 thousand tons per month on average during the period Janu-ary 2018-Novem-ber 2019. This indicates that fuel shortage in Yemen is a major factor in the crisis of the soaring prices of oil deriva-tives since their price trending is dictated by the volume of supply on the market. In order to provide foreign currency for petroleum importers, the central bank in Aden offered them a number of banking and foreign exchange services through commercial banks at prices lower than those on the market. This crisis has resulted in the following: Economic repercus-sions, including: i


288 Ibid.

289 CFP interviews, UN-Habitat 2020


State of Yemeni Cities

Table 8 Key economic indicators.

<table>
<thead>
<tr>
<th>GDP per capita PPP $</th>
<th>667.9</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gini index</td>
<td>36.7</td>
</tr>
<tr>
<td>Poverty (population in multidimensional poverty, headcount) %</td>
<td>47.7</td>
</tr>
<tr>
<td>Aid per capita $</td>
<td>280</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>GDP growth (%)</td>
<td>4.8</td>
<td>-0.2</td>
<td>-28.1</td>
<td>-9.8</td>
<td>-5.1</td>
<td>0.8</td>
<td>2.1</td>
<td>-3</td>
</tr>
<tr>
<td>Unemployment</td>
<td>17.6</td>
<td>17.5</td>
<td>18.1</td>
<td>17.1</td>
<td>13</td>
<td>12.9</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inflation rate</td>
<td>11</td>
<td>8.2</td>
<td>22</td>
<td>21.3</td>
<td>30.4</td>
<td>27.6</td>
<td>10</td>
<td>26.7</td>
</tr>
</tbody>
</table>

Economic activities and linkages

Yemen’s landscapes and topography has been central to the development of the country, including the location and growth of different cities and their economies. The historic development of cities and growth of key sectors reflects the cities geographical position, with either sea-connection or located on major travel routes, as well as the availability of natural resources. At the same time, the country’s mountainous topography has been a barrier to connectivity between cities and the expansion of cities, making transportation of goods and trade between cities more challenging. The largescale damage to infrastructure over the past years, as well as roadblocks, check points, and naval blockages, has further reduced connectivity.

Figure 17 Yemen Economic and Livelihood Zones (UN-Habitat 2020, compilation of various sources).

294 World Bank Development Indicators 2018; International Monitoring Fund. UNDP, Human Development Report 2019
Figure 20 gives a broad overview of Yemen’s landscapes and associated economic activities. Fertile lands are located in the highlands and coastal regions, primarily in the western and southern parts of the country where most of the urban centres are found. The northern and eastern parts are mostly desert. This is where the oil and gas fields are located, mostly in Ma’rib and Hadhramaut governorates. Along the coastline there are seven ports, including Aden, Al Hodeidah and Al Mukalla, as well as an oil refinery in Aden and a liquefied natural gas (LNG) plant in Balhaf. Table 9 provides an overview over the key economic sectors and their significance in the ten cities.
<table>
<thead>
<tr>
<th>City</th>
<th>Rural-urban economy</th>
<th>Fishery</th>
<th>Oil</th>
<th>Industry &amp; commerce</th>
<th>Tourism</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aden</td>
<td>Connected to Al Hawtah and Zinjibar which function as breadbaskets for the city.</td>
<td>Industry &amp; commerce</td>
<td>Tourism</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Al Hawtah</td>
<td>Non-functional.</td>
<td>Main economic sector, hub for refineries and small ports for local shipping.</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Sana'a</td>
<td>Characterized by rural-urban economy.</td>
<td>Tourism targeting the close-by areas.</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Ta'iz</td>
<td>Connected to Al Hawtah and Zinjibar which function as breadbaskets for the city.</td>
<td>Non-functional.</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Ibb</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Zinjibar</td>
<td>Characterized by rural-urban economy.</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

Al Hodeidah is an industrial and agribusiness centre, producing over 40% of the national agricultural products.
<table>
<thead>
<tr>
<th>City</th>
<th>Major economic driver and Zinjibar which before the conflict, Aden still hosts commercial and industries have Restructured as new economic base. Characterized by rural-urban economy</th>
<th>Important commercial centre for exporting agriculture products</th>
<th>Concentration of national economic activities, including banking and financial services, restaurants, hotels as well as industrial production.</th>
<th>Non-functional, but great potential for tourism, with its medieval Old City, included in UNESCO’s World Heritage Sites in 1983, if protected.</th>
</tr>
</thead>
<tbody>
<tr>
<td>71</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 9 Economic sectors and their significant in the ten cities, with agricultural land, industrial and commercial activities mapped out (UN-Habitat, 2020).

295 World Bank, “Hodeidah: Agro-Industrial Capital of Yemen.” 2008, http://siteresources.worldbank.org/INTLED/Resources/338650-1122490529865/Hodeidah_CDS_072308.pdf with the issuance of the Local Authorities Law No. 4, Yemen has been pursuing an ambitious decentralization agenda. This agenda aims to delegate greater fiscal and administrative authority to local governments and to give communities –public leaders, residents, and investors – more control over the economic and social development of their cities and towns. To date, city development strategies (CDS)
State of Yemeni Cities

Damage assessment Sana’a.

- **Al-Qahira**
  - No visible Damage (2)
  - Moderate Damage (1)
  - Severe Damage (4)
  - Destroyed (1)

- **Al-Mudhafar**
  - No visible Damage (3)
  - Moderate Damage (9)
  - Severe Damage (3)

- **Salah**
  - No visible Damage (2)
  - Moderate Damage (3)
  - Severe Damage (6)
  - Destroyed (1)

- **Zinjibar**

- **Khanfar**

---

**Disclaimer:**

The boundaries, names and designations used in this map do not imply official endorsement or acceptance by iMMAP.
Changing economic roles for Yemeni cities

The economic importance and relative positions of Yemeni cities have changed over time. The dynamics driving these changes are multiple, where the historic development, including the unification of the country and the recent conflict, has impacted the urban economies in different ways.

For example, from the south claimed their independence from the British in 1967 to unification of Yemen in 1990, Al Mukalla was considered to be the second most important city in south Yemen after Aden. However, with the unification, the urban settlement structure changed and Ta’iz grew in importance to become the second largest city in the south. Recently, and as a result of the current conflict, the relative position of cities is once again changing: Ta’iz has been severely impacted by the fighting, with a large share of its population fleeing to areas of relative safety and perceived income opportunities, while damage to infrastructure and systems is adversely impacting the city’s economic activities and the livelihoods of its remaining residents. While experiencing a net loss of more than 270,000 IDPs by 2019, Ta’iz still remains the third largest city in Yemen after Sana’a and Aden.

The unification of Yemen and the selection of Sana’a as the new national capital also meant that Aden lost much of its advantage as the political and economic centre of south Yemen. To offset the loss and maximize its commercial advantage and trading potential, a free trade zone (AFZ) was established with ports for import and export of products. With the construction of the new Aden Container Terminal (ACT) in 1999 and rehabilitation of infrastructure that had been damaged by the civil war in 1994, Aden became the largest port in Yemen, directing the bulk of investments to Aden’s port facilities. Until the unification of the country, Al Hodeidah had the only port in Yemen with the capacity to accommodate large quantities of shipment. The establishment of the AFZ was thus in direct competition with Al Hodeidah’s port. Still, Al Hodeidah had established itself as the primary industrial and manufacturing hub of Yemen prior to the conflict, and the principal maritime gateway to northern Yemen. The port function of Al Hodeidah has suffered from the blockade imposed during the conflict, where imports have had to be redirected to the port of Aden.

Certain governorates with natural resources or export facilities, such as Ma’rib and Hadhramaut, have experienced increased levels of autonomy over the past years. This impacts the financial relationship between central and local government, where these regional authorities have greater freedom to spend their local revenues, as well as between different governorates as these have relatively larger budgets compared to other governorate administrations.

The economic importance of cities is also a decisive factor for which cities have been the most contested, and which cities have received the greatest attention from the government and international community. Residents in Ta’iz, for example, points to the less important economic role the city holds relative to other cities such as Al Hodeidah and Mocha as a key reason why there has not been a greater effort to end the siege of Ta’iz.

Economic sectors

Agriculture, Agro-economy and value chains

The economic structure of Yemeni cities is diverse, but has historically centred on agriculture, fishery, and oil and gas production. Yemen still has a predominantly agricultural-based economy, with close to 70 percent of the workforce being employed by the agricultural and fishery industries. As such, agriculture constitutes an important economic sector also for many urban and peri-urban areas, either directly through agricultural production, or indirectly through food processing, trade, markets, and other activities. The degree to which agriculture contributes to urban economies is partially dependent on the availability of fertile land and water in proximity to the cities. Since water resources are not readily available in Yemen, farm irrigation and cultivation has long been reliant on the rainy season and successful management of flash floods, thus limiting agricultural production and growth of the sector. Some cities, such as Al Hawtah, have utilized the flood plains for irrigation systems to carry seasonal rainwater from the mountains. Of agricultural production, khat is the major cash crop produced by 70 percent of farmers, accounting for one-third of agricultural production in 2007 but only 6 percent of GDP. By 2008, nearly 60 percent of all land cultivated for cash crops was allocated to khat production. The cultivation of khat is at the expense of other foods crops, requires significant quantities of water, and has severe economic consequences for people who spend a large share of their income and time on the consumption of the plant. It is reported that 90 percent of men and 25 percent of women regularly chew khat, and that some spend more money on khat than food.
Agrobusinesses, trade, and export of agricultural products contribute significantly to urban economies. Sa’ddah, Al Hawtah, Ma’rib and Zinjibar are cities characterized by smaller populations and economies based on the close integration of the city with its hinterlands (rural-urban based economies). Sa’ddah city, for example, is a commercial centre for exporting agricultural products produced in the governorate, which is known for its highly productive arable lands and terraces. In Sa’ddah, export of 30,000 tons pomegranate annually was an important source of income before the war began in 2015. In October 2018, international media reported that pomegranate exports had fallen by a third, with farmers blaming this on a lack of fuel and water for irrigation. In Al Hawtah, approximately 20 percent of the district consists of agricultural land, with agriculture being a central economic activity. This includes crop production (mainly millet and sorghum) and animal husbandry. Similarly, Zinjibar is surrounded by large farmlands producing a variety of vegetables and fruits, with most of the fruits and vegetables sold in Aden.

In general, horticultural crops, such as mango, dates, and pomegranate, are produced for domestic sale and some international export, but there are few processing facilities to produce juice, concentrate, and other associated products. In Al Hodeidah however, the agricultural production in areas surrounding the city has made food processing a major industrial activity. The city produced over 40 percent of the national agricultural products in 2009, with agribusiness based on animal and crop production, farm related industries, and indirect investments.
Fishery
Fishery has been an important industry for coastal cities in Yemen, estimated to employ 500,000 people who support 1.7 million dependants, and generating a $60 million revenue per year. Benefitting from the World Bank’s Port Cities Development Program (PCDP), Al Hodeidah’s was generating more than half of Yemen’s supply of fish prior to the conflict. However, the conflict dealt a heavy blow to the sector and many fishermen and their families have been displaced toward areas where the conflict is less intense. Fisheries also represented one of the main active sectors of economy in Zinjibar, Aden and Al Mukalla before the conflict. While there is now only one fully functioning privately owned fishing port left in Zinjibar, fishery remains an important sector constituting around one third of the economy in 2018.

Aden’s blue economy has also been affected by the conflict, but the city still hosts commercial fisheries ports and small ports and markets for local fisheries. In Al Mukalla, half of the fishermen and a majority of the food and fish processing companies in Hadramout are based in the city, its vicinity and in the nearby city of Al Shih. Currently, a potential oil spill is posing a real and severe threat to the fishing industry, which could take out the entire fishing industry in the Red Sea for 25 years.

Oil
According to data from the Central Bank of Yemen (CBY), income from oil exports fell from $2.6 billion in 2013 to $1.6 billion in 2014 due to maturing of oil fields, sabotage and falling oil prices. In 2015 and 2016, exporting oil became almost impossible due to the security situation and the blockage and damage of ports. The effect of the disappearance of the oil and gas export sector, which once made up two third of state revenue and nearly 90 percent of export revenue, is adverse. Oil production and export improved in 2019 compared to 2018, however the sector continues to be affected by production halts and sabotage activities.

In the 1990-2012 period, Ma’rib and Hadhramaut governorates produced 40 and 50 percent of oil production respectively, while gas was produced in Ma’rib governorate only. Since Ma’rib’s first oil refinery was built in 1986 by Safer Company, it has provided a substantial proportion of the country’s domestic oil needs. In Aden, the most important industry component since 1950s has been the petroleum refining, which was further bolstered with the establishment of the ACT. Before the conflict, some ports located close to the oil refinery factories were fully operational, exporting oil and gas.

Fuel subsidies constituted a large share of the government’s budgeted expenditures prior to the conflict. In 2008 more than 30 percent of the national budget were allocated to fuel subsidies, which was more than one and a half times the expenditure on education and health combined. The fuel subsidies were abolished by the Houthis in 2015, a year after the Houthis protested cutting of subsidies in 2014. As a result, from 2015 onwards fuel prices have been high and volatile, with significant variation across the country. Figure 30 shows the price trends of diesel, petrol, and gas at the end of the 2014-2019 period: the price of diesel surged by almost 300 percent and petrol and cooking gas by close to 250 percent respectively. Figure 31 shows the price variation across governorates in October 2019, a month after the GoY’s regulation on commercial fuel imports were introduced. The regulation led to acute fuel and gas shortages in northern Yemen, which severely affected transport
of people and goods, water pumps, and hospital generators. Al Hodeidah, Ibb, Ta’iz and Sa’dah are amongst the governorates experiencing the highest prices while Hadramawt, Aden and Lahj have had some of the relatively lower prices.

Looking at city-level data, the price trends on the governorate levels are largely reflected on the city level. The fuel regulation implemented in October 2019 is reflected in diesel and petrol prices, where all cities experience a hike in diesel prices and to a lesser degree in petrol. Ma’rib has consistently had the lowest prices of fuel prices, with the exception of diesel prices in the period from October to December where there was a relatively large price increase. Sana’a, Sa’dah, Al Hodeidah, and Ibb had and continue to experience the highest prices of diesel and petrol, while also Ta’iz have high prices of petrol. Except for a short period in October 2019 where Al Hodeidah has a large increase in gas prices, Sa’dah has had a continuously higher price of gas compared to other cities.

In Sana’a, the price of fuel was reported to recently have risen to YER 1,000 per litre compared to YER 365 per litre on the official market, with queues at fuel stations up to several km and with wait time for two to three days.
Industry and commerce

The industry sector employs 14.5 percent of total workers in the formal sector in Yemen, according to The International Labour Organization (ILO)’s rapid survey from 2015.

A number of industrial zones have been established in Yemen to incentivize and encourage industrial activities, such as the allocation of spaces to licensed industrial projects and road works (excavation, filling, and levelling), investments in a number of areas, such as electricity, water, road, sanitation, and telecommunication to facilitate economic activities. These include:

- Lahj industrial zone in Al-Rija’a Area, located 20 kilometres outside of Al Hawtah city and 27 kilometres from Aden port. Total area of 2,800 hectares.

- Aden industrial zone, located 14 km form Aden Airport, 18.9 kilometres form Aden Sea Port and 28 kilometres for the Aden Free Zone. Total area of 196 hectares.

- Al Hodeidah industrial zone, located at the northern side of Hodeidah city. Total area of 4,200 hectares.

- Hadhramaut industrial zone, located in Miryar site near the refinery and fisheries industrial complex and proposed governate seaport site. Total area 800 hectares.

However, the lack of public investments in infrastructure for these industrial areas remains a major challenge to attract private sector investments.
Of the several ports in Yemen, Aden has the only port that processes cargoes in the regional transhipment market, while Al Hodeidah and Al Mukalla serve the national market, and other ports specialise in specific industries.

As a result of population growth, the housing construction industry has expanded in Aden, becoming the third largest industry after oil and food industries in 2014. In the years before the conflict, salt was becoming one of Aden’s main export commodities. There are currently 11 saltworks in Aden with the capacity to refine and packing 150,000 metric tons of salt in a year. Salt production constituted an important economic facility and formed a unique man-made landscape. However, due to the conflict, salt production and its shipping has largely been halted.

A large share of economic activities, including industry and commerce, have historically been concentrated in Sana’a: over the 1992–2006 period, 39 percent of all new formal jobs in Yemen were created in Sana’a, as well as 33 percent of new formal establishments. In 2010, Sana’a was home to approximately 30 percent of industrial establishments in Yemen and supported higher order commercial and services activities, such as banking and financial services. Commerce and small services are the largest sectors in Sana’a both in terms of the number establishments and the share of employment. Furthermore, the city has a relative higher concentration of general administration activities, hotels and restaurants, and employment in the transportation sector compared to the Yemeni averages.
After Sana’a and Aden, Ta’iz has been one of the most important industrial areas in Yemen. This is largely due to the substantial investments made by Hayel Saeed Anaam (HSA) group, the country’s largest industrial and business conglomerate. The HSA group has, amongst others, developed two industrial estates at the outskirts of Ta’iz city, which contain a number of industries including food processing and other manufacturing activities (plastics, packaging, etc.). Overall, industrial, commercial, and public sector activities are the principal sources of employment in Ta’iz city. The industry sector provides employment within soap production, papers, chemicals, constructions and metals, textile, wood, leather, and furniture. There are several industrial plants in the governorate, including Al-Barih Cement Factory, as well as numerous stone, marble, sand, and salt quarries, and a range of light industries.

Yemen has a long history in artisanal manufacturing. Sana’a, for example is considered a centre for handcraft production, especially in metalworking, leather, woodcarving, gold and silver filigree, and embroidery, producing of range of commodities including wood doors, silver jewellery, fur jackets made from sheep’s wool, and iron tools for agriculture needs. Historically, much of Sana’a’s economy was dependent upon mining of silicates and semi-precious gems, and metalworking. Traditionally, the products covered the needs of the governorate and were exported to other cities and regions in the country. Aden is home to Qood Sela, famous and unique in the Arabian Peninsula 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.

There is a wholesale and industry for the mining and quarrying value-chain in several cities. In Al-Hawtah for example, the wholesale trade sector holds importance in serving the region with commercial activities including production of clay for cement and bricks, hand-made carpets, and ceramic pottery. Moreover, Hadramout is well-known for the quality of its stone and marble, which provides the foundation for Al-Mukalla’s industry focused on the mining and quarrying value-chain, including chemicals, construction companies, real estate development, and architectural design. Al-Mukalla industries also include iron and steel, foodstuffs, oils, sponges, plastic pipes, mineral water, and fish canning.

In Zinjibar, where almost one-third of employment is in the commercial sector, industrial activities are mostly limited to crafts and small-scale production, including grinding grains, confectioneries and bakery, producing vegetable oils, carpentry and iron-aluminium smithery/workshops; brick industry; water bottling and sewing of clothes.

Population movements have led to new opportunities in some cities. Ma’rib has seen a range of small and medium-sized businesses opening since 2015. This is partially a result of the population increase in the city, with a resulting larger labour force and where shops and restaurants keep long hours to serve customers. However, most businesses are operating in shoddy buildings, as business owners are hesitant to invest in fixed assets due to a general feeling of unsafety and threats of violence. The construction sector has also grown as a result, with intensified building activity to meet the demand for new housing. The increase in activities must be seen in relation to the decentralisation of government with greater autonomy on a governorate level in Ma’rib, including of budgets and public spending.

Tourism

There is a great potential for tourism in Yemen based on its cultural heritage and natural environment (see the chapter on Cultural Heritage for more details). Historically, the largest share of tourists in Yemen has come from the Middle East. For example, 90 percent of tourists that landed in Al Hodeidah from 2000 to 2005 were Middle Eastern nationals.

The conflict has had a devastating impact on the tourism sector. Safety concerns coupled with largescale destruction, looting and a lack of preservation of historic sites all contribute to the current situation. These challenges also present a major threat to the tourism industry post-conflict, where reconstruction, restoration and protection of cultural heritage sites will be key to secure the economic potential of this sector in the future.

Informal sector

The informal sector in Yemen is large. No reliable data on the size or structure of the sector exists, and more research into this is needed. ILO has estimated that almost three-quarters of the employed work in the informal economic units and 73.2 percent of employment were informal employment in 2015. Further, only around half of those informally employed are in salaried employment, and 42.4 percent are either own-account or contributing family workers.

The large informal sector is reflected in the economic composition in Yemen’s cities, including retail trade, services and small-scale manufacturing, with the vast majority of firms being informal microenterprises. In Al Hodeidah for example, the informal sector is concentrated in manufacturing, producing goods for local markets both for basic consumption and as components of subcontractors to larger organizations. These are often family-run, with skills passed down to through the generations.

Effect of war

The conflict has caused widespread disruption to economic activities, and contributed to the contraction of the national economy by nearly 50 percent from 2016 with GDP growth reaching negative 28 percent in 2018. During the same period, domestic and external debt has grown respectively to 49.4 percent and 25.1 percent of the GDP, while inflation was estimated at 28 percent in 2020. Further, quick cash schemes and concerns with safety have led many traders to switch to selling weapons and ammunition.

As Figure 30 illustrates, over the 2018 to 2020 period, local businesses has suffered far more damage than other infrastructure critical for the economy, such as markets, fuel, food and electricity.
The cities are a testament to the effect of the war on economic activities, having suffered from high and continuing damage and destruction to building and infrastructure, closure of roads and borders, rising fuel prices, increased water scarcity, and high rates of inflation. Between 2017 and February 2019, a reported 377 attacks took place against farms, business, infrastructure and public markets in Sa’dah alone. Markets and roads have been targeted by air strikes making it much more dangerous to sell or transport goods, further contributing to the dire state of the economy. As shown in Figure 30, the damage to local businesses in 2018-19 has been considerably higher than to any other economic infrastructure.

The destruction of assets and associated loss of jobs and income have served as a main push factor for people to flee to areas of relative security and perceived presence of livelihood opportunities. During the conflict, many of the farms have been destroyed, while the irrigation systems and other farming tools have been looted. A study by ILO suggests that agriculture is the sector that has been most severely affected by the conflict, losing almost 50 percent of its workers at the time of the study.

Ta’iz is one of the cities that has been the most severely affected by the prolonged conflict. Significant impact is seen on economic activities and people’s livelihoods. In particular, the siege of the city and internal fighting has devastated the city’s industrial sector, with many factories shuttered and many more damaged due to fighting. Reportedly, 95 percent of Ta’iz city’s businesses have been damaged and for many residents, armed groups present some of the only available source of income.

Al Hodeidah, suffering from heavy bombing campaigns, have experienced heavy damage to its port facilities, hospitals, industrial power base, power stations, customs buildings, and transport infrastructure, including supporting logistics. The damage to the city’s industrial zone crippled the operations of the Thabet Brothers Group, which alone left 6,000 people out of work. By 2016, Al Hodeidah’s agricultural sector had lost 80 percent of its 73,000 jobs, while the private service sector lost an additional 27,000 jobs. The attacks on Al Hodeidah led to claims that the conflict had spiralled into economic warfare with the expressed purpose to deny opponents resources needed to function. As a result of the situation, a large part of the population has fled the city. For those who remain in the city, a deteriorating economic support structure has undermined social resilience, increased the price of goods, and led to the closure of businesses as purchasing power has fallen drastically. This includes a discontinuation of Al Hodeidah’s public servant salary payments and social benefits, an important pre-crisis source of income. Collectively, these issues have increased the average number of family dependents to 13:1, placing serious economic and social pressures on households. Households are increasingly resorting to negative coping mechanisms such as selling assets, reducing food and clean water consumption, and taking up debt: Al Hodeidah shows a high score in the WFP reduced coping strategies index that considers indicators such as buying less expensive food, limiting portion sizes, reducing the number of meals, borrowing food, and restricting adult food consumption.

Sana’a has suffered the highest total estimated cost of damages in the country according to the World Bank, estimated between 1.9 and USD 2.3 billion.\footnote{296} Table 10 shows the number of business establishments in Sana’a that have been damaged as a result of the conflict according to the industrial commercial chamber of the Amanat Al-Asima-Sana’a, and its estimated costs. In total, 89 establishments were damaged, of which 81 were owned by businessmen, seven owned by businesswomen, and one owned by a civil society organization.

<table>
<thead>
<tr>
<th>Negative Coping Strategies</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less Expensive Food</td>
<td>77.5%</td>
</tr>
<tr>
<td>Limit Portion Size</td>
<td>75.9%</td>
</tr>
<tr>
<td>Reduce Number of Meals</td>
<td>68.4%</td>
</tr>
<tr>
<td>Restrict Adult Consumption</td>
<td>62.6%</td>
</tr>
<tr>
<td>Borrow Food</td>
<td>59.1%</td>
</tr>
</tbody>
</table>

Source: WFP, 2018

Figure 23 Families in Al Hodeidah using negative coping strategies. Source WFP, 2018.

Table 10: The establishment damage according to the economic type

In Al Hawtah and Zinjibar, CFP respondents reported that the vast majority of households have been extremely affected by the conflict. Since the onset of the conflict, much of the agricultural lands and farms in Al Hawtah have been destroyed and agricultural goods have been stolen or looted. Local fishing and farming industry have also been crippled by the conflict, with ports that support the city shut down due to the damage incurred by airstrikes and an ongoing blockade. Factories in Al Hawtah, including the tomato and cotton factory, which used to employ more than 10,000 workers, have been destroyed. Similarly, since 2012 most of the farms in Zinjibar have been damaged and their irrigation systems as well as other farming tools have been looted. Given the lack in financial means, most farm owners have not been in a position to repair their properties or re-establish their former production.

Employment

The labour market in Yemen is characterized by large-scale unemployment and under-employment, where the unemployment numbers from 2015 can be assumed to have further increased as a result of the continuous conflict (Figure 32). The education attainment is Yemen is very low for both employed and unemployed adults, with almost two out of three Yemenis in the labour force have completed only primary education. Before the conflict, the service sector (mostly trade and public administration) was the predominant employer in Yemen making up 55.6 percent of employment, according to ILO’s rapid survey from 2015. Agriculture accounted for 29.2 per cent of employment (with a high incidence of own-account workers), and

---

297 As shared to UN-Habitat by The Industrial Commercial Chamber of the Amanat Al-Asima-Sana’a, 2018.
298 UN-Habitat, Al Hawtah and Zinjibar City Profiles, 2020
300 Ibid
301 Ibid.
industry employing 14.5 percent. Using the Labour Force Survey 2013-14 as a baseline, ILO’s study suggests that 130,000 jobs have been lost. Agriculture has been the most affected sector with close to 50 percent reduction in employees. Further, private sector experienced an 8 percent loss, while decline in industrial employment was marginal, and construction increased by 8 percent mainly in Aden governorate.

According to the same study, the labour force participation rate in 2015 was estimated to 36.3 percent. Urban and rural labour force and unemployment rates are comparable, with 38 percent urban and 35.8 percent rural labour force participation, and 12.4 percent urban and 13.8 percent rural unemployment. It should be noted that this only accounts for employment in the formal sector.

In Sana’a, the public sector is a significant source of employment, where the government, including the military and police, was estimated to account for nearly 40 percent of the total of 295,000 jobs in Sana’a in 2010 according to the World Bank (2010). According to ILOs data, urban unemployment varies significantly between governorates (Figure 33), ranging from 5 percent in Abyan (Zinjibar) to 25.8 percent in Sa’dah. Moreover, urban unemployment is largely reflecting overall unemployment in each governorate, suggesting that the difference in formal work opportunities in urban and rural areas is relatively small. Noticeable exceptions are Ma’rib and Hadhramaut where unemployment in urban areas is much lower (13.7 and 4.9 percent respectively) relative to rural (25.6 and 13.2 percent respectively), and Ta’iz where unemployment in urban areas is much higher (22.3 percent) relative to rural areas (13.2 percent). Mindful of caveats in the data, when looking at displacement patterns where Ma’rib city and Al Mukalla have received a large influx of IDPs, this data supports the conclusion that job opportunities are a major pull factor to the cities, and that these cities have had the capacity to absorb new arrivals into the job market. This is also reflected in establishment of new businesses and increased economic activities, particularly in Ma’rib. Ta’iz has been heavily impacted by fighting in the city and has suffered a significant outflow of IDPs as a result, with negative effects on local economic activities and work opportunities.

Figure 34 shows the wage level across cities from 2016 to 2019. As shown on UN-Habitat’s data portal, the indicator on qualified wages suggests a notable upward trajectory in Aden after 2017, reaching the level of Ma’rib. This coincides with the transfer of main government functions to the city. It also suggests a significant drop in wages in Al Hodeidah after 2017.
The level of wages relative to the national average gives and indication of the state of the economy in the city. The data suggests a notable upward trajectory in Aden after 2017, reaching the level of Marib, which coincides with the transfer of main government functions to the city. It also suggest a significant drop in wages in Hudaydah after 2017.

![Figure 26 Daily median qualified wage YER. Source: WFP Market Watch Report](image)

The CFPs interviewed in Al Hawtah, Zinjibar, and Taiz, noted that the main employment types where within casual labour (agriculture, construction, domestic work), or salary employment with (government, intern. org., private companies). The majority of CFPs in Ta’iz noted primary source of income came from the informal sectors, followed by formal employment and then safety nets (pension, insurance). The main obstacles to employment was attributed to lack of technical/vocational training and business start-up training, followed by difficulties obtaining business loan under favourable conditions and difficulties continuing or completing education. Key obstacles to securing a job in the cities was attributed to land issues, in including a lack of accessible land, limited or irregular work opportunities, lack of irrigation system, lack of or inadequate skills, agricultural loans being too expensive, and lastly lack of information about the local labour market.

### Youth unemployment

The lack of livelihood opportunities, with high under- and unemployment in urban areas, disproportionately affect the youth population. With an urban population where, on average, approximately 51 percent of the population in the ten cities in this report is under the age of 25, the importance of addressing livelihood opportunities for young people is evident. According to ILO’s labour force survey 2013-14, youth unemployment was at 24.5 percent, almost double the national average.307 A study by the Project on Middle East Political Science found that only ten percent of youth between 15 and 25 years can generate an income that will support their families.308 Of these, 2 percent are fulltime employees while 8 percent are day labourers, where the majority of job opportunities are in agriculture, self-employment in construction or transport, or selling khat. This dire economic situation has both lead to an increase in child labour, in addition to recruitment of young boys or the military or militias. The same study show that girls are faced with limited to no options for supporting their families economically through employment: only 1 percent are currently employed part-time, 2 percent unemployed, while only 2 percent of girls between 15 and 25 are or would consider becoming part of the workforce.309

### Child labour

Child labour was prevalent in Yemen also before the conflict. In 2013, more than 1.3 million, 17 percent, of children were reported to be involved in child labour, including 11 percent of children aged 5-11 years.310 According to UNICEF’s Vulnerability and Needs Assessment in Sana’a and Amanat Al Aismah governorates focused on marginalised groups, 32 percent of children under the age of 15 were engaged in some kind of child labour, of which the prevalence was 18 percentage points higher among boys than girls.311 Since the outbreak of COVID-19, negative coping mechanisms including child labour has been reported by United Nations High Commissioner for Refugees (UNHCR) to be on the rise.312 This can partially be attributed to increased vulnerability due to lockdowns, curfews, school closures and restriction on movement.313

---

308 Ibid.
Migration, displacement, and urban growth

Rapid urbanization as a result of internal displacement and migration is adding additional pressure on already strained labour markets in Yemeni cities, often leading to increased competition over limited and reducing employment opportunities. Driven by the accelerated contraction of the agricultural sector in recent years, urban areas with relative safety continue to attract large numbers of people looking for income opportunities and access to basic and social services. While the conflict patterns and the degree of intensity in different parts of the country is decisive for which cities have an outflow or influx of IDPs, the general migration trend from the rural areas to the large agglomeration areas is expected to continue.

Economically active residents might be the first to leave in search of income opportunities elsewhere. For example, Zinjibar has experienced a relative decline in the economically active population group (ages 15 to 64). Reports from the University of Aden estimate that only about 60 percent of this group have remained in the city while the remaining have left in pursuit of work opportunities. ILO reports that women represent more than 80 percent of the people who left Sana’a and Al-Hodeidah, and 55 percent of the people who arrived in Aden.\(^{312}\) As discussed in the Women in the economy section, the need to generate an income have resulted in women stepping into roles that are traditionally filled by men, or have taken jobs that were previously held by women considered of lower social status. As such, the traditional pattern of men migrating to look for economic opportunities while the women stay behind to take care of the farming activities and / or family behind could be changing as a result of the war.

Ma’rib was brought into the spotlight of the conflict in January 2015, when thousands of people from different parts of the country fled to the city. At the time Ma’rib had a modest population, and the rapid increase in population had a substantial effect on the city, with a positive population change of 89,844 persons in 2018, almost doubling the size of the city’s population. The growth of the city has led to a diversification of the economy. This has a significant positive effect on the economy (see Industry and commerce for more details).

Poverty and inequality

Poverty in Yemen is pervasive, with an estimated 81 percent of the population below the poverty line.\(^{313}\) Even prior to the conflict, poverty levels were extremely high. For example, 70 percent of the residents in Zinjibar identified the lack of income or livelihood as a serious problem in 2013.\(^{314}\) At the same time, there is an indication that income inequality was rising in the period before the conflict. In Sana’a, it estimated that the Gini Coefficient increase by 21 percent from 37 to 44 from 1998 to 2005. This was the highest increase of any region of the country.\(^{315}\) Given the economic collapse as a result of the war, it is likely that an estimated lower Gini Coefficient of 36.7 in 2020 can be attributed to increased poverty levels where people are becoming poorer across the board, rather than as a result of the poorest becoming better off.

While the poverty rate is estimated to be higher in rural areas, the vulnerability of urban poor households is often compounded by the higher cost of living, the reliance on markets, and the limited range of coping mechanisms available. The quality of life for a large share of the urban population is dismal, with the situation being so difficult that 85 percent of the population in Sana’a reporting that they could not even afford to buy hand soap.\(^{316}\) It has been estimated that Sa’dah has the largest concentration of poor people in Yemen, with a poverty rate that is likely “approaching 100 percent”,\(^{317}\) accounting for nearly 6.5 percent of the total population under the poverty line in Yemen. Many who live in cities, and particularly in informal areas, including many IDPs and migrants, go ‘under the radar’ of the authorities and international community. Because many are not accounted for in the statistics, as well as the composite nature of urban poverty, it is difficult to determine the actual level and extent of poverty in Yemeni cities.

Food security

High unemployment, restricted access to income, appreciation of the rial, rising fuel prices, and now COVID-19, are contributing to low and decreasing household purchasing power at the same time to driving up prices of food and non-food items. As a result, more than 20 million people are food insecure in Yemen, with close to 10 million being acutely food insecure.\(^{318}\) In the period from February to April 2020, two million Yemenis, or 25 percent of the population in the 133 districts analysed, were estimated to be highly food insecure, and by December 2020 this is estimated to rise by 40 percent to 3.2 million people.\(^{319}\) A contracting agricultural sector due to conflict and in some parts damage from locusts, has rendered the country dependent on import for food supply. Food import increased in 2019 compared to 2018, with a large share intended for food aid,\(^{320}\) where 80-90 percent of food in Yemen needs to be imported. However, due to import restrictions, inspection mechanisms, and destroyed infrastructure, have caused prices of food and non-food times to rise. As Figure 36 suggests, over the conflict period, the price of food has increased, particularly after 2017. The price variations between cities reflects variations in quality and their relative distance from the port, as well as transportation costs. Looking at retail prices for wheat, Ibb had a significant price increase


in the second half of 2019, while other cities had relatively stable prices. Currently, as a result of COVID-19 related food import restrictions, import has decreased by 43 and 39 percent in percent in Mach and April 2020 compared to the same periods in 2019, while food prices are rising, reaching up to 35 percent of pre-COVID prices in some areas. A recent study by the Norwegian Refugee Council (NRC) found that COVID-19 has already had a detrimental effect on what was already the largest food crisis in the world, with 94 percent of surveyed families reporting food as the top concern, while almost half of respondents had lost at least half of their income and one in four families were reported to have lost all their incomes since the pandemic hit Yemen in April.

Women in the economy

Gender equality is a major challenge in Yemen, posing specific structural and cultural barriers to economic participation for women and girls in cities. The unemployment rate measured as the female to male ratio stands at 1.94 and youth unemployment rate of female to male stands at 1.37. ILO estimates that over one fourth (26.1 percent) of women are unemployed, compared to an overall unemployment rate of 13.5 percent. The organisation further estimates that Yemen has one of the lowest female labour force participation rates in the world with only 6 percent of women participating. While food prices are rising, reaching up to 35 percent of pre-COVID prices in some areas. According to CFPs interviewed in 2020 for the UN-Habitat City Profiles, the reported time to obtain food, and the availability of food items differed between cities. Furthermore, significant intra-city variations have been noted in the travel time and access to obtain food. In Ta‘iz for example, inhabitants spend less than 20 minutes on average of time in walking to obtain food items (staple food, fresh vegetables and fruit, meat, etc.). According to the majority of CFPs, people in Al Mudhaffar and Al Qahirah districts spend less than 20 minutes of travel time to obtain food items; however, in Salah district, most CFP respondents state people spend more than 40 minutes of travel time.

Low employment figures in cities can partially be attributed to high illiteracy amongst girls and women, lack of training and technical skills required for a number of ‘urban’ jobs, as well as restrictions on women’s presence in public spaces. However, while there is minimal participation of women in formal economic activities, many women work in informal activities, such as agricultural activities and khat cultivation, as well as marketing and service in domestic work. These unregulated economic activities are sometimes unpaid, or often pay little or with in-kind wages. The conflict has, in many cases, exacerbated pre-existing limitations experienced by women and girls, with severe economic consequences affecting many women disproportionately. Since the beginning of the conflict, a trend of changing economic and social roles has emerged. In some cases, lessening of restrictive cultural norms have been observed, where the need to generate an income have resulted in women stepping into roles that are traditionally filled by men, or have taken jobs that were previously held by women considered of lower social status, including migrant women, carrying out ‘shameful’ occupations such as butchers, barbers, and chicken sellers. Some women have started new businesses which allows them to work from home, or businesses only serving women. In Al Mukalla, Aden, and Sana’a, for example, women have opened restaurants and cafés for women only. Female entrepreneurs in Sana’a are, to a greater extent than in Aden and Al Hodeidah for example, limiting their activities to their social network and through social media, without selling directly.
In general the market is competitive, where female entrepreneurs often target the same customers. Coupled with challenges such as lack of proper marketing strategies and lack of investment funding, start-ups can be risky with no guaranteed profit. Moreover, the economic responsibility can also result in a double burden, where the woman has to be the family’s main provider while also performing the role of primary caregiver. It is not certain whether a change where women to a greater extent are generating income is translating into increased empowerment or decision-making power, nor is it guaranteed that the trend will continue when the conflict ends.

Remittance
Remittances have historically been a significant contributor to Yemen’s economy. In 1990, remittances made up an estimated 26.5 percent of Yemen’s GDP. Except for a brief upward trend in 1998, these steadily declined to an all-time low of 4.2 percent in 2011 before again increasing to reaching 12.5 percent in 2018. This relative increase is attributable to the contracting economy, where remittances had been fairly stable over the past years while other sectors have been declining. This is particularly evident when considering foreign exchange inflows into Yemen in Table 9. Over the 2014-2018 period, remittances have slightly increased to an estimated 3.4 billion, followed by humanitarian response grants of 2.3 billion, while all other sectors have dwindled to a fraction, including oil and gas which were reduced by 97 percentage points over this period. Recently however, remittances have dropped sharply as a consequence of Covid-19. Since the outbreak of the pandemic with lockdowns and social distancing measures, Yemenis working in the Gulf states, UK and US have lost or had their incomes severely reduced. Oxfam reports that the number of remittances has dropped as much as 80 percent between January and April.


Remittances of the Yemeni Migrant Workers Contributing to National GDP

According to the Ministry of Planning & International Cooperation, an estimated 90 percent of total remittances in 2016 were sent from the Gulf countries. The remittances are often transferred in the form of goods, including food, clothes, and furniture, which is made possible by the geographical proximity and reasonable transportation costs. According to a study from 2016, remittances at the time accounted for 6 percent of the urban populations’ livelihoods, in comparison to 11 percent in rural areas.

Many of the Yemeni laborers abroad are employed in low-paying jobs, which is likely in part due to low educational levels and insufficient training. A survey by the Economic Observatory for Studies and Consultations (EOSC) and IOM on 342 households receiving remittance in Al Hodeidah, Hajjah, Ibb and Hadramout governorates in 2017 found that only 9 percent of Yemeni expats held qualifications higher than secondary school certificates, while about half working in services, stores and markets.

Table 11 Foreign exchange inflows into Yemen (billion USD).

<table>
<thead>
<tr>
<th>Description/Year</th>
<th>2014</th>
<th>Structure %</th>
<th>2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>Export of Goods of which:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Oil and gas</td>
<td>6.4</td>
<td>36%</td>
<td>0.19*</td>
</tr>
<tr>
<td>Services Export of which:</td>
<td>1.7</td>
<td>9%</td>
<td>NA</td>
</tr>
<tr>
<td>- Tourism returns</td>
<td>0.9</td>
<td>5%</td>
<td>-</td>
</tr>
<tr>
<td>Expatriates remittances</td>
<td>3.3</td>
<td>18%</td>
<td>3.4**</td>
</tr>
<tr>
<td>External grants</td>
<td>1.7</td>
<td>10%</td>
<td>2.3***</td>
</tr>
<tr>
<td>External loans</td>
<td>0.5</td>
<td>3%</td>
<td>0.003</td>
</tr>
<tr>
<td>Investment of oil companies</td>
<td>2.5</td>
<td>14%</td>
<td>-</td>
</tr>
<tr>
<td>Others</td>
<td>0.3</td>
<td>2%</td>
<td>NA</td>
</tr>
<tr>
<td>Total</td>
<td>18.0</td>
<td>100%</td>
<td>100%</td>
</tr>
</tbody>
</table>

Table 11 Foreign exchange inflows into Yemen (billion USD).

Figure 29 Personal remittances received, % of GDP (World Bank 2018).
Housing, Land and Property

A weak regulatory system for housing and land and insufficient housing supply due to pre-existing deficiency in the housing market and damage and destruction to residential buildings resulting from the conflict, is manifesting in insecure tenure conditions and inadequate housing in inner-city neighbourhoods, as well as sprawling, informal areas.

The house price-to-income ratio in Yemen is very high. Already prior to the conflict there were persistent inequalities in the housing market, where the formal market exclusively serviced high- and middle-income groups. The conflict has exacerbated the situation, where a large share of the population is in need of shelter or are suffering from inadequate shelter conditions, often living in informal and un- or underserviced urban areas. In general, women have limited access to land and property; oftentimes neither the provisions of the national Islamic laws nor customary laws guarantee women’s rights are respected.

The conflict has resulted in large-scale damage and destruction to residential buildings. Precarious environmental conditions combined with poor structural estate, lack of infrastructure, use of building materials such as mud, and building in flood or land/rockslide-prone areas, is increasing risks of damage to buildings and properties, and contributes to displacement.

Amongst the displaced population, the majority live in rented accommodation or with host communities, while others live in dispersed settlements, squatted buildings, or collective centres. The influx of people to certain city areas has contributed to increased rental prices, overcrowding, competition over resources, and multiple displacement. About half of urban IDPs and almost all rural IDPs own property. However, once displaced, there is a high risk that property that remains in the area of origin becomes occupied by neighbours, militias, sold to new owners or divided through inheritance claims, making it difficult to reclaim the property upon return. The possibility of contamination of housing and land with landmines or other explosive remnants of war is a further obstacle to return.

Weak regulatory mechanisms, the absence of a transparent land registry and system for authenticating land deeds and documents, formal or customary, as well as no national cadastre, complex and overlapping legal systems for land and tenure, tribal claims, land grabbing, corruption, and the use of land to drive political agendas, has resulted in increased and deepened land disputes. Although land disputes in urban areas are to be settled in court, failures of the formal system has pushed people to return to customary or informal mechanisms for land resolution even in cities.

Introduction

General Authority for Land, Survey and Urban Planning is facing several obstacles, including failure to complete and implement relevant legislation and regulations such as the land and construction laws; a centralised planning system with weak linkages between the central and decentralised systems; overlapping formal, informal and customary land ownerships, tenure and usage; inaccurate and out-of-date real estate registries; limited availability of specialised technical staff, including in the fields of planning and surveying; lack of the capacity of staff in the relevant technical offices; rapid growth of land-use conversions of agricultural lands; the inability of the planning system to match the pace of urban growth in general; a lack of necessary capabilities for planning, such as aerial photographs, engineering tools etc.; as well as overdue decision-making over planning.

For 2020, the Shelter, Non-Food Items (NFI) and Camp Coordination and Camp Management (CCCM) Cluster has estimated that 7.27 million people are in need of essential household items and safe and dignified shelter solutions. Severe flooding has impacted several cities in the second quarter of 2020 (see Natural Disasters in the Climate Change and Environment Chapter), and has increased shelter needs with reported causalities, damages to houses and urgent needs affecting 100,000 people. The most frequently reported shelter needs are lack of essential items, insufficient lightening in shelters, overcrowding, inability to afford rent or basic goods and high cost of shelter materials. Shelter needs become more critical in the cold months from October to February.

According to the Shelter Cluster Impact Monitoring report 2019, 51 percent of the interviewed households (of whom 87 percent were IDP households) lived in rented apartments, 11 percent in self-settled camps or settlements, 9 percent in collective centres, 7 percent in public buildings, 7 percent with host families, and the remaining in tents, open public spaces, under tarpaulins etc. About 1 percent lived in a planned camp or settlement. Many families are acquiring large debts from paying rents, while in the dispersed spontaneous settlements and unfinished structures households have limited access to services and face significant protection risks including exploitation, harassment and gender-based violence. IDPs living in these locations often cite lack of dignified assistance, feeling unsafe, lack of privacy, limited representations of their needs, limited freedom of movement and harassment from other IDPs or the host community as the greatest challenges.

Land and Housing Legislation in Yemen

In Yemen, a complex legal system of customary and statutory laws as well as Islamic Law subject to varying interpretations, govern land rights. Some 90 percent of land ownership is informal or lacks any legally recognized tenure.

With the unification of the country in 1990 two legal frameworks were merged, with major implications for land rights. Following the People’s Democratic Republic of Yemen (PDRY) take over in the south, the PDRY issued laws that dispossessed influential families and former sultans to benefit small holders and landless households. After 1990, nationalized land was returned both to legitimate previous owners and other people claiming to be the “rightful owners”. In addition, new decrees and investment regulations reorganized land ownership throughout the South. The 1991 “September Directive” facilitated the distribution of state land and different ministries distributed land in the southern areas to supporters of the Sana’a government, state employees, officials and their friends.

army officers, and civil servants. In some cases, different ministries distributed the same land plots to different people. This appropriation of land in the south by “northern” interests has remained a source of tension. Militias in the south have tried to defend local land and water against ‘northerners’ since the start of the war, even in cases where the land was acquired through legitimate and legal means.

In 1995, Yemen promulgated the Land and Real Estate Law No. 21 of 1995. The law provides for the classification of land (public, private, communal) and the terms of use. However, the land and real estate law generally governs urban land, while land governance in rural areas follows customary and Islamic law under the leadership of sheikhs. The WAKF Law No. 23 of 1992, governs land donated to religious organizations, including the terms for leasing WAKF lands (see Table 10 for overview of the various legislation relevant to Land and Housing in Yemen, in the end of this chapter).

Land is classified according to ownership as; (1) public or state lands, (2) private lands, (3) WAQF/ AWQAF lands (4) community lands. Additionally, land without ownership automatically becomes state property.

There are several laws directly or indirectly related to urban planning, within the different part of this legislation there are contradictions on the roles and responsibilities of governmental bodies in upholding the planning procedures or land administration. Urban planning and management activities are amongst others carried out under the Urban Planning Law No. 20 of 1995, the Executive Regulations for Urban Planning Ministerial Resolution No. 260 of 1997, the Local Authority Law No. 4 of 2000, in addition to other laws related to planning. The Urban Planning Law delegates most planning responsibilities, including implementation, through local administrations. The executive regulations of the Law were introduced in 1997 and focus on the standards of master plans and redistricting of land plots based on proposed plans, as well as the establishment of committees linked to residential or land complexes.

Land administration

In 2006, the State Land and Real Estate Authority (SLREA) was replaced by the General Authority for Land Survey and Urban Planning (GALSUP), making GALSUP responsible for the comprehensive management and administration of land in Yemen. It has consolidated authority over a number of functions formerly exercised by different entities, including (i) Land survey, mapping and registration; (ii) Management of State land and real estate; and (iii) Urban planning.

Based on analysis of maps and available data the SLREA (before being replaced by GALSUP) estimated that state-owned lands roughly made up 90 percent of all lands in Yemen. Public land includes desert, non-valourised land (Arady Mowat in Arabic) including undeveloped/uncultivated land, mountains and slopes, unpopulated islands and beaches, plots without identifiable owners or heirs, some 70 percent of the so-called marahek – the dry riverbeds, as well as land locally considered to be owned communally. State land is rented to tenant farmers with similar arrangements to tenancies on other land. The remaining 10 percent of non-state land included 5-9 percent of agricultural and cultivated land, and 1-2 percent of urbanized land. Updated data and classification (e.g. urban, agricultural, uncultivated, desert, etc.) and ownership is missing.

The rapid urban growth observed in Yemen cities over the past decades has expanded into both state owned and private land. In the main highland cities, such as Sana’a, Ta’iz, and Ibb, land available for urban expansion has been privately owned, with more than half of the urbanised land estimated to be uncontrolled and open to land grabs.

The Yemeni Investment Law No. 22 of 2002 provided for the establishment of the General Investment Authority (GIA) as a ‘one stop shop’ for foreign investors responsible for generating and facilitating investments in different promising sectors such as the real estate. The law offers foreign investors an attractive package of guarantees, exemptions, privileges, and services. Investment projects are for example exempted from profit tax for 7 years extendable to 16 years, can stay property of the foreign investor, and receive priority for getting credit loans. As one of the offered services the GIA suggests it could provide the needed land for investments.

In May 2010, a draft National Land Policy (NLP) was finalized and five policy studies were proposed; i) Land Registration, ii) Information Technology and computerized Land Information System, iii) Land Tenure and Access to Land, iv) Public Land Inventory, and v) Institutional Responsibilities. The draft policy was submitted in 2012 for Government revision but is yet to be formalised.

The absence of national housing policies and strategies in the country has contributed to an ever-increasing housing demand unmatched by formal supply, the consequent proliferation of informal housing areas and a continuing crisis of housing affordability in Yemeni cities.


344 NRC, “Repairing Fractured Landscapes: Challenges and Op- portunities for Resolving Disputes over Land, Housing, Water and Other Natural Resources in Yemen,” April, 2019.

345 USAID, “Property Rights and Resource Governance Yemen,” 2010 with 80% of its poor in rural areas. In spite of limited cultivable land, nearly two-thirds of Yemenis derive their livelihood from agriculture. An increasing proportion of land has been converted from food production to the growing of qat, and small farmers’ land holdings are getting smaller while the largest and wealthiest landowners’ holdings are increasing. Sixty-two percent of farms cover less than 2 hectares. In spite of a major role in agricultural production, women rarely have ownership rights to land and commonly relinquish inherited land rights to male family members. Land disputes are relatively common in Yemen because there is no system for authenticating land deeds and land documents. either formal or customary, and no national cadastr. However, both urban and rural landowners have a reasonable degree of tenure security with rights enforceable under either civil law or customary and Islamic law, respectively. Access to water, which is tied to land rights, is a common cause of land disputes, particularly in areas of water scarcity. Land scarcity is resulting in appropriation and sale of communal land, in some cases by sheikhs in violation of their fiduciary responsibility. Yemen faces a crisis in terms of water supply and water quality, with one of the lowest per capita water availability rates in the world (only 150 cubic meters per year)


347 Ibid

Land and housing acquisition

There are several legal aspects concerning the land and housing markets in Yemen, the main legal aspects can be summarised as follows:

a. Land transactions

Private land can be inherited, rented, leased, and sold. Despite frequent uncertainty regarding competing ownership claims, and even though most transactions, for safety sake, are conducted through networks of trust, selling, and buying of land is happening in a frantick manner. Inconveniences are overcome through semi improvised practical procedures facilitating smoothing of disputes, these include:

1. Payment for land is made through the local Amin Al-Mantiqa (called Al-Amin), a government appointed area chief, who will hold on to the payment for a month or more before transferring the payment to the seller to confirm there are no claims associated with the land.
2. The buyer starts excavation on the plot to show presence and to let potential contestants put forward their claims.
3. If any contestants to the transaction is identified within the one month, the sum will be divided among the original seller and the claimant through mutual agreement, or through a court decision.
4. If the claim escalates into a dispute the buyer is still free to withdraw from the sale. Hence, even if land acquisition remains a cumbersome business, the largest risks are taken away from the buyer.
5. After a plot is ‘safely’ bought contestants may still appear and claim ownership. In many cases, buyers feel pressed to pay those contestants off.

b. Common land transaction procedure

Most land transactions are conducted by the drafting of a “basira” (pl. basa’ir), a written document signed by two witnesses attesting the sale, rent, or inheritance of land. The basira is usually drafted by the Al-Amin, who is entitled to draft and certify official documents related to property transaction, rent of property and personal status issues. The document contains a description of the location of the plot of land, information of the buyer and seller, as well as a description of the transaction history of the plot. The basira can be registered in the court and the public notation. Registration only attests that the signatures on the document are those of the persons indicated. It involves neither a verification of the rights of the seller nor those of the original owner and is thus not tantamount to a property title. To certify ownership, the land transaction must be registered with the Real Estate Registration Office.

c. Regulations to promote land registration

It is comparatively easy to register property in Yemen. However, costs associated with registering land is considered expensive and discourages landholders from formalizing their property claims. The recording of deeds with the notary is the most widespread form of rights’ registration in Yemen. There is also a land register managed by the Land Authority under the Land Registration Act (No. 39 of 1991). This register is located in Sana’a, and provide registration of urban and peri-urban land parcels across Yemen.

To promote the registration of land deeds (basa’ir) in the national cadastre, the registration of land deeds with the Real Estate Registration Office in the GALSUP has been made an obligatory step in the process to obtain a building permit. While this over time will contribute to build up a national registry of land deeds, the proportion of registered land properties remains low.

d. Regulation to avoid selling of land that serves as collateral

As part of the procedure in getting bank loans tied to a land title, the Land Registration Department in the GALSUP registers if a land title is used as collateral in a loan agreement.

e. Brokerage services and brokerage fees

Official brokerage fees are set at 5 percent or less of the sales value. However, most transactions, for land and real estate, are done through informal brokers and, if possible, networks of trust. Use of informal brokers opens possibilities for informal ‘arrangements’ and lowering the fee.

f. Land and Property transaction taxes

Land and real estate transactions are taxed with 3.0 percent of the sales value, due when the new owner registers the plot. A contribution of 2.5 percent of the profit through added value is further expected from the seller.

---

349 Republic of Yemen, “National Report Habitat III.”

350 Land transactions are documented on the original basira of a land parcel that is subdivided for inheritance or sale to different individuals. The seller is requested to submit a copy of the basira indicating divisions of the original land, as well as the names of heirs or buyers who became owners of all or part of the land. These documents are, however, easy to manipulate and difficult to verify due to the lack of a central deeds and land record.

g. **Taxes on income derived from property, such as rental income**

Income from rent is taxed the equivalent of one month of rent as a yearly tax.

h. **Legal protection of dwellers, ‘the right to be housed’**

Foreclosure hardly ever leads to the eviction of a household. The Yemeni Bank for Housing for instance, does not claim land or real estate collateral in the case of foreclosure. The general sense is that the ‘Right to be housed’ is favoured over interests in the court system, thus potential gains in claiming collateral in property is not considered worth the hassle of putting the property on the market. The protection of dwellers in the laws vis-à-vis the borrowing and lending system in Yemen differs from the laws applied in most other Arab countries in this regard.

i. **Expropriation**

Article 20 in the Yemeni Constitution protects citizens from the general expropriation of their assets. Public Eminent Domain Law (PEDL), passed by parliament in 1995, gives governmental bodies (including governors) the right to acquire private property for projects in the public interest. Yemeni law stresses that land expropriation is to take place only if there is no suitable land in the public domain and fair compensation is made. Article 59 in the State’s Lands and Real Estates Law also recognizes the rights of squatters on public domain to receive compensation in the event of involuntary settlement. Compensation here is determined by standards set by the technical committees of the MOPW and the GALSUP.352

### Housing Sector

According to the 2004 census, which categorized settlements with more than 5,000 inhabitants as ‘urban’, urban dwellings made up nearly 30 percent of total dwellings, and an estimated 28.6 percent of the total population. While no census has been conducted since, it is estimated that the proportion of urban dwellers has increased since the last census and will continue to grow from both natural growth and with influx of IDPs. However, formal housing construction has not kept pace with the population increase in the cities, and before the conflict it was estimated that some 65 percent of urban dwellers lived in informal settlements.356 In the studied ‘northern’ cities, the highest percentage of the housing stock is private houses, while a lower overall share are apartments. In addition, the younger generation is increasingly seeking to independent housing separate from the traditional family housing set-up, adding to the housing demand. The World Bank estimates the housing shortfall to 1.3 million, excluding replacement of decaying housing, which constitutes around 2 percent of total housing units.357 As a result, overcrowding is prevalent, and for 36 percent of the urban housing stock, eight individuals or more occupy one housing unit, while the average space per person for urban residents is four square meters.

### Access to Affordable and Adequate Housing

Access to safe, affordable, and adequate housing is a key challenge in Yemeni cities, inaccessible for most urban dwellers and adding to stresses to already vulnerable families. This is further exacerbated by significant supply-side constraints to housing and land markets escalating construction costs. In Yemen, where most of building materials, like steel, cement brick, and timber, is largely imported, the cost of housing construction is linked to transportation costs, the exchange rate, and the international market. Moreover, the cost of land in the cities is increasing, with high demand for urban land. The exchange rate (in USD) has remained the same or to differ between cities.355 However, for a low-income household, even a relatively small fee may form a considerable threshold to apply for a permit. Furthermore, the now obligatory step to register land titles with the Land Registration Department adds to the economic hindrances to apply for permits.

While the building permits are installed to enhance control over construction practices and to maintain construction quality, the observed practice shows loopholes. For instance, despite that verification of the conditions on site is part of the considerations for approval, this is foiled by the lack of accurate maps and surveying. Further, while an assessment is supposed to be carried out to confirm compliance of position, footprint and construction quality, the permit in many cases remains a formality with no attestation of construction in accordance with the building permit. However, the general construction skills in the county are high.

### Building Permits

Very few housing units are constructed with building permits. According to the 2004 census a total of 35,618 buildings (33,066 residential) were under construction at the time of the census, yet only 5,130 building permits were issued in 2004 for the whole country. According to an estimation made for a Sana’a Urban Upgrading Study,353 81.5 percent of housing construction in Sana’a happens without permits. One of the main reasons why builders refrain from seeking a permit is the popular rule that ‘if there is no plan, no permit is needed’. The cheap urban fringe land, where the bulk of low to middle income households settle and construct houses, is often unplanned when buildings are erected.

To obtain a building permit, the applicant must submit an application with supporting documents, such as plans, sections, and elevations, signed by an architect and engineer. The application takes about 3-6 days, granted drawings are complete and of acceptable quality, also entailing a site visit to verify compliance of the construction with the GALSUP neighbourhood unit plans.354 The permit is subject to a fee which depend on construction volume, footprint, plot size, plot frontage on street etc. Fee calculation modes seem

---


354 KII with representative from the MOPW branch office in Saabain District, Sana’a City Governorate

355 Samples not collected within the same year, thus not verified.

356 NRC, “Repairing Fractured Landscapes: Challenges and Opportunities for Resolving Disputes over Land, Housing, Water and Other Natural Resources in Yemen,” April, 2019.

changed insignificantly, while most construction prices escalated by nearly 40 times in 2010 and almost to 120 times in 2019. The house price-to-income ratio in Yemen is 17.2, which is the highest in the Middle East and North Africa (MENA) region. The formal private sector housing only caters for the high- and middle-income groups favoured by lending institutions, while the large majority of the population, with low income and high poverty levels, are forced to resort to other alternatives for their housing needs. Urban inequalities were rising in the years leading up to the war, where the gap between the rich and the poor manifested in different areas of the cities; luxury housing was built in certain parts of the cities while informal settlements mushroomed in others. The current conflict and resulting displacement has contributed to increase the demand and pressure on affordable housing options – often in the informal market segment.

A range of shelter-specific challenges and needs linked to economic and socio-cultural factors is exacerbating vulnerabilities and risks for IDPs. Moving from one area to another, or city to city, represents an added financial burden. In July 2018 it was reported that moving a family from Al Hodeidah to Sana’a could cost around 60,000 riyals (about USD 240), with return costs of similar magnitudes. For many living in rural areas, the cost of relocating limits options – often in the rural-to-urban migration.

In Sana’a, widespread unplanned development is taking place (as shown in Figure 38), these can be classified into four different types:

### Informal areas and slums

#### Informal Areas: GALSUP uses a broad definition of informal areas. Informal areas are usually labelled as “ashwa‘i”, meaning “random” areas where residential development takes place without an official land use and services plan and where construction is done without building permits. The main characteristics of informal settlements is poor access to basic infrastructure and services, such as water supply and sewage, garbage collection, electricity; located on risk prone areas; lack of economic and educational opportunities; poor health care; lack of security of land tenure; owned by the inhabitants; and high poverty levels. Informal settlements, as defined by the Ministry of Public Works and Housing, includes two types: squatters and slums. The definition of squatters is given below: Squatters are typically extant planing and not (yet) included in formal plans. The squatters are divided between Legal and illegal squatters:

- **Legal:** Self-built on resident’s own land. The definition of a squatter depends on two criteria:
  - If the house has been built on a land that does not yet have a land use plan, or
  - If the house has been built on a land that is subject to a land use plan, the overall conditions of the built house is in a poor condition.
- **Illegal:** occupying and building on vacant lands in regions that have been planned for public usage or regions that are exempted from planning (in mountainous hills and valleys).

#### Informal landownership and housing

A consequence of the unavailability of affordable housing options, is the proliferation of squatter settlements and un-serviced peripheral neighbourhoods. Informal settlements have expanded rapidly over the past decades among others due to rural to urban migration caused by increased poverty levels, absence of employment opportunities, as well as climate changes and natural hazards related factors in rural areas. The cities most affected by informal sprawl are Ta‘iz, Al Hodeidah, Sana’a, and Aden. In Sana’a, for example, the population in these settlements grew by a staggering 229 percent between 1990 and 2005, and almost 70 percent of the city’s total growth is informal, and the vast majority of residential development has occurred informally. The rural to urban migration has especially been notable amongst the youth segment of the population. The exclusion from formal housing services appears to be a growing concern, and further ignited by displacement. Given the large share of urban residents living in informal settlements before the war, these house owners may not have official tenure documentation. This complicates efforts to secure tenure security for IDPs settling in existing informal settlements, as well as the return of IDPs.

In Sana’a, widespread unplanned development is taking place (as shown in Figure 38), these can be classified into four different types:

- Slum pockets (dispersed across the city).
- Informal areas within and close to the city centre. These are areas that were mainly established on state land by forced returnees after the 1991 Gulf war and/or by poor rural migrants, low paid security personnel, low rank government employees and other lower income segments of society.
- Informal areas on the far urban fringe (a) alongside or close to major roads or (b) village extensions. These makes up most of the informal areas in Sana’a. Informal fringe areas are found all around Sana’a apart from in the east where construction is limited by steep hills.
- Informal settlements on land that was reserved for (a) the preservation of public goods or (b) other non-residential purposes. They mostly include squatter areas on State land that has been assigned for public services or larger infrastructure projects or that has otherwise been reserved for non-residential use.

The encroachment on state land includes illegal squatters’

---

settlements, speculators claiming state lands as extensions to their own parcels and claims to historic rights-to-water for agricultural crops. The proliferation in the cultivation of khat in the highlands around Sana’a, predominantly in the Bani Hushays, Hamdan, and Bani Al Harith districts bear evidence of this. The slopes of Mounts Nugum and Aybān has been densely built upon without any intervention by public authorities. Housing built on slopes and other inaccessible spaces has not been seen as a major problem, however the housing units are often built on risk prone land, and Figure 30 Areas with an irregular development pattern in Sana’a, without access to public infrastructure networks. The slopes of Mounts Nugum and Aybān has been densely built upon without any intervention by public authorities. Housing built on slopes and other inaccessible spaces has not been seen as a major problem, however the housing units are often built on risk prone land, and without access to public infrastructure networks, and no public transportation. Informal development has also taken place with high-end residential development, for instance on the rocky hill sides of the Faj Batān in southwest Sana’a where large villas and houses for tribesmen and the elite has been erected.

suggesting unplanned or informal settlements (UN-Habitat 2020).
In Al Hodeidah, urban sprawl and infrastructure delivery challenges are compounded by the increase of squatter settlements. As in Sana’a, the development of informal housing soared in 1991 with the return of expatriate workers from other Gulf countries who settled in poor quality structures built on occupied land at the periphery of the city. According to the 2004 Census, the number of inhabitants living in squatter settlements was approximately 112,000, which equals over 25 percent of the city’s population. The squatters were housed in tents, cottages, or huts. In recent years, the north of the city has seen the brunt of informal expansions crossing major road reserves foreseen in the 2025 masterplan.

In Al Hootah, informal settlements can be found throughout the city, especially in the Al Khatib neighbourhood - an area hosting a high number of IDPs. The poorly constructed makeshift homes tend to suddenly cave in and collapse, posing safety risks to its inhabitants. In the Bajdar neighbourhood in Zinjibar, which witnessed some of the fiercest battles over the past years, most houses have been razed to the ground. With the chronic lack of appropriate housing restitution support, the affected households find it impossible to petition either a federal or local government to receive compensation for the damages incurred, leaving them homeless. As a result, hundreds of families have been displaced to the neighbouring governorates such as Aden and Lahj often taking up residence with relatives who are already strained financially. The displacement from the war has resulted in “spontaneous settlements”, where IDPs have settled on vacant – and often private land, oftimes creating conflict with the landowners who try to evict the IDPs or impose prohibitions on permanent structures on the land. IDPs have also found shelter in public buildings, at times creating or exacerbating tensions between host communities and displaced.

**Upgrading of informal areas and affordable housing construction**

While urbanization, demographic pressure, and high inflation, drives up demand for housing, supply-side policies, and institutional frameworks in general, and those that address the housing needs of deprived and poor households in particular have not been sufficiently developed. The country lacks an integrated national housing policy, and therefore, housing financing plans for deprived and low-income groups have not been properly addressed. The lack of effective land registration and unclear records of ownership poses further risk to upgrading efforts in informal settlements.

**The Sawad Saawan Project, Sana’a**

There are few examples of upgrading projects of impoverished informal areas, however some have shown that there are potentials for upgrading that both contribute to efficient and compact city development and providing affordable housing. The first Urban Development Project in Sana’a was a demonstration project initiated in the 80ties, intended to help the government develop an efficient urban housing policy and an adequate administrative executive staff. The project rested on three components: the renovation of services in a poor quarter and a sites-and-services- programme (the Sawad Saawan Project), a programme of activities regarding efficient building and financing, and institutional support for the then Ministry of Municipalities and Housing, which was responsible for (urban) housing. The project was supported by the World Bank.\textsuperscript{364}

\textsuperscript{363} NRC, “Repairing Fractured Landscapes: Challenges and Opportunities for Resolving Disputes over Land, Housing, Water and Other Natural Resources in Yemen,” April, 2019.

\textsuperscript{364} World Bank, “Sana’a Urban Development Project, Project Completion Report”, 1993
The Sawad Saawan project in Sana’a was based upon the concept of sites and services (Figure 39), using a carefully planned community-oriented layout. Larger scale community facilities such as a market area and schools were integrated from the start, and small neighbourhood squares were distributed to serve sub-quarters. The project targeted low to medium income groups.

The site layout offered a variety of plot sizes ranging from 72 to 96 sqm and used economic road widths and a network of pedestrian alleys to create an urban instead of a sub-urban environment. According to a document on urban planning in Yemen, it was planned to house a total of 33,000 people on 55 hectares (quite high), anticipating an urban population density of 600 persons per hectare. Prices of plots were computed in proportion with plot size, and in relation to the width of the adjoining road. Plot allocation, surprisingly, was done on the basis of household size and not by households’ payment capacity. 128 model houses were constructed, displaying four different types. Building heights were originally intended not to exceed two floors.

365 Ministry of Municipalities and Housing, General Administration for Housing, “Guide to the Beneficiaries of the Urban Development Project Sawad Saawan,” 1985. However, one of the beneficiaries tells that the range of plot sizes was wider, namely: 60 - 90 - 104 - 120 - 160m² plots.

366 The author of this document worked on Urban Planning in Yemen during the 1970s, and has provided record of urban planning in Yemen from the 1970s until mid-1990s. Unfortunately, only a section was available to Assoc. Prof. Wael Abdulmoghni Alaghbari, at the university of Sana’a who has researched this section. No author, publisher or date could be retrieved.

367 KII
State of Yemeni Cities

After 25 years, the neighbourhood is a well-functioning residential area with a central market. Building heights are however between 2-6 storeys, in most cases exceeding what was originally calculated for two storeys only. Structural soundness has not been assessed, however the organisation of the area accommodates this vertical growth. The interchanging pedestrian alleys and wider lanes for cars, where parking is possible, are, after 25 years, still acceptable for the current number of cars.

Land and Property Disputes

The absence of a transparent land registry and system for authenticating land deeds and documents (formal or customary), a weak cadastre, complex and overlapping legal systems for land and tenure, a history of land grabbing, in addition to a lack of adequate dispute settlement mechanisms increase and deepen land disputes in Yemen. Land and water disputes constituted 50-85 percent of all cases appearing before primary courts in 2011.

The ambiguity around ownership and rights is further amplified by cases where legit land titles are deemed invalid against petitions from claimants with better connections and/or more power. Transgression of traditional rights is increasingly common. Moreover, the nature of land ownership and distribution issues is such that law enforcement and judicial powers are subject to political, social, and economic influence, putting weaker social groups at a disadvantage.

According to Rep. of Yemen National report (UN-Habitat 2016) Yemeni rural and urban women have access to land and property. According to a recent NRC report, Islamic law recognizes women’s rights to land and property, even in the case of inheritance, although the shares to which they are entitled are less than their male peers. However, the Islamic legal principles nor customary norms guaranteeing women’s rights are often not respected, leaving women with limited ability to secure land and property rights. Yemeni statutory law provides even more comprehensive legal protection for women on some points, but in others follows Islamic legal traditions more closely. In many cases women transfer their rights to their husband’s family in order to be protected and to guarantee their future. Even in inheritance under the Shari’a law, women enjoy fewer rights under the Islamic compulsory succession rules compared to males. In customary Yemeni law women are not even entitled to inherit land but will receive a small amount of money. In this regard, protection of land rights for women would contribute positively in efforts to reduce poverty in the rural and peri-urban areas.

According to the same report, NRC found that the most common land disputes could be categorised by the following seven types of disputes:

1. Overlapping claims: The deficient land administration has resulted in widespread overlapping and contested land claims as land has been re-sold multiple times, or land has been sold without the knowledge of the rightful owners. Political favouritism has contributed to the growth of an extensive backlog of claims. The weakness of the system has been further exploited by parties to the conflict, with strong actors using militias to seize land. The report notes that some of this land grabbing potentially can be attributed to efforts to settle grievances from before the war, but more often the land is used as ‘war booty’ – seized from persons perceived unable to fight back. Returning IDPs can equally experience that reclaiming land is challenging due to re-selling of land during their absence, or extensive over-divided plots.

---

368 As per assessment by Assoc. Prof. Wael Abdalmoghi Alaghabari, University of Sana’a, as part of this study.
369 NRC, “Repairing Fractured Landscapes: Challenges and Opportunities for Resolving Disputes over Land, Housing, Water and Other Natural Resources in Yemen,” April, 2019.
370 Ibid
2. **Boundary disputes:** The absence of a central cadastre and land registry has also given room for contestation of plot boundaries between neighbours. Resolving these disputes has to rely on alternative forms of evidence, such as oral history or physical markers (trees, rocks, streams etc.).

3. **Inheritance disputes and divorces:** Disputes over inheritance and divorces are common yet complex disputes to settle, and especially put women in a vulnerable position in claiming ownerships. While there are provisions for these disputes in customary, religious, and statutory frameworks, a significant challenge to third party dispute settlement is a dominant taboo related to exposing ‘internal’ family matters. The conflict has exacerbated inheritance disputes, amongst others by the displacement of city dwellers who return to their villages resulting in the reopening of old claims (NRC found cases of this in the Lahji and Ta’iz governorates), as well as the death toll due to the conflict, natural hazards, and diseases creating further land claims. There are currently one million returnees in Yemen. The conflict has further caused losses and destruction of land and inheritance documents further complicating dispute resolution.

4. **Informal occupation:** The prevalence of urban informal settlements pre-war as well as further occupation of public and private land and buildings due to conflict-induced displacement causes another form of disputes. These disputes include conflicts with private owners and complexities over service provision to IDPs and dwellers in informal areas, often related to tension with local communities and owners seeking to protect property from future claims on their properties. Furthermore, IDP hosting families may face challenges in receiving e.g. shelter assistance as they are not able to document formal ownership, and on the other side IDPs may find land restitution challenging upon return to formerly informally occupied land.

5. **Disputes over temporary housing arrangements:** 66 percent of the urban population living in informal settlements face major concerns related to security of tenure371, with the prospect of eviction being a major threat. For IDPs, where more than 70 percent have found temporary housing arrangements either with host families (50 percent) or renting (22 percent), tenure is particularly insecure, often stemming from rent disputes linked to lack of income or insecurity income or inflation of the Riyal.372 For instance, rent in Ta’iz where IDPs settle ranges from $60 to $150, compared with $20 to $40 in rural areas373. For those experiencing eviction, there is a great chance that they will join either a spontaneous settlement or are forced to return home without the required security in place. The lack of legal redress, both as a result of often lacking written agreements, vague description of rights and responsibilities, and a weak legal system, further contribute to tenure insecurity and the possibility of eviction. Further, attempts to negotiate or resolve disputes with landlords often result in rent increases or simply pushes the dispute further ahead without leading to a resolution.

6. **Water disputes:** Disputes over water resources and water distribution structures was a key source of conflict pre-war which only has intensified during the conflict. Article 8 in the Constitution stipulates that surface and groundwater resources are a communal property in Yemen. However, customary rules direct access and use. According to NRC, these includes:
   
   a. Means of extraction can be owned by those who sink wells or boreholes;
   
   b. A minimum distance between wells and boreholes are ensured specific to certain zones;
   
   c. Those who own land upstream have priority rights over downstream users;
   
   d. No one can be denied drinking water by another person

   A defective water governance has neither contributed to reduce the over-extraction of resources, nor adequate dispute resolution. Male-dominated traditional leadership has at one hand secured access to large land-holdings responsible for significant water consumption, and at the other hand holds positions that often is trusted for dispute resolution but in these cases may be either party to the disputes or are interested in a sustained status quo. The conflict has exacerbated competition over water resource access, amongst others seen by destruction of water infrastructure and “water-grabbing” through illicit water extraction. Examples also show practices of local authorities extracting fees over consumption or selling water to private truckers.

7. **Firewood disputes:** Firewood is increasingly relied on for cooking, water boiling and heating as access propane gas has diminished during the conflict. Given the limited tree coverage in the country, firewood is equally a scare

---

371 According to the World Bank Integrated Urban Development Project.
372 NRC, “Repairing Fractured Landscapes: Challenges and Opportunities for Resolving Disputes over Land. Housing. Water and Other Natural Resources in Yemen,” April, 2019.
resource, usually collected on private or communal land. Where demarcation of unused plots where firewood can be found has vanished as the land was uncultivated and thus perceived as communal, conflicts have arisen as the firewood and subsequently the plots has increased in value and ownerships are more strongly asserted.

Land Dispute Resolution

Land disputes resolution in urban areas rely primarily on the courts system. However, solving disputes in the courts is hampered by slow court processes, high costs, and a system subject to corruption. In rural settings, dispute resolution is reliant on customary practice and Islamic Law, and mediation from district and village officials and local tribe leaders. In the absence of functioning legal institutions to address land disputes and grievances, as well as limited access to customary and religious dispute resolution mechanisms, in some cases urban dwellers do not have any legal recourse. This is particularly critical for IDPs and others who face evictions or those facing seizure of their properties (see sub chapter on Tenure security). Today, the government is rarely able to protect private property.374

After the unification of Yemen, extensive land grabbing and expropriations transpired in South Yemen, dispossession happened amongst other through the patronage-based rule of the Saleh government whereby “northern” bureaucrats were put in position in the South with subsequent access to land, as well as return of land to sheiks and sultans previously expelled from the South region by the former communist government – irrespective of tenants then occupying the land.375 376 Following the 2011 uprising, a South Southern Yemen Land Remedies Commission was commissioned in 2013 by way of a Presidential Decree Decision No. 2/2013 to settle land disputes following the land grabbing after the unification. The commission reportedly received some 90,000 claims within months following its establishment, with petitions to solve decades of enduring grievances. However, it faced constraints due to lack of evidences, illiteracy of claimants, the weaknesses in the land administration system, as well as political pressure exerted by those illegally in possession of land. The committee was suspended during the current conflict.

Militias and extremist groups have used the lack of institutions to resolve land disputes and accumulation of land grievances during the conflict to position themselves as arbiters protecting private property.377

In their study, NRC found that no respondents, regardless of whether they were women, men, IDPs, host communities, or Muhamasheen (marginalized), had experienced an adequate resolution to their land disputes through the courts, with courts failing to provide both security and justice. This was attributed to bribing of judges, prosecutors or clerks to delay proceedings and forcing a withdrawal of cases due to depletion of financial resources.379 As such, people are further forced to resort to customary or informal dispute resolution.

Increased pressure on HLP rights following the conflict

The conflict in Yemen has impacted Yemeni cities profoundly as well as asymmetrically, where damage to buildings, influx and departure of displaced persons, spontaneous settlements patterns and the cities pre-conflict configurations and development all adds to the complexity.

In rural areas, housing options in displacement sites has been easier to access, while such sites are relatively rare in urban areas. In cities, a large share of IDPs settle in the informal areas at the urban fringe. In 2018, a no-camp policy was adopted in Yemen. As such, alternative shelter strategies, including repairs, rent subsidies in form of cash, assisting with the identification of shelter options for IDPs and potentially building of transitional centres have been developed. Table 12 showcase some of the impact to the housing demands across Yemen cities from displacement.

Protest the lack of progress in the provision of basic services, reconstruction, and development projects in their city. Accusations has also been made against the engineers commissioned by the District Level Authority to assess housing damages, claiming the preferential allocation of compensation and funds for those connected to the local government, while devaluing damages to houses of other citizens who are politically unaffiliated.380 Reportedly, citizens who protest in Zinjibar are usually met by unlawful arrests carried out by local authorities.381

Explosive remnants of war

For returning IDPs, a threat to potential return to their dwellings is the contamination of housing and land with landmines or other explosive remnants of war. Based on past experiences from the presence of land mines in Yemen, mine clearing is slow and will affect return and reintegration of displaced, as well as hindering access to resources.

Landmines have long posed a threat to the inhabitants of Zinjibar and continue to do so despite past campaigns to remove them. It is unclear whether recent reports of landmine damage can be attributed to previously planted mines or new ones.


375 NRC, “Repairing Fractured Landscapes: Challenges and Opportunities for Resolving Disputes over Land, Housing, Water and Other Natural Resources in Yemen,” April, 2019.


377 NRC, “Repairing Fractured Landscapes: Challenges and Opportunities for Resolving Disputes over Land, Housing, Water and Other Natural Resources in Yemen,” April, 2019.

378 Ibid

379 Ibid


State of Yemeni Cities

Ma’rib

Since the outbreak of the conflict, its population has increased fiftyfold, transforming Ma’rib into a large, bustling city with a sharp increase in affordable housing demands.

Aden

Satellite imagery analysis suggests that the size of the residential fabric in Aden almost doubled in the last 15 years (+85 percent). Only about 30 percent of IDPs have settled in the new expansion areas, while the remaining 70 percent have settled within one of the city’s existing areas. This includes middle class areas. Due to the unavailability of affordable housing options, housing shortage has been met by addingorskors to existing buildings posing risks to the structural capacity of the load-bearing system of these buildings, with the threat of collapse. Throughout Abyan Governorate, IDPs end up living either in make-shift shelters, in public buildings, renting or sharing residences with other families – often stretching the host communities’ capacities to the limit and exposing vulnerable groups to protection risks.

Al Hodeidah

While the city grew steadily before the war, data suggests a staggering drop of over 475,000 individuals, or 78 percent of the population in 2018, resulting from displacements from the city. If the drop in population is correct, with only about 130,000 inhabitants left, it would imply that currently more than three-quarters of houses in Al Hodeidah are empty, which poses a great threat for looting, lack of maintenance or secondary occupation.

Al Hawtah

The largest displacement settlement in Lahj Governorate is Camp Kharaz, with 3,855 inhabitants predominately Somali and Ethiopia refugees. The housing deficit in Al Hawtah is estimated to almost 4,000 houses. The current housing stock would have to be increased with almost 60 percent to accommodate the current population. Landlords in Al Hawtah are generally willing to rent their properties to IDPs. Shelter Cluster data suggests that 96.4 percent of landlords in Lahj Governorate indicated they would not object to renting their properties to displaced individuals – while 3.6 percent object. However, the unwillingness of some landlords to rent to IDPs might be a result of IDPs’ inability to pay rent on a regular basis owing to livelihood restrictions and a lack of income.

Zinjibar

Former residents of Zinjibar returning after years of displacement continue to complain about the absence of any signs of a real solution to their hardships. Many families now reside in vacant and damaged government buildings.

Sana’a

According to the HNO 2019, there are 430,902 IDPs in Amanat Al Asimah. 68 percent of the IDPs are located in the top three districts: Bani Al Harith, Ma’ain and As Sabain. According to the same source, the numbers of returnees stand at 186,168, with 63 percent of all returnees located in As Sabain (76,026) and Assafi’ah (40,998). According to a 2018 Multi-Cluster Location Assessment (MCLA), there were 356 migrants in Amanat Al Asimah governorate, representing a 2 percent share of the total number of migrants in Yemen. According to the same source, 81 percent of refugees and migrants are in need of rental subsidies in Amanat Al Asimah.

Table 12: Displacement impact on housing demand

Discrimination against women and minority groups

Particularly for women, the rights and protections acquired under the family law were weakened in the Personal Status Law passed in 1992.

While the courts represent the only stable provider of land dispute resolution services in urban areas, women, minorities, and poor population groups face structural barriers to accessing courts. Lack of awareness of rights, discriminatory practices, and the costs associated with adequate representation limit their ability to exercise their rights.

Limited shelter options often disproportionally affect women and girls who suffer the most from lack of privacy, threats to safety, and limited access to basic services. Several factors impacting power relationships, such as lack of education, early marriage, and not being able to leave the home to find work, are making female-headed households especially vulnerable. Without an income, many are unable to pay rent, resulting in negative coping mechanisms that exposes them to sexual and gender-based violence, including from landlords.

Gender-based violence that deters women from claiming her rights to land within a divorce or their rights to an inheritance is particularly affecting women.

References:

389 NRC, “Repairing Fractured Landscapes: Challenges and Opportunities for Resolving Disputes over Land, Housing, Water and Other Natural Resources in Yemen.” April, 2019.
390 NRC, “Repairing Fractured Landscapes: Challenges and Opportunities for Resolving Disputes over Land, Housing, Water and Other Natural Resources in Yemen.” April, 2019.
391 NRC.
widespread in Yemen and takes different forms. This is often due to the fact that registration of property is done in a man’s name; the father, husband or brother. In case of separation or divorce, the man often retains rights to the property or land whereas the woman becomes homeless or will have to share the property with her in-laws without gaining control or rights over it.

The escalation of the ongoing conflict since March 2015 has greatly magnified the Muhamasheen community’s poverty, displacement and severely hampered their social standing. With an estimated population of 3.5 million individuals throughout Yemen, the Muhamasheen were among the first groups to be displaced early in the conflict, the displacement served only to compound the levels of discrimination they faced. Similarly, they continue to struggle to access IDP camps or proper shelter in public institutions, such as cultural sites or even schools, due to the extent of prejudice they face from other IDPs. The Muhamasheen are discriminated against without any legal basis, as are Yemenis born abroad, particularly when one parent is of African origin.


<table>
<thead>
<tr>
<th>Law</th>
<th>Purpose</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>Real Estate Registration Law (1991)</td>
<td>Stipulates the two systems for registering a title deed or ownership document. The state recognizes the right of ownership if the deed is registered in the title deed system, but does not acknowledge it if it is registered in the system of ownership deeds. The validity of the ownership document depends on extracting it from the original owner through a series of transactions. However, most transactions are not recorded in Yemen.</td>
<td>Regulates the powers of ministries and other bodies, including governors, in confiscating private real estate properties for use in the public interest.</td>
</tr>
<tr>
<td>Endowments (WAQF) Law (1992)</td>
<td>Regulates lands that have been donated or (as a waqf) to religious bodies, which were previously managed by a traditional or endowment director of endowments, but are now managed by the Ministry of Endowments, and to ensure that the land is used and managed according to the purpose for which it is intended. The land's development into other functions is usually suspended (waqf translates to 'stopped').</td>
<td>Elaborates planning procedures, types of plans, and items to consider when preparing site layouts.</td>
</tr>
<tr>
<td>Lands and Real Estates Law (1995)</td>
<td>Defines the definition and management of the disposal of state lands in a general way and in accordance with the approved plans and programs.</td>
<td>Defines the structure of decentralization at the governorate and district levels, including urban planning and administration from the central authority to the governorates, municipalities, and directorates' levels.</td>
</tr>
<tr>
<td>Right to Own Property Act (1995)</td>
<td>Regulates the powers of ministries and other bodies, including governors, in confiscating private real estate properties for use in the public interest.</td>
<td>Transferring financial and administrative responsibilities to decentralization, including urban planning and administration from the central authority to the governorates, municipalities, and directorates' levels.</td>
</tr>
<tr>
<td>Urban Planning Code, Law no. 20 (1995), including the bylaw Prime Ministerial Decree no. 60 (1997)</td>
<td>Elaborates planning procedures, types of plans, and items to consider when preparing site layouts.</td>
<td>Regulates building and construction licenses in Yemeni cities. The law stipulates that building permits must be obtained before constructing; renewal, alteration, or expansion of any construction requires a new permit.</td>
</tr>
<tr>
<td>Local Authorities Law (2000), including regulation No. 26 (2000)</td>
<td>Stipulates the structure of decentralization at the governorate and district levels, including urban planning and administration from the central authority to the governorates, municipalities, and directorates' levels.</td>
<td>Allows the sustainable use of water protect water resources from overexploitation and balances the water needs of the various communities and sectors.</td>
</tr>
<tr>
<td>The Construction (Building) Law (2002)</td>
<td>Regulates building and construction licenses in Yemeni cities. The law stipulates that building permits must be obtained before constructing; renewal, alteration, or expansion of any construction requires a new permit.</td>
<td>Allows the sustainable use of water protect water resources from overexploitation and balances the water needs of the various communities and sectors.</td>
</tr>
<tr>
<td>Investment Law (2002)</td>
<td>Aims to provide investment encouragement and guarantees to the state, regardless of the nationality of the investor and is managed by the General Investment Authority (GIA), which designates the lands required for investment projects and contracts with investors on behalf of the authorities and can sell or rent out lands in industrial/investment areas that have been completed.</td>
<td>Allows the sustainable use of water protect water resources from overexploitation and balances the water needs of the various communities and sectors.</td>
</tr>
<tr>
<td>Water Law (Law No. 133 (2002))</td>
<td>Aims to provide investment encouragement and guarantees to the state, regardless of the nationality of the investor and is managed by the General Investment Authority (GIA), which designates the lands required for investment projects and contracts with investors on behalf of the authorities and can sell or rent out lands in industrial/investment areas that have been completed.</td>
<td>Allows the sustainable use of water protect water resources from overexploitation and balances the water needs of the various communities and sectors.</td>
</tr>
</tbody>
</table>
Stipulates the establishment of the General Authority for Land, Survey and Urban Planning (GALSUP) consolidating the Land Surveying, Mapping and Land Registration, Management of State Land and Real Estate as well as Urban Planning.

Under the decree, GALSUP was mandated with the following tasks:

- Defining, registering, protecting, managing and allocating all state lands and properties
- Allocating the necessary lands for public and investment projects
- Research, studies and surveying on land use, prepare and analyse topographic maps and aerial photography, identify and map informal housing
- Setting standards and special conditions for the urban planning process according to the local conditions of each governorate
- Prepare and approve all building plans, regional plans and master plans in addition to preparing detailed plans in the governorates through its branches, including development plans for informal housing areas.
- Prepare all detailed maps for real estate spaces for the purpose of real estate registration, urban planning and resolution of all expected disputes due to those activities.
- Carry out all survey, technical, legal and administrative work related to the real estate registry and prepare the necessary maps.

|-------------------|--------------------------------------------------------|

| Energy Act No. (1) (2009) | Provisions for generation, transport, wholesale, distribution, and consumption of electric power activities, as well as its import and export to and from Yemen. The Act aims to: ensure electrical energy security; diversify environmental friendly sources of energy production, including renewable energy and reliable sources of sustainable energy; ensure the functional separation of the services of electric power; set and apply tariffs in a fair and transparent manner; ensure safety, continuity and quality of electricity service; regulate the relationship between consumers and licensees; encourage domestic and foreign investment in the electricity activities. |


A new building code was prepared in 2002, however the executive by-law that is needed for enforcement has not been formulated. As such, Yemeni cities do not apply any building regulations apart from certain cases, such as maximum permissible heights along airport flight path.

---

394 These responsibilities were previously carried out by the Survey and Land Registry Authority (Presidency of the Council of Ministers), The State Land and Real Estate Department (under the State Land and Real Estate Authority affiliated to the Ministry of Public Works and Roads) and the urban planning sector (affiliated with the Ministry of Public Works and Roads) respectively.
Basic and Social Services

Basic and social service delivery in Yemen is suffering from large-scale damage to infrastructure and limited resources and capacity of local administrations’ to ensure adequate maintenance and delivery. With the added pressure on scarce resources as more people are moving to urban areas, most Yemenis are suffering from lack of access to and poor quality of health services, water, energy, education.

Access, availability, and operational capacity of health services has been severely affected by the conflict, rendering a large share of the population without essential healthcare. Health facilities in cities, including major hospitals, have been targeted. In overcrowded urban areas, the risk of infectious disease transmission is significant, particularly for those living in densely populated informal areas, and those without adequate housing, including poor water and sanitation conditions. The current spread of COVID-19 is compounding an already dire situation. Education has also become less accessible while the quality has been lowered, which is reflected in declining enrolment and literacy rates. Girls are particularly affected. Key challenges for those who remain in school include teacher absenteeism, lack of studying materials, and overall poor quality of education.

There is growing water scarcity and rapid depletion of the groundwater basin in Yemen. Urbanisation is adding additional strain on limited water supplies. Intermittent water supply delivery, with more than 6 million people in urban areas suffering from disruption or cut to supply, as well as significant water losses due to lack of maintenance of distribution networks, has resulted in people turning to private water tankers and mosques. For irrigation, farmers have resorted to untreated waste water, contributing both to significant health risks as well as soil erosion. The lack of access to safe water coupled with contamination from waste water are contributing factors to the ongoing cholera outbreak. The energy crisis, with more than 14 million people estimated to be without electricity, has intensified as a result of deteriorating electricity infrastructure. Without a system to meter water or electricity consumption in certain areas of the country, the consumers of these services cannot be charged. Finally, unmanaged urban growth has increased traffic congestion, road accidents, and air pollution, while extensive damage to road infrastructure is limiting inter- and intracity connectivity.

Already prior to the conflict, the health system in Yemen was fragile, lacking health infrastructure and human resources. Cities had relatively better health provision compared to rural areas, with an estimated 80 percent of urban areas having accessible health services. The escalation of the conflict since 2015 has put an additional pressure on a fragile healthcare system as a result of large numbers of casualties from fighting and the humanitarian situation, including epidemic- and pandemic- prone diseases.

An estimated 17.9 million people are in need of and lack access to basic healthcare in Yemen in 2020, of which 14 million are in acute need. Yemenis are faced by a health burden that includes widespread communicable diseases like dengue, diarrhea, cholera and COVID-19; noncommunicable diseases like heart diseases, asthma, and other respiratory illnesses; and violence and injuries. At the same time people have limited access to health services due to severely restricted provision, high transport costs and insecurity, including road blocks in some conflict areas, and lack of financing means to pay for medical costs. Médecins Sans Frontières (MSF) reports that the collapse of the economy and the country’s health infrastructure has meant that many people are unable to afford transportation to the few hospitals still functioning in the country, which means that people delay going to hospitals until they have gathered enough funds for traveling. According to the World Health Organisation (WHO), more people are now dying from the lack of access to treatment than from the wounds inflicted by violence.

Institutional and Legal Framework

Article 55 of the Constitution of the Republic of Yemen guarantees the right to health care for all Yemeni citizens. The Ministry of Public Health and Population (MoPHP) is the main body responsible for managing the health sector at the national level. Following Parliament approval of the Local Authority Law (LAL) in February 2000, governorates and districts health offices were charged with supplying healthcare. Reliance on private financing on the health sector, which was already pronounced before the conflict, has been exacerbated since. In 2014, 76 percent of the health expenditure came from private, out-of-pocket sources compared to 43 percent in 2000, while the proportion contributed by the state diminished from 54 to 23 percent over the same time period.

Health Infrastructure and Operational Capacity

Yemen’s health system is organised in primary, secondary, and tertiary health care. Primary and secondary health care services are free of charge across health care centers and units, with secondary health care being provided in governorate and district hospitals. Despite significant progress, the tertiary health care system in Yemen remains underdeveloped. Only Aden and Sana’a possess tertiary referral hospital, that also serve as training institutions. The infrastructure is inadequate with 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 have opted to travel abroad for treatment since the start of the conflict. One report suggests that 25,000 people travelled abroad in 2013-2014 to receive medical treatment, 75 percent of whom went to India.
The conflict has impaired an already weak health system and significantly reduced the ability of healthcare facilities to provide quality services at the same scale as before the conflict. Currently, out of 4,966 health facilities (HF), only about half of the facilities are fully functional, while 36 percent are partially functional and 13 percent remain non-functional. The operational health facilities face multiple challenges hindering the delivery of quality, effective and efficient health services, including inadequate number and capacity of health workers, lack of medicines and health equipment, as well as a lack of safe water, fuel, and power.

The economic crises as well as funding shortfalls from international partners, who in 2020 have reduced their support to the health care system, makes the situation even more dire. The current underfunding of the Yemen Humanitarian Response Plan has according to WHO led to a “fiscal cliff that is threatening the ability to provide a living wage for over 10,000 health care workers who staff Yemen’s functioning hospitals and health facilities”.

Health Workers
There is a significant shortfall of skilled health workers in Yemen, with an insufficient number of nurses and midwives and no doctors in 18 percent of the districts across the country. In functional hospitals, 53 percent are lacking generalists and 45 percent are lacking specialists, and only 20 percent of health facilities are equipped to treating chronic conditions, and merely 40 psychiatrists are present to serve the entire country. Given the limited availability of medical health education, it will not be possible to fill the deficit in human resources for health services, a situation further compounded by the fact that many skilled health professionals seek employment abroad. The health care workers who are still operating in Yemen faced multiple vulnerabilities. Most health personnel have not received salaries for at least 2 years, and the current COVID-19 is increasing the risk of falling sick or die, exacerbated by the reported lack of case management training, infection prevention and control, and use of personal protective equipment.

Damages by the war – targeting health care facilities
Since 2015 the UN has recorded 142 attacks on hospitals and other medical facilities across Yemen. Between April 2013 and December 2018, the UN recorded 137 attacks on hospitals in Yemen by the parties to the conflict, including 53 by the Saudi-led coalition, 43 by the Houthis, 17 by unidentified armed forces and groups, 8 by government forces, and the remaining by popular committees, crossfire between various parties, Security Belt Forces, Anshar al-Sharia and Al-Qaeda. The majority of the attacks were carried out in Ta’iz, Amran and Jawf governorates, including within Ta’iz city. Attacks on hospitals and ambulances has caused significant human losses and injuries and have on several occasions been reported as targeted attacks on health facilities and health workers. For instance, in 2016, an airstrike on a densely built civilian area in Sa’dah governorate where both an ambulance and civilian rushed to the scene to help injured, was subsequently struck by a second bombing. Other hospitals have been directly attacked by rebel groups attacking hospitals, while 27 hospitals have also been verified as occupied for military purposes.

Medecines, supplies and operational capacities in cities
The persistent and active fighting have long reduced the residents in Ta’iz’s access to basic services, particularly to essential healthcare. For example, Al-Thawra Hospital in Ta’iz, which serves several hundred thousand people, was attacked for the second time in ten days in March 2020. Ta’iz governorate has 383 Health Facilities (HFs), out of which 295 are fully accessible and 88 are partially accessible; 149 of these HFs are fully functioning and 234 are partially functioning. Healthcare in Ta’iz city consists of primary and secondary facilities, as well as specialized hospitals. In the Ministry of Planning & International Cooperation’s (MoPIC) assessment 8 public hospitals, 34 private facilities, 20 health centers and five health units were identified in the city. Ta’iz city has been the most affected city in the country in terms of damage levels, with roughly 70% of its HF being either completely destroyed or partially damaged. None of the public hospitals are able to provide the same level of services as before the conflict.

Healthcare in Sa’da City consists of primary and secondary facilities, as well as a number of health units and centers which are still functioning. Sa’ada City hosts 6 HFs; 4 are fully accessible and one is fully functioning. Only one HF is fully accessible and fully functioning, Al-Jumhoori Hospital, which has 93 beds and is the only public hospital which serves Sa’ada Governorate. The hospital is owned by the government, supported by MSF and is the only hospital in the governorate with emergency surgical capacity. Sa’ada Governorate has been significantly affected by attacks on health care facilities, with 25 documented incidents reported between 2015 – 2018, 22 of which were airstrikes.

Health facilities in Aden, including 10 private specialized clinics, seven pharmacies and dispensaries, three health centres, two private hospitals and one public hospital, are non-functioning. Furthermore, there are 30 health facilities which are partially functioning. Limited health services are available throughout the city, and emergency and major surgery services are unavailable in half of the districts.
### Figure 32: Number of Health Facilities and Their Functionality in Aden

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

*No facilities belonging to this category were identified by Ki*

---

**Figure 33: Main Healthcare Facilities in Sa’ada. UN-Habitat (2020).**
Disease Outbreaks

Yemen is severely affected by disease outbreaks. Also prior to the conflict, communicable diseases were the main cause of death in Yemen. Communicable diseases, including cholera, diphtheria, measles, dengue, or chicken pox have re-emerged in Yemen since 2015, and in 2019 alone more than 760,000 suspected cases of cholera, 25,000 cases of dengue, 1,600 cases of diphtheria and close to 10,000 suspected cases of measles was reported.

A WHO mid-June reported that the governorates with the highest number of suspected cases were Al Hodeidah (23,313), Sana’a (21,711), Ta’iz (18,059), Ibb (14,103), Al Bayda (13,510), Amanat Al Asimah (11,746). The number of confirmed cases for Amanat Al Asimah (Sana’a city) in comparison stood at 4 cases in July, an indication the figures of confirmed cases might be drastically lower than actual cases.

Contributing factors to the spread of such diseases are contaminated water sources, collapse of the public health system and limited waste, sanitation, hygiene services, and the rainy season and flooding. Further, overcrowding increases the risk of infectious disease transmission, where particularly those living in informal areas and in substandard housing in the cities are exposed.

The first cholera cases in Yemen were detected in early October 2016 in Sana’a. 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, Ta’iz and Aden governorates had highest number of suspected Cholera and Acute Watery Diarrhea (AWD) cases across Yemen, with over 500 suspected cases each.

The second cholera outbreak, the world’s largest outbreak, began in April 2017 with a total of 2,188,503 cases. As of January 2020, cholera had been reported to affect all but one governorate in Yemen, with more than 1.2 millions suspected cases since January 2018.

Women, who are using water more extensively than men, amongst others for irrigation purposes, are thus more at risk of contracting cholera.

Non-communicable diseases is a major and increasing cause of illness and mortality in Yemen. More than one million people in Yemen suffer from non-communicable diseases, including 35,000 persons with cancer, and a staggering 39 percent of mortality in Yemen was caused by non-communicable diseases according to WHO 2018 data. The availability and cost of specialized care alongside limited resources for the care continue placing a huge burden on patients who suffer chronic illnesses such as diabetes, hypertension, renal failure and cancer.

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

Women and health

The maternal mortality rate was high already prior to the conflict and has been rising since. In 2013 there were five maternal deaths per day, and by 2018 there were 12 maternal deaths a day. This means one out of every 260 woman dies in pregnancy or childbirth. Over the 2015-2018 period, one out of 15 girls aged 15-19 has given birth, one out of 260 women dies in pregnancy or childbirth, and one in every 37 newborn die in the first month of life, which means that every two hours one mother and six newborn die because of complication during pregnancy or birth.

UNICEF describes the healthcare support to mothers and childbirth as being “on the brink of total collapse”. 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 of Aden. More than half of the CFPs interviewed, indicated that drop-in centres for women are not accessible and needed in all districts in Aden.
There is a high prevalence of domestic violence against women and girls. Even before the conflict, more than 90 percent of women states that domestic violence against women was common. With the conflict, there has been a reported increase in domestic violence against women, as well as increased rate of divorce. Although reliable data on SGBV is rare, data from UNFPA indicates a sharp increase in SGBV: from 2016 to 2017 reported cases of SGBV increased by 36 percent, with an additional 70 percent in 2018.

Moreover, female genital mutilation (FGM) is common in Yemen. According to UNFPA’s dashboard on FGM, 19 percent of women and girls aged 15-49 have undergone some form of FGM, where Al Hodeidah governorate (62 percent) and the southern governorates of Hardamouth (80 percent) and Al Mahrah (85 percent) have the highest prevalence. A recent study on factors contributing to FGM found that the prevalence of female genital cutting (FGC) is 48 percent amongst women and 34 percent amongst daughters. Less than half of the surveyed women believed that the practice should be discontinued, representing generally younger women, and those with higher education and those with more economic empowerment.

**Covid–19**

By mid-July 2020, 1,585 cases of COVID-19 had been confirmed in Yemen, with 444 reported deaths. The corresponding mortality rate of 27 percent is five times higher than the global average mortality rate. 11 Governorates were affected, with Hadramout (589), Ta’iz (285), and Aden (269) having the highest number of reported cases. This is expected to be a misrepresentation of the number of actual cases. According to research by the London School of Hygiene and Tropical Medicine, infections may have already reached one million.

While testing has been bolstered over the past months, the July figures show that 6,981 tests (confirmed) has been conducted, confirming that testing capacity still remains low. The overall challenges of capacity of health services and access constraints are curbing response. Moreover, stigma and perceived risks in seeking care are contributing to delays in seeking care. Of the confirmed cases, with almost one third reported deaths, this figure supports a likely significant higher case load of infected people who have not been tested.

According to OCHA, reports indicated that health facilities had turned away people with severe symptoms of COVID-19, including high fever and distressed breathing, as the facilities were at full capacity or unable to provide safe treatment. Basic equipment such as masks and gloves, oxygen and other essential supplies for the treatment of COVID-19 has been . Many health workers have no protective gear, and most are not receiving salaries. Aid agencies are doing everything they can to help, but need further resources to scale up the COVID-19 response.

“Many are unable to stay quarantined due to their financial situation. So they go out to their jobs knowing they are at high risk of infection” Based on the existing knowledge of the health care workforce structure in place, medical and paramedical staff lack training on case management, infection prevention and control and use of personal protective equipment to face COVID-19.

**Malnutrition**

Yemen is facing unprecedented levels of hunger, with over 20 million food insecure people and nearly 10 million being acute food insecure. 238,000 persons are facing catastrophic levels of hunger and are barely surviving, while 190 out of 333 districts are facing emergency conditions. High food prices coupled with low and continuously decreasing purchasing power is manifesting some of the world’s highest malnutrition rates (see Economy sub-chapter Food security for more on this), with more than one million women and 1.7 million children suffering from moderate acute malnutrition. Given that 80-90 percent of stable food is imported, restriction on import is severely impacting access to, and malnutrition rates for, the more than 15.9 million Yemenis who are in need of urgent food assistance.

In December 2019, UNICEF reported that over 368,000 children under five years are suffering from severe acute malnutrition with 325,000 children suffering from life-threatening severe acute malnutrition, and by the end of 2020, UNICEF warns that the number of malnourished children could reach 2.4 millions. 45 percent of children under five years in Yemen are stunted as a result of malnourishment. 1.1 million pregnant and lactating women need treatment for severe acute malnutrition.

There are significant differences in malnutrition rates across urban areas. According to the nutrition cluster assessment February 2020 , as seen in Figure 42, of ten cities featured in this report, the cities classified with ‘very high’ Weight-for-Hight z scores (WHZ) Global Acute Malnutrition (GAM) are Al Hodeidah (25.2 percent), Zinjibar (20.8 percent), Al Hawtah (19.8 percent), Aden (15.5 percent) and Ta’iz (15-15.4 percent); the cities Al Mukalla (12.5 percent) and Sa’a’da (10.6 percent) are classified as ‘high’; Ma’rib (6.8-10 percent) is classified as medium to high; while Ibb (6.7 percent) and Sana’a (6.1 percent) classified as ‘medium’ WHZ GAM.
The prevalence of malnutrition varies greatly between cities as well. As seen in Figure 43, Al Hodeidah also has the highest prevalence of stunting with 63 percent across the city. While Sa’dah and Ibb has relatively lower levels of malnutrition measured as WHZ GAM, they both have higher stunting rates than the national average with 61 percent and 49 percent respectively. Al Mukalla and Aden has the lowest levels of stunting. Ma’rib and Ta’iz are the two cities with intra-city differences, where the rates in districts in Ta’iz were ranging from 40 percent (Al Qahirah, Al Mudhaffar, and Salh district) to 50 percent (At Ta’iziyah and Mashra’a Wa Hadnan district), and Ma’rib from 35 percent (in Ma’rib city district) to 29 percent (Ma’rib district). The high levels of stunting in some areas could be attributed to high concentrations of IDPs (Ma’rib) and high levels of poverty (Ta’iz) in specific pockets of the two cities.
Mental Health

Poor mental health is a serious challenge that affects domestic violence and family relations, education, work, physical health, and on a broader scale progress towards an end to the conflict. Despite this, mental health care is not integrated into the primary health system nor the legal system, and health services in Yemen that respond to mental health issues remain minimal.

The conflict is significantly undermining children’s psychosocial well-being with at least 35 percent of child protection incidents reported to social workers in 2018 being related to mental health and psychosocial issues. Further, a study by the Center for Applied Research in Partnership with the Orient (CARPO) found that of 902 school children surveyed, 79 percent reported experiencing Post-Traumatic Stress Disorder (PTSD).

This was further substantiated by a Save the Children survey after years of the conflict, interviewing more than 1,250 children aged 13-17 years, parents, and adult caregivers about their mental wellbeing. The survey found that one in five children always felt afraid, 38 percent of caregivers reported their children increasingly suffer from nightmares. The survey further found that children were especially fearful in Ta’iz (29 percent), of which 10 percent of interviewed children had been displaced from other areas in the north of the country affected by intense violence.

Education

Education used to be a political priority in Yemen. From the 1980s onward, both north and south Yemen made the development and expansion of their respective education systems a top priority. The share of the budget dedicated to education remained high following the unification in 1990. Between 1977 and 2000, illiteracy rates declined from 90 to 45 percent, and enrolment rates climbed steadily from 0.5 million to 3 million students. Enrolment in higher education witnessed significant growth, from 5,000 to 175,000 students for the same period. However, the current conflict, poverty and weak governance has made education less accessible and lowered the quality, with declining enrolment and literacy rates. Poverty has forced many parents to take their children out of school as they cannot afford paying school expenses (books, pens, bags, school fees, transportation, etc.). Teacher absenteeism, lack of studying materials and overall poor quality have further deteriorated the situation. Moreover, many schools have been damaged as a result of the conflict, where one in five school cannot be used as a direct result of the conflict. Following the escalation of the conflict in 2015, all schools suspended activities in August 2015, and the start of the academic year delayed by one month. At the start of the 2019-2020 school year, UNICEF reported that an estimated 4.7 million children were in need of education assistance and access to safe learning spaces, and 2 million children were out of school, including close to half a million who had dropped out since 2015. Another 3.7 million school children were at risk of dropping out. Girls are more likely to be affected, with 36 percent of girls out of school compared to 24 percent of boys.

The World Economic Forum an educational gender gap of more than 70 percent, where Yemen ranks 150th out of 154 on the sub-index of Educational attainment.

The situation is particularly precarious for girls. There are few public girls’ schools and private schools are unaffordable for many. UNICEF reported in 2019 that secondary-level girls are more likely to drop out due to security issues, lack of female teachers and the lack of appropriate WASH facilities. Furthermore, teachers in 10,000 schools (64 percent) are not being paid regularly, with a multitude of reports stating that teachers have not been paid since October 2016, thus losing their main source of income and becoming unable to provide for their family. In Sa’ada governorate for example, teachers have not been receiving their salaries and many students do not receive education on a regular basis.
### The education system of Yemen

Key legislation for education includes the Education Act (1964), which establishes different levels of education, and the Education Act (1965), which sets up scholarships and fellowships. Prior to the conflict, the education system was highly centralized. Currently, education sector in Yemen is managed by three separate ministries, each overseeing a specific level of education. 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. 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. The government of Yemen subsidizes public education at all levels. The Literacy and Adult Education Organization (LAEO), is an autonomous technical agency within the MoE that measures and reports on national literacy rates.

The education cycle in Yemen begins at early childhood, or preschool, which, is non-obligatory. Basic education, generally starting at the age of six or seven, is compulsory for all children. 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). Secondary school lasts for three years. The first year is general education and consists of literary and scientific subjects. 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.

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. Students who choose to proceed to vocational education upon the completion of basic education legally lose the opportunity to attend university in the future. 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. 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. The complexity of the system thus prevents not only further education but also the attainment of qualifications necessary to transition into the labor market.

### Education provision in the cities

Access to education is both a right and a vehicle to become agents of self-protection though increased knowledge and skills. This is of great important in urban contexts, where livelihood opportunities and access to resources, as well as staying safe and risk-informed, depend upon awareness and specific skillsets. As such, dropping out of school is rendering children vulnerable to, or reinforcing, serious protection concerns.

When the war broke out, many schools were quickly shut down, and some public schools were later turned into makeshift military installations. For example, out of the 1,624 schools in Ta’iz governorate, 468 schools were shut down, preventing around 250,000 students from obtaining an education. Moreover, in 2017 an IDP assessments conducted in Ta’iz revealed that 8 percent of girls aged 12 to 17 were pregnant, indicating a continued prevalence of early marriage, which further contributes to girls dropping out of schools. In 2015, UN verified 244 attacks on schools, most of which occurred in Sa’ada governorate (60), followed by Amanat Al Asimah (31) and Ta’iz (24).

In 2018, the Emergency Employment and Community Rehabilitation (EECR) Cluster Yemen reported that 238 schools in Sa’ada had been damaged due to the conflict, the highest number of damaged schools after Ta’iz.

Most educational institutions are hardly functioning due to the shortage of teachers as well as operational funds for the schools. Additionally, in June 2019, the UN reported verification of 28 attacks against schools; attacks mainly occurred in Ta’iz, followed by Sa’ada. The UN also verified 32 military uses of schools, a fourfold increase compared with 2017.

In Ma’rib there has been an expansion of schools services, with new schools being built and existing schools expanded to respond to the rapid growth of the city and increased number of prospective students. In November 2016, the University of Sheba Region was established as the first governmental university in Ma’rib to offer higher education programs, with 9,000 enrolled students. However the capacity is limited with only three facilities, resulting in overcrowding.
Figure 37 Main education facilities in Sa’ada.
UN-Habitat (2020). Source: Wikimapia, OpenStreetMap

Figure 38 Public Schools in Sa’dah.

Figure 45 shows the number of public schools in Sa’dah governorate and city in 2016-2017. Comparing the schools to the estimated total population, there are 1,569 persons per school in the governorate, while there are 3,412 persons per school in the Sa’dah city, suggesting that people living in other areas have better access to schools and/or that the schools in the city are suffering from more overcrowding.
Yemen is a water-scarce country, situated in an arid region with no permanent rivers. The annual per capita share of renewable water resources is the lowest worldwide; with less than 150m³ per capita annually it is significantly lower than the average global figure of 7500m³ annually. This extreme water shortage has been exacerbated by unsustainable withdrawal of freshwater, particularly with the introduction of deep tube wells which significantly increased the capacity to extract groundwater. Of available water resources agriculture is consuming an estimated 90 percent, which is the highest percentage in the MENA region.

Over half of the water is used for cultivation of Khat. As a result of expanded groundwater extraction, there was a 1,000 percent increase in cultivated farmland between 1970 and 2004. In 2005, fresh water extraction was estimated at 168 percent of total renewable water resources. At the same time, access to improved water sources declined from 66 percent to 55 percent nationwide between 1990 and 2010. This constituted a drop from 96 percent to 72 percent in urban areas and from 59 percent to 47 percent in rural areas. Furthermore, the conflict has worsened service delivery and increased institutional limitations on water and sanitation. The share of the population with access to improved water decreased from 52 percent in 2015 to 31 percent in 2017, and the Humanitarian Update March 2020 estimated that a total of 24.3 million people in Yemen now require humanitarian assistance to ensure basic services including safe drinking water and sanitation.

More and more illegal wells are drilled as a short-term solution to increasing water scarcity, adding to the dramatic depletion of groundwater levels, especially in Sana’a. Yemen’s official figures estimated that 99 percent of all extraction of water is unlicensed and that 800 drilling rigs are operating illegally. Excessive water extraction has also been made possible by subsidised fuel prices, low cost and lacking regulation for extraction, and unclear water rights. Yemen’s rapid population growth and urbanisation rates are adding additional strain on water supply networks characterised by weak water management and low adaptive capacity and resilience to water shortages and other climate changes related impacts. Lacking functional domestic water meters and reading of the existing water meters is an issue for securing funds for water services. Many bulk meters have been installed on wells, pump stations, and reservoirs; but most of them are not functioning anymore, while others have been lost during the conflict. The continued unmonitored and uncontrolled extraction of limited groundwater resources is a cause for significant concern, especially in light of the link between water resources, fragility, conflict, and violence.

Yemen’s urban water supply and sanitation sector

The formal municipal water services are delivered by LCs under the Ministry of Water and Environment (MWE). The National Water Resources Authority (NWRA) is responsible for overall water resource management, including water use and allocation. Water and sanitation services are locally managed through decentralised local utilities, while national WASH activities are coordinated by MWE and UNICEF via GARWSP, LCs, and NWRA, as well as Urban Project Management Units in the case of multi-lateral development projects.
Urban water provision

In urban areas, more than 6 million people have seen their water supply disrupted or cut. Formal urban water service delivery, already intermittent in most cities before the conflict, has become even more uneven with many public services no longer operating due to lacking payment of civil servants salaries. As such, urban residents are increasingly seeking alternative sources of water supply, including private water tankers, kiosks, and private wells.

In Aden, for example, the authorities are reported to supply around 24 million m³ water annually, while demand is estimated at 39 million m³. It should be noted that in Yemen, water demand, access points and costs vary greatly between districts, requiring local-level investigations.

In 2017, water losses for the cities for which data exists constituted 30 percent to 59 percent, contributing to service gaps and economic losses (see Table 14). The groundwater resources are being depleted at a particularly alarming rate in the main basins of the highlands. In 2014, the groundlevel water outside cities such as Sana’a, Ta’iz, and Sa’ada were reported to reduce by a staggering six meters a year, with a water consumption amounting to that of ten future generations.

Prior to the conflict, the water and sanitation local corporations (LC) in Aden and Sana’a covered 90 percent and less than 50 percent of the city’s residents respectively. As a result of the conflict the formal water supply systems have suffered severe damage, face multiple challenges and are close to collapse.

In Sana’a, the municipal piped water network is usually operating only long enough to fill the household tanks in one district at the time. While the network is more reliable in Aden, the source water supplies suffer from challenges such as silt, sodium buildup and salinization. At the same time, research suggests that concerns regarding water availability is greater in Aden, while concerns regarding water quality is greater in Sana’a. In both cities, the water tariffs are not sufficient to cover operation costs.
Figure 39 The proportion of damaged parts of the sewer and water networks. Source: UNESCO

Figure 40 The completely damaged water network that needs urgent intervention. Source: UNESCO

There is no accurate data on water quality in Yemen, but anecdotal evidence suggests that quality has sufferec severely from the conflict. Utilization of private tanker trucks using chlorine tables provided by NGOs and the Ministry of Health has been undertaken to combat cholera, however the supply side dominated by informal actors is difficult to monitor or control.396

<table>
<thead>
<tr>
<th>Total population (million)</th>
<th>Sana’a</th>
<th>Al-Hod.</th>
<th>Ma’rib</th>
<th>Sa’ada</th>
<th>Ibb</th>
<th>Al Mukalla</th>
<th>Ta’iz</th>
<th>Zinjibar</th>
<th>Aden</th>
<th>Al Hawtah</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2.6</td>
<td>0.62</td>
<td>0.612</td>
<td>0.083</td>
<td>0.564</td>
<td>0.736</td>
<td>0.654</td>
<td>0.108</td>
<td>0.997</td>
<td>0.174</td>
</tr>
<tr>
<td>Water supply service coverage (%)</td>
<td>15</td>
<td>61</td>
<td>36</td>
<td>36</td>
<td>78</td>
<td>84</td>
<td>46</td>
<td>80</td>
<td>86</td>
<td>71</td>
</tr>
<tr>
<td>Sanitation service coverage %</td>
<td>10</td>
<td>41</td>
<td>0</td>
<td>0</td>
<td>62</td>
<td>46</td>
<td>?</td>
<td>44</td>
<td>69</td>
<td>0</td>
</tr>
<tr>
<td>Main source of water supply</td>
<td>GW</td>
<td>GW</td>
<td>GW</td>
<td>GW</td>
<td>GW</td>
<td>GW</td>
<td>GW</td>
<td>GW</td>
<td>GW</td>
<td>GW</td>
</tr>
<tr>
<td>Water production from LC wells (m3/d)</td>
<td>59,000</td>
<td>65,200</td>
<td>3,732</td>
<td>2,772</td>
<td>15,546</td>
<td>85,746</td>
<td>43,000</td>
<td>25,875</td>
<td>123,933</td>
<td>17,150</td>
</tr>
<tr>
<td>Water demand (m3/d)</td>
<td>260,000</td>
<td>93,000</td>
<td>73,400</td>
<td>56,400</td>
<td>56,400</td>
<td>120,000 in 2030</td>
<td>&lt; 100,000</td>
<td>?</td>
<td>206,959</td>
<td>?</td>
</tr>
<tr>
<td>WWTP capacity (m3/d)</td>
<td>5,050</td>
<td>35,050</td>
<td>na</td>
<td>na</td>
<td>3200</td>
<td>15,000</td>
<td>17,000</td>
<td>na</td>
<td>100,000</td>
<td>na</td>
</tr>
<tr>
<td>Water losses (%)</td>
<td>59</td>
<td>59</td>
<td>35</td>
<td>38</td>
<td>30</td>
<td>32</td>
<td>na</td>
<td>na</td>
<td>na</td>
<td>na</td>
</tr>
</tbody>
</table>

Table 14: Status of the water supply and sanitation in 2017 in selected cities.395

395 State of Yemeni Cities - University report Aden and Sana’a - available at UN-Habitat. 396 Ibid.
Sanitation

Yemen has nine functioning wastewater treatment plants (WWTP), estimated to treat 92,000m3 per day. The poor quality of the sewage effluent from WWTP as well as overall poor sanitation has severe health consequences. Data produced by the Water and Environmet Committee 2006, suggests that 75 percent of the population and 55,000 children dies annually, while three million people had contracted hepatitis due to the consumption of unclean drinking water.

Lack of management and deteriorating conditions of WWTP are contributing to the poor disposal and control of sewage. Sewage sludge poses a number of threats, including soil contaminantes, pesticide, heavy metal and human pathogens. Yet, most sewage sludge is disposed of by open dumping, landfillings, aerobic and anaerobic digestion and incineration. In urban areas, the unavailability and cost of land poses restrictions on dumping and landfillings. The WWTP are subject to frequent stop due to the need of maintenance and overloaded on the systems. This has led to the overflow of wastewater and bypass out of the WWTPs.

In Ta’iz, there has been a dramatic increase in the number of sewage system breakdowns since the conflict began, owing to the lack of maintenance caused mainly by the reduction and cessation of salaries for sanitation workers. Studies have demonstrated the negative correlation between usage of treated wastewater for irrigation and on unemployment, poverty, and health deterioration, amongst others. The improper management of wastewater has for example been the cause of the cholera outbreak in Yemen. In Sana’a, Ibb, Ta’iz and Aden, for example, using treated sewage water for irrigation is not legal, however it is still being used. In Sana’a, farmers close to the wastewater plant are almost exclusively (95 percent) using wastewater for irrigation (see Photo 12). The plant is furthermore overwhelmed and disperses poorly treated wastewater into the canal running through Bani Al Harith district.

---


398 Ibid

399 State of Yemeni Cities - University report Aden and Sana’a - available at UN-Habitat.


403 Ibid.

### Solid Waste Management

**Table 15 Solid waste collection coverage in cities**

<table>
<thead>
<tr>
<th>Solid Waste</th>
<th>Sana’a</th>
<th>Ma’rib</th>
<th>Sa’ada</th>
<th>Hodeidah</th>
<th>Ibb</th>
<th>Aden</th>
<th>Al Houtah</th>
<th>Al Mukalla</th>
<th>Ta’iz</th>
<th>Zaijub</th>
<th>Zenjubur</th>
</tr>
</thead>
<tbody>
<tr>
<td>SW quantity generated (tons per day)</td>
<td>1500</td>
<td>450</td>
<td>350</td>
<td>600*</td>
<td>600*</td>
<td>678.93</td>
<td>14.90</td>
<td>233.07</td>
<td>549.47</td>
<td>18.47</td>
<td></td>
</tr>
<tr>
<td>Estimation of solid garbage quantity (trash) by Ton Governorate level</td>
<td>566238</td>
<td>10261</td>
<td>34524</td>
<td>247938</td>
<td>116901</td>
<td>197186.00</td>
<td>155809*</td>
<td>172610.00</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* estimated by consultant (0.6 kg/cap/day)

**estimated by consultant (same national average)**


There are 21 disposal sites in Yemen, and 6 controlled landfills. In most of the governorates there is only one official disposal site. The waste composition in 2011 (see Figure 49) was mainly made up of organic waste (65 percent) while plastic was the second largest component making up 11 percent of total waste. In 2009, a National Strategy for Solid Waste Management was adopted to address the solid waste management situation in Yemen to improve the health and environmental conditions in the country. The strategy, covering a five years period, was aiming at reaching a point of regular collection of wastes from all urban areas. Already prior to the conflict, the waste collection rate was insufficient, with lacking resources and capacity. The conflict has exacerbated the local authorities’ ability to collect and manage solid waste. Main factors include indirect causes from conflict such as further restraints on resources to pay for public servants’ salaries, vehicle repair and fuel, as well as direct causes such as damage and destruction to equipment, vehicles and infrastructure. For example, Sana’a’s treatment plant for hazardous waste was destroyed in 2016. As a result, hazardous health waste is collected and disposed of with non-hazardous municipal waste, representing a serious health hazard, particularly for those handling the waste. Furthermore, due to the low or absent collection rate and damage, many of the traditional disposal sites are not operating. For those that are operational, inadequate solid waste management has led to fires and methane emissions, further adding to environmental stresses and risks affecting the water table. The absence of a collection system for leachate, a liquid discharge from landfills which stems from rainwater mixing with the waste, has major implications for both human health and the environment, as the leachate can contaminate soil and, eventually, reach the groundwater table. This poses a severe threat to human health in places boreholes used for drinking water are located close to landfills.

---

405 State of Yemeni Cities - University report Aden and Sana’a – available at UN-Habitat.
414 UNDP, “Emergency Waste Assessment in Yemen.”
Deficient waste management systems leading to clogging of canals in Taiz (UN-Habitat 2020).

Table 15 shows waste collected in cities. As the data illustrates, the rate of collection varies greatly across cities. Overall, the waste generation in urban areas was estimated at daily 0.65kg per capita compared to daily 0.35kg per capita in rural areas. Only 35 percent of solid waste in Yemen was collected, where on average waste collection reached 65 percent in major cities and 5 percent in rural areas, of which also many towns or cities has no or very limited waste collection. As a result, most of the waste is managed locally: solid waste and animal manure are often piled up in close proximity to houses and water sources, and at the outskirts of residential neighbourhoods, and about 75 percent of the waste is openly burned. Millions of tons of accumulated waste in urban areas represents a health threat as the waste attracts rats and mosquitos leading to the spread of vector diseases such as dengue.

An informal recycling sector is operating on a limited scale in Yemeni cities, while the formal recycling sectors is mostly inactive. The waste is usually collected and sorted by the Muhamasheen community, mainly by men. In 2015, there were over 50 registered recycling plants in Yemen receiving collected waste from informal waste pickers, mostly for export.

Photo 9 Deficient waste management systems leading to clogging of canals in Taiz (UN-Habitat 2020).

Figure 42: Yemen waste composition in 2011.

Energy

Electricity supply

Prior to the conflict, around 66 percent of the population had access to public electricity and 12 percent to private electricity. Existing supply constraints included electricity losses through transmission and distribution, accounting for around 40 percent of total water, as well as old, limited and inefficient power generation infrastructure. While consumer prices were amongst the highest in the MENA region, its revenues only covered about one fourth of the supply costs.

The conflict severely damaged electricity infrastructure, and has contributed to the collapse in energy provision. Particular the damage to Ma’rib gas power plant in 2015, which supplied most of the power in the country, rendering the plan nonoperational,
sent the energy sector on a downward spiral. The World Bank’s Damage Needs Assessment (DNA) shows about 55 percent of the assessed power sector assets were damaged, and 8 percent completely destroyed, which contributed to fuel shortages and has significantly impacted more than two thirds of the grid-connected generation of electricity by plants powered by heavy fuel oil or diesel. In 2014 and 2015 alone fuel-based electricity fell by 77 percent, and by 2017 less than 10 percent of the population had access to public electricity.

As Figure 43 shows, the share of the power sector that has been affected by damage varies greatly across cities. In most cities, the entire power sector has been impacted to some extent. The average share of completely destroyed power sector in the 15 cities assessed was 33 percent, partial damage was 47 percent, and no damage 8 percent. Al Hodeidah has the largest share (50 percent) which is completely destroyed, and also a large share classified as unknown, followed by Sana’a where 43 percent has been completely destroyed. While in both Ta’iz and Sa’dah at least 50 percent of the power sector is without damage, the operational status of the sector in Ta’iz is 100 percent not functioning, while in Sa’dah it is 50 percent with the other 50 percent defined as unknown. As such, Al Hodeidah, which as 10 percent of its power sector functioning, might in fact be better off despite sustaining severe damage. In Sana’a there is unequaly access depending on the area of the city, from no access up to 11-17 hours. In contrast, people in Ma’rib have, in generally, access to public electricity, however increased population pressure, nonpayment of electricity bills and decreased financial stability are all contributing to shortages in public power supply.

The entire chain of Yemen’s electricity from generation to distribution is public and operated by the Ministry of Electricity and Energy. The transmission system includes presently a 132 kV network that interconnects all major cities and governorates except Hadramout. Due to the critical supply shortage, the government purchases electricity from small-scale private suppliers. The energy crisis has intensified as a result of deteriorating electricity infrastructure, which is in dire need of rehabilitation and major investments to secure additional generation capacity.

---


422 Ibid.


425 Ibid.
development, limiting industrial production. In the major cities, many industrial and other commercial users operate their own generators to secure energy for their operations.

**Renewable Energy**

The deficits of public electricity supply generate a search for alternatives to fill the supply gap. Traditionally this has entailed purchases of generators to cover private energy demand. More recently there has also been a significant increase in local production and consumption of renewable energy, particularly solar energy. Amongst the advantages of these alternative energy sources is the independence of large infrastructures and grids. At the same time, both options are expensive, and may add considerably to the household financial burdens.

In 2009, the National Strategy for Renewable Energy and Energy Efficiency, developed by the Ministry of Electricity and Energy was adopted. The strategy was in response to the capacity shortage in the energy sector and the growing energy demand, and set out how the country’s energy sources could be more diversified by increasing the share of renewable energy generation. Of the renewable energy power generation options, the strategy pointed to wind energy as having the greatest practical potential, followed by solar (in the medium- to long-term), geothermal energy and then landfill gas.

**Wind energy**

The Public Corporation for Electric Power (PCEP) in Aden installed in 1979 a small wind turbine, as a pilot experiment. It had a 18 kW wind energy conversion system. This was the first Wind Energy Convertor System (WECS) for electric power generation in Yemen. However, the plant faced some mechanical difficulties and was ultimately dismantled.

The weather conditions in other coastal areas in Yemen are favourable to wind energy, a sector yet to be developed. The potential for generating energy from wind power is smaller than from solar, but in terms of technical potential it has greater than potential than geothermal energy.

**Solar Photovoltaic Systems**

![Use of PV Cells in Taiz (UN-Habitat 2020).](image)

---


The use of solar energy has increased rapidly in Yemen. The German Institute of Economic Research DIW analysed in 2019 what they call “Yemen’s solar revolution”.

Following the collapse of the public electricity sector in 2015, coupled with the lack of fuel required for diesel generators, the solar systems market has been on the rise. As such, Yemen’s “solar revolution” was primarily born of necessity, as an alternative for households who are unable to obtain electricity from other sources. The market is entirely private, and wholesale prices are usually one-third higher than international average. During the 2014-2016 period alone, over 170 companies registered as solar panels retailers with the government of Sana’a.

A 2016 market assessment by the Regional Center for Renewable Energy and Energy Efficiency (RECREEE) found that solar photovoltaic systems had reached 75 percent of urban households and 50 percent of rural households, while a WFP study from 2017 showed that in 14 out of 22 governorates solar energy is the main source of energy for households. The distribution of solar systems is reflecting environmental conditions as well as the degree of access to the public grid system. As coastal and desert regions generally are less suitable for solar energy technology, the most widespread use for these are found in the mountainous areas, which are also some of the areas hardest hit by the electricity crisis.

International organisations have largely embraced this reality, and are supporting a gradual transition to solar power. In 2018, IOM installed 940 solar panels on three schools in Amanat Al Asimah and Sana’a governorates, which help pump water to three districts in the city. The project supports delivery of 1 million liters of water to 55,000 people daily.

In 2019, a UNDP programme has supported ten women in Hajjah governorate north-west of Sana’a in establishing the first private solar energy grid in Yemen. The grid will provide clean energy for 80 percent lower costs than diesel-generated power and since 22 customers in 2018 expanded to 44 customers in 2019. As a response to the long-lasting power outages which critical affects health facilities and schools, the World Bank’s project Yemen Emergency Electricity Access Project in partnership with UNOPS are providing solar power systems to secure reliable and affordable access to clean water, lighting and other primary services.

Since 2017, the growth in the solar sector has been stagnating due to a number of reasons including: lack of skills and quality control; high prices due to weak competition, corruption, and the conflict; capacity constraints of civil society and educational institutions. Further, there are challenges of weak supply, short lifetimes, and high costs of solar systems. In a survey conducted in 2017, only 10 percent of households with solar systems stated that their electricity supply was sufficient.


Figure 44 Share of households with solar energy supply by Governorate (Redrawn from Percent or Polling Research 2019).
Transportation

From 1990 to 2015, the road network in Yemen grew from about 5,000km to nearly 16,000km and it is currently estimated to 50,000km, linking major and populated centers with more remote areas.439 In 2015, 60 percent of the paved road network, constituting just below two-thirds of all roads in Yemen, was in good condition. Yemen rapid urbanisation coupled with improved and expanded road infrastructure resulted in an escalated use of private vehicles. In Sana’a, for example, it was estimated that the registered number of owned cars and taxis close to quadrupled over a ten years period from 2001-2010,441 even if the share of collective transport modes was high.442 The increase in car ownership has led to more traffic congestion, accidents, inadequate parking space and air pollution, especially in the largest cities.443

A number of key issues is facing the transport sector, many of which were pre-existing challenges exacerbated by the conflict. These issues include “weak and underdeveloped planning and budgeting process, gross mismanagement within the Ministry of Public Works and Highways (responsible for development of the entire road network in Yemen) and Ministry of Transportation (responsible for the development of ports, airports, land and sea transportation needs of Yemen), inadequacy and unreliability of data and maps, and poorly uncoordinated upgrading of existins roads and maintenance”.444 In addition, the sector is suffering from damaged and poorly maintained road networks as well as weak enforcement of traffic rules, where the backlog of maintenance due to under-funding of regular maintenance have increased over the conflict period.

Major damage has been inflicted on urban transport infrastructure as a result of the conflict. The World Bank’s DNA Phase 3 estimates infrastructure damage for ports, airports, outer city bridges and interurban roads and assets in 16 cities.445 The study shows that particularly Ta’izz has suffered from significant damages to roads, where connection roads to Aden, Mocha and Al Hodeidah ports have been targeted. There is further limited civilian mobility within Ta’izz as a result of roadblocks and closure of roads. Also in Sana’a there been large damage to road infrastructure connecting the capital to other major cities, including Al Hodeidah. This is critically restricting humanitarian aid and food supplies from reaching Sana’a. As the same time, the local authorities have kept major inter-city roadways open and functional, despite damages. Al Hodeidah is suffering from damage to its port and airport. Moreover, major stresses are being blocked by sewage flooding and debris. In Aden key infrastructure, including its port, airport, and refinery which was severely damaged early in the conflict, has been restored after the fighting ended in the city. The estimated damage costs Sana’, Ta’izz and Aden, which accounts for more than 70 percent of the total road length in the 16 cities assessed, accounts for 70 percent of total costs across the cities.446 Moreover, the conflict has contributed to soaring fuel prices in the country, which in turn has increased transportation prices, commonly by a factor between three and five.447 This is particularly affecting women’s and girls mobility as they are more likely to lack financial means to afford transportation.448

Yemen’s road safety is amongst the worst in the world. In 2006, 5,200 deaths and 13,000 accidents with injuries affecting about 17,000 people and their families were recorded.449 As such, road accidents constitute a major concern for drivers as well as pedestrians. The streets are not properly designed for pedestrians which can make it challenging and dangerous to move around by foot, particularly for elderly and people with special needs. A study conducted in Sana’a found that amongst the traffic-related casualties admitted to the Emergency Departments of two hospitals, poor driving skills and road conditions were the cause of 12 percent of casualties.450

---

446 Ibid.
449 World Bank, “City and Inter-City Land Transport Sector,” 2010.
Climate change and natural disasters add additional stresses to already strained urban infrastructure and water systems, contributing to rising sea levels, urban heat island effect, and the degradation of ecosystems and urban green areas across Yemeni cities.

Yemen cities are prone to the impacts of climate change and recurring natural disasters, which already and increasingly will have consequences for human health, livelihoods, and assets, especially for the urban poor, displaced, and other vulnerable groups. Climate change and environmental stresses manifest with extreme weather events, such as torrential rains and flash floods, salt-water intrusion and hotter temperatures, contributing to, amongst others, reduced food safety and public health concerns. Yemen has the lowest water per capita availability in the world, where groundwater extraction exceeds replenishment capacity. Recurring droughts, inadequate agricultural development, population growth, and significant losses in urban water conveyance and distribution adds stress to the water table. Furthermore, rising sea levels correlating with declining groundwater aquifers will intensify salt-water intrusion.

Urban water systems, including water supply sources, conveyance, and disposal, are vulnerable to these stressors. Impervious surfaces and increased precipitation intensity can overwhelm current drainage systems. The use of untreated wastewater for irrigation contribute to soil erosion. Moreover, people living in houses located around plants have reported prevalence of mosquitoes, and health issues such as fever and fatigues possibly caused by malaria and cholera. The quantity and quality of the water supply in the cities will be significantly affected by the projected increases in both flooding and droughts. This is amplifying the need for upgrading of supply networks and reduce leakage from distribution systems to maximize the availability of existing supplies, as well as identifying holistic storm water management measures allowing for rainwater harvesting and ground table recharge. Cities in low-elevation and coastal zones, such Al-Hodeidah and Aden, face the combined threats of sea-level rise and storm surges.

Urban water systems, including water supply sources, conveyance, and disposal, are vulnerable to these stressors. Impervious surfaces and increased precipitation intensity can overwhelm current drainage systems. The use of untreated wastewater for irrigation contribute to soil erosion. Moreover, people living in houses located around plants have reported prevalence of mosquitoes, and health issues such as fever and fatigues possibly caused by malaria and cholera. The quantity and quality of the water supply in the cities will be significantly affected by the projected increases in both flooding and droughts. This is amplifying the need for upgrading of supply networks and reduce leakage from distribution systems to maximize the availability of existing supplies, as well as identifying holistic storm water management measures allowing for rainwater harvesting and ground table recharge. Cities in low-elevation and coastal zones, such Al-Hodeidah and Aden, face the combined threats of sea-level rise and storm surges.

### Climate

The climatology of Yemen cities is divided between the highlands, desert landscape, and coastal regions. The cities located in the mountainous South and West Highlands have a semi-arid to mild semi-arid climate, with elevation from 1100-2250 meters above sea level. Sana’a and Zinjibar are both at 2250m, Ibb at 2050m, while the other highland cities are at an elevation between 1000-2000m (see Table 13). Sana’a, for instance, is characterized by a mild version of a semi-arid climate with warm and mostly cloudy summers, cool, dry, and mostly clear winters.

The coastal cities have a hot desert climate and experiences long, hot summers, and relatively warm and windy winters, and dry all year round (Al Hodeidah, Aden, and Mukalla). While dry arid air is not optimal conditions for cyclones, the flat coastal plains and dry highland, as well as the arid weather at the same time makes Yemen both susceptible to desertification and flooding.

Over the past years, annual mean temperatures and annual number of hot days has increased. According to the 2017 Statistical Yearbook, the annual mean temperatures were between 26-30°C for most of the studied cities in 2016, while Sana’a, Sa’ada and Ibb had annual mean temperatures between 18-19°C.

The hottest period of the year is between April and June, with the greatest maximum temperatures in 2016 at 44,4°C in Ma’rib, 41,5°C in Aden. The other cities all have a maximum high above 33°C (see Table 16). During the short cool season, November to March, the greatest drop in temperatures is in the highland cities, with the minimum temperature of cities like Sana’a and Sa’ada sinking to around zero degrees. The highland cities thus experience annual temperature variations of up to about 35 degrees. The coastal cities experience a minimum temperature down to 16-22°C. The highest humidity is also recorded in the coastal cities, reaching staggering 93 percent in Al Mukalla, and 75 percent in Aden. Al Mukalla indeed also holds the most extreme variations ranging from 37 to 93 percent daily relative humidity.

### Table 16: Climate Data Yemen Cities (CSO Yemen)

<table>
<thead>
<tr>
<th>City Met. Station</th>
<th>Sana’a</th>
<th>Ma’rib</th>
<th>Sa’ada</th>
<th>Ho- deidah</th>
<th>Ibb</th>
<th>Aden</th>
<th>Al-Houtah</th>
<th>Al Mukalla</th>
<th>Ta’iz</th>
<th>Zenjubar</th>
</tr>
</thead>
<tbody>
<tr>
<td>Temp. Co Annual Mean (2016)</td>
<td>19</td>
<td>26</td>
<td>18</td>
<td>29,8</td>
<td>18,8</td>
<td>28,90</td>
<td>27,28</td>
<td>27,60</td>
<td>21,60</td>
<td>27,35</td>
</tr>
<tr>
<td>Maximum</td>
<td>33,6</td>
<td>44,4</td>
<td>35</td>
<td>39,4</td>
<td>39,9</td>
<td>41,50</td>
<td>34,00</td>
<td>39,50</td>
<td>34,20</td>
<td>33,08</td>
</tr>
<tr>
<td>Minimum</td>
<td>1</td>
<td>7,5</td>
<td>1</td>
<td>18,4</td>
<td>4,5</td>
<td>20,00</td>
<td>20,56</td>
<td>18,30</td>
<td>9,60</td>
<td>21,63</td>
</tr>
<tr>
<td>Humidity Relative Humidity Mean (%) (2016)</td>
<td>34</td>
<td>21</td>
<td>32</td>
<td>70</td>
<td>54</td>
<td>59</td>
<td>52</td>
<td>68</td>
<td>62</td>
<td>55</td>
</tr>
<tr>
<td>Rainfall Total Rainfall (mm)</td>
<td>264,5</td>
<td>13,1</td>
<td>41,4</td>
<td>64,5</td>
<td>1003</td>
<td>22</td>
<td>82</td>
<td>36</td>
<td>419</td>
<td>55</td>
</tr>
<tr>
<td>Elevation</td>
<td>2250</td>
<td>1122</td>
<td>1836</td>
<td>17</td>
<td>2050</td>
<td>6,00</td>
<td>16,00</td>
<td>1400,00</td>
<td>2250,00</td>
<td></td>
</tr>
</tbody>
</table>

453. Ibid.
455. Ibid.
Temperature changes 1987 – 2013

Several temperature changes have been recorded over the past decades, with the following key changes recorded between 1987-2013:

- Annual average temperature anomalies for the period 1987-2013 show positive values mainly in the second part of the time series indicating general temperature rise in all the cities. For the period mean annual temperature for Aden, Ta’iz, Zinjibar, and Al Houtah increased by 0.61°C. In Al Mukalla the increase stood at 0.76°C. The increase for all the cities were lower than the national average of 1.8°C, yet with an average increase for some months closer to the national average.

- During the same period, the annual average maximum temperature increased by 0.52-0.6°C for most of the cities, while in Zinjibar this increase stood at 1.38°C. For some months this increase was significantly higher, the highest in Ta’iz in July at 1.97°C. The minimum temperatures followed the same pattern. Furthermore, the frequency of warm days has also increased during the same time period. The increase of warm days was the highest in Zinjibar, with an increase of 49.87 warm days at a rate of 1.35 day per year.

The temperature increase in Yemen is alarming (Table 17). Desertification and reduction of the water table poses severe risks to peoples’ access to drinking water, agricultural production, and livelihoods. In the cities, temperature rise is further exacerbated by heat resources emitted from buildings (and air conditioning), asphalt roads, and limited vegetation, building up urban heat islands which in turn cause damage to asphalt roads and other infrastructure and impact human well-being. In cities such as Al Hodeidah and Ma’rib, the consequences of rising temperatures are becoming apparent as Yemen is increasingly experiencing heatwaves, which coupled with the high coastal humidity poses risks to peoples health and welfare. The impact of heatwaves is further aggravated by the electricity shortages and inaffordability and inaccessibility of diesel to run cooling systems.

### Table 17 Average temperature increase (RICCAR, sampled data).

<table>
<thead>
<tr>
<th>City</th>
<th>2016-2035</th>
<th>2046-2065</th>
<th>2081-2100</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>RCP45</td>
<td>RCP85</td>
<td>RCP45</td>
</tr>
<tr>
<td>Al Hawtah</td>
<td>0.8</td>
<td>0.9</td>
<td>1.6</td>
</tr>
<tr>
<td>Sa’ada</td>
<td>0.8</td>
<td>1.0</td>
<td>1.6</td>
</tr>
<tr>
<td>Ibb</td>
<td>0.8</td>
<td>0.9</td>
<td>1.5</td>
</tr>
<tr>
<td>Aden</td>
<td>0.8</td>
<td>0.9</td>
<td>1.6</td>
</tr>
<tr>
<td>Al Hodeidah</td>
<td>0.8</td>
<td>0.9</td>
<td>1.5</td>
</tr>
<tr>
<td>Sana’a</td>
<td>0.7</td>
<td>0.9</td>
<td>1.5</td>
</tr>
<tr>
<td>Mareb</td>
<td>0.7</td>
<td>0.8</td>
<td>1.4</td>
</tr>
<tr>
<td>Ta’iz</td>
<td>0.8</td>
<td>0.8</td>
<td>1.4</td>
</tr>
<tr>
<td>Al Mukalla</td>
<td>no data</td>
<td>no data</td>
<td>no data</td>
</tr>
<tr>
<td>Zinjibar</td>
<td>no data</td>
<td>no data</td>
<td>no data</td>
</tr>
</tbody>
</table>

456 Increase in weather and projections have been computed by the University of Sana’a and the University of Aden based on Statistical Yearbook data from the Central Statistical Organisation.

457 Change in Annual Temperature (RCM Ensemble for near-, mid-, end-century, extracted from data www.riccar.org. Ensemble of 3 bias-corrected RCM projections using daily data from 3 different GCMs (CNRM-CM5, EC-EARTH, and GFDL-ESM2M). Data over the 20-year period is averaged to obtain the ensemble.


Rising sea levels will have a severe impact on the coastal cities, as well as further infiltrate groundwater aquifers. Sea level rise projections modelled on Digital Elevation Maps (DEM) by the Climate Central, show that even a one meter sea level raise will submerge parts of Aden, Al Hodeidah, and Al Mukalla (Figure 42). In Aden large parts of central economic and residential districts will be fully submerged, including the airport, cutting the linkage to the Aden peninsula hosting the port facilities. A number of cities, towns and villages along the main road stretching from Aden, through Zinjibar and Al Mukalla, and further into Oman, as well as urban settlements located along the Red Sea coast to the west up towards Al Hodeidah, are similarly located on low lying planes that will be severely affected by sea level raise.

Natural Disasters

Yemen is prone to natural hazards, the most frequent being flash floods, storms, earthquakes, and land and rockslides. Floods have been the deadliest disasters in the country, followed by landslides (Figure 52). Over the past two decades, Yemen has become progressively vulnerable to natural disasters and environmental changes due to high population growth, unplanned and unregulated urban development, as well as poor environmental management, compounded by the vulnerabilities caused by the conflict. In cities, concentration of vulnerable populations, often living in informal settlements characterized by poor planning and inadequate housing, often overlap with areas that are particularly exposed to adverse natural events, such as settlements in the Wadi’s and in the hillsides. As a result of continued unplanned growth in these areas, the impact of severe weather events is expected to increase even more in the near future.
Tropical cyclones form once or twice per year in this part of the Indian Ocean, though rarely makes landfall in Yemen. The 2008 Deep Depression ARB 02 and the 2015 Cyclone Chapala, however, both struck the Hadramout and Al-Mahara regions, of the most-at-risk provinces for tropical storms. The 2008 storm, a level three tropical storm, caused 73 fatalities, and the destruction of some 3,500 houses.\footnote{462} The total value of the disaster effects was estimated at US$1.6 billion - equivalent to 6% of Yemen's Gross Domestic Product (GDP).\footnote{463} Cyclone Chapala, the strongest cyclonic storm to make landfall in Yemen, first struck Socotra island where it left some five years' worth of rain, before making landfall in the Hadramout and Al-Mahara regions (Figure 53 and Figure 54). While downgraded to a tropical storm soon after landfall, Chapala caused massive rainfall and flooding, displaced more than 6,800 families as well as several casualties. Chapala also had a severe impact on peoples’ livelihoods. The severity of such cyclonic events and heavy rainfall is in part due to the arid landscape with minimal vegetation cover and absorptive capacities, driven by exorbitant firewood gathering as an alternative to gas and electricity.\footnote{464} \footnote{465} In the Hadramout and Socotra districts it was estimated that the storm resulted in around 80 percent loss of livestock and damages to crops and fisheries.\footnote{466} \footnote{467} \footnote{468}

---

\footnote{462} IFRC and Yemen Red Crescent Society(YRCS), "Yemen : Flash Floods," 2009.


\footnote{468} ECHO, “Yemen – Tropical Cyclone Chapala.”
State of Yemeni Cities

Figure 48 Wadi al Masilah and Sayhut town before Cyclone Chipala, 19 October 2015. NASA Earth Observatory / Joshua Stevens.  

Figure 49 Wadi al Masilah and Sayhut town after Cyclone Chipala, 4 November 2015. NASA Earth Observatory / Joshua Stevens.  


470 Ibid
**Extreme rainfall and City Flooding**

Rainfall in the coastal and desert cities is rare, with few rainy days in a year. 2016 data show as little as 13.1- and 22-mm rainfall in Ma’rib and Aden respectively. Ibb (1003 mm), Ta’iz (419), and Sana’a (264.5 mm) had the highest total rainfall in 2016 (Table 16). The annual precipitation largely falls during the monsoon months, June - August. Despite the surge in heavy rains and flooding caused by storms, negative changes in rainfall has been recorded between 1987-2013. The greatest changes in annual rainfall was recorded in Aden and Ta’iz, with a decrease at 132.34 mm at a rate of 4.9 mm per year for Aden, and 193.49 mm with a yearly rate of 7 mm in Ta’iz. Similarly, annual frequency of wet days of more than 1 mm had decreased with as much as 17.54 days in Ta’iz.

Rainfall usually happens during short and localised deluge, often accompanied by heavy thunderstorms. Precipitation generally decreases towards the east, as the region is considered a transitional zone between the wetter western highlands and the dry Rub Al-Khali desert. Several cities are repeatedly affected by heavy rainfall resulting from persistent deep land atmosphere depressions and cyclonic storms, which in turn occasionally causes urban flash flooding. Heavy rainfall was experienced both in June 2019 and April 2020. Aden, Sana’a and Ma’rib were severely affected by flooding after the April 2020 rains, and an estimated 148,680 people were affected across 13 governorates, leaving 15 dead and 89 injured by the end of April. The floods caused severe disruption to services, and damages to housing and infrastructure, such as roads, bridges and the electricity grid, as well as contaminated water supplies. In Aden, IDP shelters for 1,812 families were damaged. From January to April, around 110,000 cases of cholera had been recorded, with a further hike of 1,812 families damaged.

**In Al Mukalla:** both urban flash flooding and sea surge coastal floods are prevalent. The coastal floods occur as a result of intensified wave action stemming from high wind speed, also caused by cyclone storms. The city is intersected by several wadi beds nearly every 1-5 km. The wadis discharge their runoff via wadi beds towards the sea when not intercepted for irrigation. When heavy rainfall falls over the upper mountainous catchment areas, the wadi beds are filled with excessive water too quick, causing the wadi beds to flood over their banks and cover nearby plains. Informal buildings that are built on the banks are susceptible to flooding. Construction and other obstructions to the natural water flows also contribute to enhance flash flooding. Urban flash flooding can occur within minutes or hours of excessive rainfall, rapidly moving through streets, open flat areas and even roofs. Also, inland cities such as Ta’iz, surrounded by and expanding up on mountain hills, are experiencing yearly heavy rainfall and flash floods similar to Al Mukalla. To mitigate this risk, the World Bank-financed Ta’iz Municipal Development and Flood Protection Project (1990-2010) with the aim of erecting flood protection structures to channel flood waters through open and closed flood structures to a catch basin south of the city. The main discharge from the floodwater run-off from Ta’iz are intercepted by Al Amirah Dam, approximately five kilometres North-West of the centre of the city. While the project has contributed to reduce risks associated with flash floods both to human life and infrastructures, the project has also illustrated some of the challenges when planning such interventions. These included insufficient consideration for the upper mountainous areas, and water carrying by torrential rains producing large amounts of sediments, stones and rocks that eventually clog storm water canals and other water installations. Furthermore, as water is led through paved canals, ground water recharge is decreased, and the city open wells are depleted. Water trenches as also used for garbage disposal.

As vulnerabilities to natural hazards and floods has increased, flood risks have intensified in Yemen cities. Unplanned urban expansion not considering rainfall absorption, has caused increases of water runoff over what would occur in natural terrain – thus posing a critical threat to natural recharge of the water table in populous and critical areas of the country. Moreover, accumulation of water in swamps and streets following heavy rainfall is often mixed with outflow of sewage and un-carried garbage. Implementation of master plans with separated draining systems for sewage and heavy rainfall is yet to be implemented.

---


473 Ibid.

474 OCHA, “Yemen : Flash Floods - Flash Update No. 3.”

Air Pollution

Air pollution in Yemeni cities originates from a number of sources, amongst others, the emissions of gases from oil consumption, manufacturing activities, power generators, construction, uncontrolled solid waste burning, and transport. Traffic pollution is exacerbated by the lack of public transport options, and a fleet of old and cheap vehicles and motorcycles, flooding in from neighbouring countries. Yemen continue to rely on leaded gasoline, banned in most countries in the world due to its significant risks to human health and environment.\textsuperscript{476} \textsuperscript{477}

The openly burned solid waste, contributes an estimated 4024 ton of CO2-eq/month worth of emissions in Aden, while 3257 ton of CO2-eq/month is emitted in Ta’iz.\textsuperscript{478} Residents living near sewage basins, locations for solid waste burning, or densely built environments with high use of electric generators and traffic in narrow streets are especially exposed to health risks associated with pollution.

Preservation of local ecosystems

Yemen is characterised by several unique ecosystems (incl. coastal, highlands and marine environments) have been under threat over the past decades, with potential severe impact on natural habitats and inter-linked ecosystems. There is a lack of data on the climate variables impact on local ecosystems and potential impact scenarios from climate change.

Coastal ecosystems

Coastal ecosystems include wetlands which support a unique marine biodiversity and host a large number of water birds and marine species such as seagrass, coral reefs, seagrasses, algae, and fish.\textsuperscript{479} More than 100 species of migratory waterfowl use these habitats for bivouac and feeding.

Wetland degradation has been observed across the country, in part because of climate change and limited water resources, but also due to repurposing of land without policies and law enforcement to protect the areas, which has led to uncontrolled construction and the establishment of illegal dumping sites. In particular the wetlands in Aden have shrunk significantly over the past years. The loss of wetlands is a concern both to the biodiversity, as well as the wetlands ability to absorb pollution and floods, as well as recharge aquifiers.\textsuperscript{480} To address this, conservation efforts have focused on the establishment of protection areas. For example, the Aden Wetlands protection initiative was officially declared in 2006 by the “Prime Minister’s decree” No. 304. In addition to protecting the habitat for migratory birds, the protection sites were important to maintaining several plant and aquatic animal species.

\textsuperscript{476} Ibid
\textsuperscript{478} Daily waste generation is estimated to 0.6 kilogram per capita times population (2017 projection used). Waste generation in Taiz is thus calculated to 10484 ton per month. Considering 75% of solid waste is openly burned, consisting 65% food waste, 10% plastics, 7% paper, 6% textile, 5% metal, 4% leather or rubber, and 1% glass (Ministry of Local Administration, 2009) and a simulation for quantification of GHG emissions (Sang-Arun, Dr. Nirmala Menikpura and Dr. Janya, 2013) the estimated emissions per month was calculated.
\textsuperscript{479} Derek A. Scott, “A Directory of Wetlands in the Middle East,” IUCN - The World Conservation Union, 1995.
In Aden, sand beaches forming large and scattered areas along the coastline, are considered to be of great ecological importance for different marine organisms. For instance, some of the beaches are nesting sites for sea turtles. The Aziz Island west of Aden is considered the main important site for nesting Hawksbill turtles along the coastline of the Gulf of Aden.

Coral reefs play an important role in Al Mukalla, as these ecosystems not only provide habitats for a wide variety of marine species, but also protect the coastline from erosion and storm damage. The volcanic headlands extending into the sea, and small rocky islands, which characterises parts of the coastal areas, are a suitable hard substrate for the corals to grow, often covering 30-100 percent of the rocky surfaces. The corals are habitats for macroalgae, which in turn create habitats for invertebrates and vertebrates of ecological and economic significance. While serving as one of the main port cities in Yemen, this local marine ecosystem also makes Al Mukalla an valuable fisheries area.

The coastal eco-systems in Yemen are also vulnerable to man-made shocks. For example, the oil storage vessel Safer, located in the Red Sea close to Al Hodeiah port, represents a major threat to the marine life, with severe economic and humanitarian consequences in the event of an oil spill. The vessel, which was operated by a government-run oil company until 2015 when Houthi rebels took control over it, has not been maintained since the start of the conflict. A recent water leakage into the engine room recently increased the risk of the vessel sinking or exploding. It has been estimated that an oil spill could take out the entire fishing industry in the Red Sea for 25 years.

Photo 15: Al Heswa wetland Protected Area.

---


Highland environments

The Ta’iz wetlands are one of the most important wetlands in Yemen and the region, regularly holding thousands of waterfowl. As one of 16 wetlands identified in Yemen, the sites are important as a representation of a rare and threatened habitat in Yemen and the Middle East. The wadis and lagoons settling (evaporations) ponds, and marshes in Ta’iz are the most extensive area of freshwater wetlands in Yemen, and as such provides staging and wintering area for migratory waterfowl, and also support resident breeding populations of several species. Furthermore, they are included in the most important bird areas in the Middle East as one of the 34 sites in Yemen (excluding Socotra Island).

<table>
<thead>
<tr>
<th>Land cover type</th>
<th>2019 sq.km</th>
<th>1984 sq.km</th>
<th>Land cover change sq.km</th>
<th>rate of change /year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Barren Lands</td>
<td>585.52</td>
<td>588.18</td>
<td>-2.66</td>
<td>-0.08</td>
</tr>
<tr>
<td>Build Up</td>
<td>88.35</td>
<td>20.84</td>
<td>67.50</td>
<td>1.93</td>
</tr>
<tr>
<td>Green area</td>
<td>37.19</td>
<td>42.45</td>
<td>-5.26</td>
<td>-0.15</td>
</tr>
<tr>
<td>Wetlands</td>
<td>22.79</td>
<td>53.63</td>
<td>-30.84</td>
<td>-0.88</td>
</tr>
</tbody>
</table>

Table 18 Land cover change in Aden in 1984 and 2018

<table>
<thead>
<tr>
<th>Land cover type</th>
<th>2019 sq.km</th>
<th>1984 sq.km</th>
<th>Land cover change sq.km</th>
<th>rate of change /year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Build Up</td>
<td>10.98</td>
<td>8.58</td>
<td>4.40</td>
<td>0.12</td>
</tr>
<tr>
<td>Green area</td>
<td>5.29</td>
<td>16.10</td>
<td>-10.82</td>
<td>-0.30</td>
</tr>
<tr>
<td>Barren Lands</td>
<td>26.70</td>
<td>19.69</td>
<td>7.01</td>
<td>0.19</td>
</tr>
</tbody>
</table>

Table 19 Ta’iz land cover change

Urban green areas

The green lunges in urban areas have decreased significantly over the past decades. In Aden in 1984 the city had some 42.45 sq.km of green areas, a figure that decreased to 27.09 sq.km by 2019, at rate of 1.20 sq.km /year (Table 18). During the same time interval, the wetlands also saw a significant decrease, from 1984 wetlands in the city decreased by 30.84 sq.km at a rate of 0.88 sq.km pro year. Most affected districts of Aden were Al Buraqiya and KhurMaksar. During the same time interval the city saw a remarkable increase of build-up areas, in 1984 the built-up areas only covered some 2.96 percent of Aden area. Until 2019 some 67.51 sq. km were added of built up area, giving a land cover change value of 323.92 percent of buildup area change, with rate of increase of 1.93 sq.km /year (Figure 55).

Green areas in Ta’iz has similarly decreased significantly over the past decades (Table 19), reflecting a negative adaptation capacity to climate change. In 1984 the green cover stood at 38 percent of the Ta’iz area, which has been reduced to 12.3 percent with annual decline rate of 0.3 sq.km. If this rate of green area loss is not stabilised or mitigated, green areas in Ta’iz will disappear within the next two decades (Figure 48).

The reduction of green areas in the cities both reduces the cities absorption capacity of air pollution and increased temperatures, as well as reduces areas for the infiltration of excess rainwater.

487 Ibid
488 Urban environment and land cover change by the University of Aden. Three land cover types have been examined using satellite imaginary and GIS, including i) Urban Built-Up area, ii) Green area (vegetation and agriculture), and iii) Barren land . Land cover changes is mapped between 1984 and 2019.

Introduction of invasive species

In several cities, such as Al Houtah and Zinjibar, the mesquite tree has become a growing challenge. The tree was introduced in Yemen in 1924 to protect the cities from the encroachment of sand dunes. The plant is however competitive, and rapidly spread covering large fertile and agricultural areas, growing under hard environmental conditions. Its intractability arises from its ability to capture more water in the soil than most other plants. Animals feeding on pods and dispersing the seeds is further contributing to the plants’ spread. Mesquite has overwhelmed vast spaces of agricultural land, causing the destruction of agricultural crops. In the wadis, the spread of the trees blocks flood waters, impeding the natural water courses, as well as disturbing irrigation systems. The mesquites spread in urban areas provides an attractive environment for reptiles such as snakes and rodents.

While the invasion of these trees have caused severe environmental problems they have also offered an economic source for local inhabitants, as it is used for a range of purposes such as fuel wood, charcoal, timber, fodder, food, and income. Yet, despite the economic significance and the trees positive effects on green land cover reducing extreme temperature and food for animals, the trees negative effects on the ground water and soil resources and consequently on sparse natural vegetation and agriculture production is critical.
Cultural Heritage

Yemen's rich cultural heritage, threatened by damage and destruction from the conflict as well as environmental stressors, is central to the architectural expressions and socio-cultural fabric of Yemeni cities.

Yemen has four sites on the United Nations Educational, Scientific and Cultural Organisation (UNESCO)'s world heritage list. Three of these sites are cities, underscoring Yemen's contribution to architecture, urban planning, and the sites historic and religious significance. Although the population is predominantly rural, there is a strong tradition of city-making in Yemen.

The ongoing conflict has exacerbated the threat to Yemen's rich and diverse cultural heritage, intensifying damage to cultural heritage sites and losses of assets, and contributing to the fragmentation of its socio-cultural fabric. Multiple factors are contributing to this. These include active combat and terrorist attacks which, intentionally or circumstantially, target sites and symbols of history, identity and religion; environmental factors such as flooding and cyclones; rapid urbanization encroaching on sites; fragmented and weakened governance; limited financial funds for restoration and maintenance; squatting on cultural sites; and looting.

Projects such as 'Cash for Work: Promoting Livelihood Opportunities for Urban Youth in Yemen' by UNESCO demonstrates that cultural heritage can be protected, and the social fabric strengthened, based on a shared cultural identity. This is an integral part of rebuilding the country, and over time, encourages increased tourism to strengthen its economy.

A cultural heritage under threat

Armed conflicts have always had a devastating effect on culture including the intentional destruction of people's collective memories and the tarnishing of symbols representing their cultural identities. In recent decades, culture has been increasingly targeted as a means of erasing people's ties to their communities, cities, and nations.

UNESCO and World Bank, 2018

Yemen is an ancient center of civilization. The country encompasses several ancient cities with unique architectural features, as well as distinctive landscapes, desert, and coastline. The country's cultural heritage, both its physical and social structures, is however threatened by conflict and poor governance, including severe damages and lack of maintenance to buildings and structures, and major social disruption. Further, rapid and unplanned growth of urban areas, fueled by migration and displacement, pose a threat to cultural heritage sites. Informal settlements and private construction are often close to, and even within, these sites. For the Old city of Sana'a, for example, urban expansion and development, including the appearance of new hotels.

Photo 12 Sanaa Old City (UN-Habitat 2020).


For a more detailed discussion of social cohesion and how the ongoing conflict is impacting social groups and their shared identity, see the Social Cohesion and Protection chapter.
and telecommunication towers, is eroding the cultural identity by fragmenting the city’s coherent and unified architectural expression.\textsuperscript{493} As a response to this situation, the World Heritage Committee has “recommended that an adequate buffer zone should be established around the old city".\textsuperscript{494}

The threat to the cultural heritage buildings, structures and social structures was present also before the conflict. Even then, only one percent of the government’s budget was allocated for cultural projects\textsuperscript{495}, and several of the renovation and restoration projects were carried out with the use of inappropriate materials or a lack of resources to adequately renovate or restore the structures.

Its cultural heritage sites include, but are not limited to, four UNESCO sites, of which the three cities on the list are on the World Heritage in danger list (see the last sub-chapter on UNESCO heritage sites). Representing one of the UNESCO sites, Sana’a is the city which has been inhabited the longest, dating back 2,500 years. While life in the mountains favoured a more secluded development, trade routes and especially the seaport kept the country in contact, and influenced the development of the cities through exchange, with other people and cultures.

**Damage to cultural heritage sites**

Since 2015, cultural heritage sites have come under repeated attack by warring factions. The intensity of the conflict, weakening of national institutions, fragmentation of political authority, and declining financial support has shifted attention away from conservation of national and cultural heritage to the more pressing humanitarian needs. In addition to the damages inflicted by airstrikes, factors such as long-term neglect, environmental impact and lack of maintenance exacerbate damage to heritage sites.

The conflict has severely, though unevenly, impacted heritage sites in the country. Despite the special protection afforded to these sites due to their educational, cultural, and religious significance under international humanitarian law, many have been damaged or destroyed. Yemen’s General Organization for Antiquities and Museums (GOAM) has identified 66 archaeological sites and monuments damaged by the conflict.\textsuperscript{496} There were also 35 religious sites which had been damaged or destroyed in attacks by terrorist groups such as Al-Qa’ida and Daesh.

---


\textsuperscript{494} Ibid.


\textsuperscript{498} Ibid.
<table>
<thead>
<tr>
<th>City</th>
<th>Description of cultural heritage</th>
<th>Damage to cultural heritage</th>
<th>Map with cultural heritage sites</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ta‘iz</td>
<td>Ta‘iz has a rich cultural heritage, and is known for its famous mosques, domes, castles and museums, including the national museum. In 2018, as a response to the bombing of a 16th century mosque, adding to multiple other attacks including the shelling of the National Museum in 2016, the World Monuments Fund (WMF) placed the city on the watch list for protection of heritage.</td>
<td>The KI survey carried out in March 2020 demonstrates the damage inflicted upon the cultural heritage in Ta‘iz. In the three districts of the city, only 26 cultural and historical sites are currently functioning, whereas 36 sites and 56 records and manuscripts are reportedly either unusable or damaged, while 47 are partially functioning. Al Mudhaffar has been particularly affected by random demolition of cultural sites and vandalization of religious sites. Moreover, many of the historical buildings have been seized by armed groups, looted or bombed.</td>
<td></td>
</tr>
<tr>
<td>Sa‘ada</td>
<td>Sa‘ada is amongst the oldest medieval cities in Yemen, with historical, architectural, and spiritual importance. The city, founded by Imam Al-Hadi Yaya in the 9th century, became the cradle of the “Zaydism” school of Muslim thought in Yemen. The city is surrounded by the Zabur wall, 3,000 m long and 4 m wide, with 52 watchtowers and 16 doors. Inside, the houses and palaces are built of earth and brick on several floors, with open decorated courtyards. Sa‘ada has 14 mosques dating back to the 10th to the 18th century including the Great Mosque where the eleven successors of the first Zaydite Imam are buried as well as the An-Nisari Mosque.</td>
<td>More than 80 historical sites and monuments have been destroyed in airstrikes and other attacks, according to Nabil Monassar, the vice director of the General Organization for the Preservation of the Historic Cities of Yemen. However, this number counts Sana‘a’s and Sa‘ada’s old city as one site. If we instead considered individual historic buildings in both Sana‘a and Sa‘ada, the number is considerably higher. In Sa‘ada, satellite imagery shows over 210 distinct impact locations in built-up areas of the city, damaging or destroying hundreds of buildings. On 9 May 2015, airstrikes severely damaged a third of the Mosque's property. Saudi Arabia later confirmed that the building had been targeted because it had become a shelter for the Houthis. Repeated ground-shaking strikes, just a few meters from the walls surrounding the structure, have damaged its ceilings and the mosque is now closed.</td>
<td></td>
</tr>
</tbody>
</table>

---


<table>
<thead>
<tr>
<th>City</th>
<th>Description</th>
<th>Challenges</th>
</tr>
</thead>
<tbody>
<tr>
<td>Al Hawtah</td>
<td>Al Hawtah has nine heritage sites, over 23 mosques and 30 ancient water wells. The city is renowned for its shrines, most notably for the Shrine of Al Salih Muzahim Jafar.</td>
<td>According to the KI Survey conducted in March 2020, eight out of the nine main cultural sites in the city are either partly functional or non-functional. The Ministry of Culture and Al Hawtah District Government are the main entities responsible for any renovation of historical landmarks. Several challenges are obstructing the rehabilitation of these monuments, but the main obstacle is insufficient funding.</td>
</tr>
<tr>
<td>Zinjibar</td>
<td>Zinjibar is home to the Zinjibar National Museum, as well as a number of mosques.</td>
<td>According to the KI survey conducted March 2020, only one of six cultural heritage sites is currently functioning, while the remaining five are not functioning. The National Museum in Zinjibar was looted in 2012, loosing most of its collection, and has since, like the Hal Al-Wahda Theatre in Zinjibar, been used as shelter by displaced people.</td>
</tr>
<tr>
<td>Sana'a</td>
<td>Sana'a's holds a unique historic, religious, and political significance. The city was a major center for propagation of Islam in the 7th and 8th centuries. Old Sana'a, or Madinat Sana'a Al-Qadimah has an unique urban heritage characterized by its architectural coherence and historical uniqueness, which earned it status as a UNESCO World Heritage Site in 1984.</td>
<td>Sana'a has been an embattled city since the escalation of the conflict in early 2015. It has witnessed three major battles, in 2011, 2014, and 2015, and has furthermore intermittently been hit by airstrikes and other attacks which have resulted in considerable damage to edifices and cultural sites. For example, an airstrike conducted in June 2015 destroyed and damaged of many houses and historic buildings in the center of Old Sana'a. Another June 2015 airstrike destroyed an additional number of buildings just outside the city walls including the Ottoman era Al-Owrdhi historical compound. UNESCO recently conducted an assessment within five zones in the old city of Sana'a of 2,540 heritage buildings, of which more than three-quarters have been severely damaged.</td>
</tr>
</tbody>
</table>

---

504  KII, March 2020
506  UNESCO World Heritage Centre, “Old City of Sana’a.”
Aden’s long history of cultural, political, and economic exchanges is reflected in its cultural heritage. Aden was the first city in the Arabian Peninsula to establish a museum in the 1830s. Khur Maksar, a three km long wall, was 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.

Aden is known for the Cisterns of Tawila, also called the Tawlia Tanks, located in the Wadi Tawila southwest of the city. The city is also home to a number old fortresses such as Al-Nuba, Al-Garve, and Al Qufl.

According to UNESCO field surveys, over 95 percent of heritage sites in the city have sustained significant damages from conflict-related causes. Structures that have been either completely or partially destroyed include many old school buildings as well as old houses with a distinctive architectural identity in the Old City. Moreover, environmental factors, including soil salination, temperature rise, humidity and monsoons, have led to significant deterioration of many historical buildings and monuments.

UNESCO has assessed several heritage sites to understand how the conflict has affected the buildings. The survey covered 45 sites in Aden, among which 43 (96 percent) were affected. Of these, 42 percent have major damage and 2 percent have completely collapsed. The remaining 21 percent have moderate damage and 35 percent 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 percent are religious buildings, and the rest are public service buildings. About 25 percent of the sites require intervention in the form of consolidation, another 25 percent require protection in the form of temporary roofing, 15 percent require maintenance, 35 percent total or partial demolition due to the level of damage, and one building requires full reconstruction.

The infrastructure in Old Aden has also been 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.

Jibla town, which is on the UNESCO World Heritage Tentative List, is located only 8 kilometres from Ibb, representing an important heritage site for the area.

Al Mukalla

Ma’rib city is located a few miles from the ancient Ma’rib city, gated by the Great Dam of Ma’rib known to be one of the most significant engineering marvels of the ancient world. Excavations of the ancient cities have uncovered several important relics, including two pre-Islamic temple precincts.

Ma’rib hosts several important cultural sites, including temples, and the Wadi Ghufaina settlement.

The ancient city of Ma’rib, including the Great Dam of Ma’rib was victim of airstrikes in 2015.509

---

Looting of antiques and cultural assets

Cultural assets are particularly at risk in times of conflict, poverty, and fragility. As such, looting is a significant threat to Yemen’s cultural heritage. In Yemen, gangs and militias finance criminal or military activities or arms purchases by smuggling antiques or other museum exhibits, as well as undertaking illegal excavations.510

At the start of the war, there were 27 public museums in Yemen. These national museums, including in Aden, Dhahar, Ta‘iz, and Zinjibar, as well as provincial authorities in Sana’a, had extensive records. A dozen national museums have been damaged or destroyed both before and during the armed conflict, or simply suffered from negligence. Along with their collections, many of the records have been looted or destroyed.511 Other antiques and priceless collections have been stolen or clandestinely excavated, or illicit exported abroad. The National Museum of Zinjibar too has been pillaged and largely cleared of its collections.512

According to Live Science’s investigation, at least 100 artifacts from Yemen have been successfully sold at auctions for an estimated $1 million in the U.S., Europe and the United Arab Emirates since 2011.513 Moreover, Live Science report that since 2015 there has been a surge in shipments of artifacts, antiques and art sent from Saudi Arabia to the US. Between January 2015 and December 2018 alone, about $5,940,786 worth of these smuggled items were supposedly sent, compared with an estimated value of $3,703,416 during the 19-year period between January 1996 and December 2014.514

Current usage of heritage buildings

Some of the heritage buildings have been taken over for different purposes, some in the name of the public. In Al Hawtah, for example, the majority of the historical buildings have been converted to government and military facilities, a process that started in 1967. Further, some rooms in the Dar Al-Hajar Palace in Al Hawtah have been converted into offices of the Democratic People’s Republic of Yemen News Agency on the ground floor. This was in turn transformed after 1990 to the Yemeni news agency “Saba”. The second floor was converted to the headquarters of the local people’s radio (Lahj Local Radio), and recently, the Yemeni Writers Union set up their headquarters on the same floor. The presence of the Yemeni Writers Union, a group of local intellectuals played a part in preserving the overall integrity of the building.515 Many others have been occupied by IPDs, who come to the cities but do not have any alternative places in where they can stay.

Environmental degradation

Several of the cities and cultural sites are heavily impacted by environmental factors, such as flooding and heavy rain. This constitutes a threat for several historic sites and cultural heritage buildings. In Sana’a and Al Hawtah for example, heavy rains have caused flooding, which has further eroded the buildings’ foundations. As a result, several buildings have collapsed. UNESCO has pledged nearly $70,000 to the restoration of buildings as a result of the rainy season, which will cover the restoration of 40 homes.516

Management and maintenance

Two main institutions responsible for the cultural heritage in Yemen, under the Ministry of Culture, are: The General Organization for the Preservation of Historic Cities in Yemen and the General Organisation for Antiquities and Museums (GOAM). As such, the Ministry of Culture is tasked with and ultimately responsible for the protection, conservation, and monitoring of archaeological, historic and other cultural sites.517

The General Organization for the Preservation of Historic Cities in Yemen (GOPHCY) prepared a draft “National Strategy for the Preservation of Historic Cities, Sites and Monuments 2016-2020” to address gaps in cultural heritage preservation, however due to the situation in Yemen it was not possible to progress with the draft nor to develop and implement an Action Plan.518


514 Ibid.


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. Yet, in addition to the damage inflicted by the conflict and environmental stresses, poor management and lack of maintenance of heritage sites is having a devastating impact on cultural heritage. Loss of documents, archival records, electronic databases, and lack of specialized equipment and knowhow necessary for conservation of projects pose clear threats to the preservation of cultural heritage. This also pertains to the protection of some of the most central properties in urban areas with the highest potential land value post-conflict (also see the Housing, Land and Property chapter).

In October 2019, UNESCO opened a project office in Sana’a under the ‘Cash for Work’ project, where UNESCO is following up project activities including physical rehabilitation, capacity building of cultural heritage stakeholders, technical assistance for design of urban rehabilitation plans support to cultural programming and services in Aden, Sana’a, Zabid and Shibam. As part of this, the project trains and employs urban youth to safeguard historical sites, with the objectives to give young people an income generating opportunity, learn new skills, while at the same time strengthening social structures based on a shared cultural heritage.

UNESCO heritage sites
Yemen is home to four UNESCO world heritage sites:

- Historic Town of Zabid
- Old City of Sana’a
- Old Walled City of Shibam
- Natural heritage of Sacotra Archipelago

Of these, only the Sacotra Archipelago is not on UNESCO’s list of World Heritage in danger.

In addition, in 2002 ten additional sites were placed on a tentative list considered for nomination as future UNESCO World Heritage. These include:

- Archaeological site of Ma’rib (08/07/2002)
- Balhaf/Burum coastal area (08/07/2002)
- Historic city of Saada (08/07/2002)
- Jabal Bura (08/07/2002)
- Jabal Haraz (08/07/2002)
- Jibla and its surroundings (08/07/2002)
- Sharma/Jethmun coastal area (08/07/2002)
- The Hawf Area (08/07/2002)
- The Historic City of Thula (08/07/2002)
- The Madrasa Amiriya of Rada (08/07/2002)

The cultural heritage of Yemeni cities – the example of Sana’a

Sana’a’s historic buildings are a testament to its historic, religious, and political significance, particularly as a result of being a major center for propagation of Islam in the 7th and 8th centuries. Old Sana’a, or Madinat Sana’a Al-Qadimah has an unique urban heritage characterized by its architectural coherence and historical uniqueness, which earned it status as a UNESCO World Heritage Site in 1984. Surrounded by medieval clay walls about 9-14 meters tall, Madinat Sana’a Al-Qadimah contains more than 100 mosques, 14 baths (hammams), and over 6,000 houses, all built before the 11th century. The architectural styles used reflect the cultural composition of its historical inhabitants: Yemeni, Ottoman, and Jewish.

Both public and private edifices in the city are constructed using either baked and rammed mud bricks or stone. Rammed mud bricks and stone are ubiquitous in Yemen and are characterized by their resistance to moisture and climate change, as well as an ability to expand or contract during construction. Waterproofed using lime plaster, the materials have considerable longevity and permanence, however the buildings still require regular maintenance, preservation and protection.

The houses in Madinat Sana’a Al-Qadimah are built vertically as towers and are typically occupied by a single family. The buildings height changes depending on ownership. Former Jewish houses for instance are no taller than three-stories high; followed by four-stories Ottoman houses, and six-stories Yemeni houses. Some of the houses stand on naturally occurring outcrops at heights that gives the impression of medieval skyscrapers. The buildings are beautifully decorated in symmetrical geometric patterns with stained-glass windows and elaborate friezes.

Sana’a has several buildings of great historical significance. Local lore, confirmed by archeological findings and surviving scriptures, traces the Great Mosque of Sana’a (Al-Jami al-Kabir bi Sana’a) back to the early Islamic period, during the life of the prophet Muhammad. The mosque has gone through several renovations, blending Christian Byzantine and Ethiopian Axumite features over time. It remained the largest in the city until the construction of the Al Saleh Mosque, finished in 2008, which can accommodate up to 44,000 worshippers. Moreover, Ghamdan Palace is an ancient palace and fortress in Sana’a, reputed to be the oldest castle in the world and believed to date back to 200 AD. Although much of the original structure is now ruins, the palace is said to have been originally seven stories high (others speak of up to 20 stories) and built on top of a hill. The structure served as a prototype for most other edifices of Sana’a.

---


523 UNESCO World Heritage Centre, “Old City of Sana’a.”

Historic Town of Zabid

The historic Town of Zabid, in Al Hodeidah governorate, is located near the road linking the port of Al Hodeidah with Ta’iz, and on the former Aden-Mecca route from India. Its domestic and military architecture and its urban plan earned it status as a World Heritage site in 1993. The city was the capital of Yemen from the 13th to the 15th century. Further, due to its Islamic university, the city has played an important role in spreading Islam. The city also has the highest concentration of mosques in Yemen, 86 in total. According to UNESECO, the rapid and unplanned urbanisation, with building of concrete buildings, installation of an electrical system using overhead cables, and general encroachment on the old structures, has rendered 40 percent of the structures vulnerable.

Old Walled City of Shibam

The City of Shibam (Hadramaut Governorate) is located on the old caravan route of incense trade. The city, from the 16th century, is one of the oldest and best examples of urban planning based on the principle of vertical construction, earning it status as a World Heritage Site in 1982 as the first site in Yemen inscribed to the UNESCO list. Its impressive tower-like structures are constructed using sun-dried mud brick. To maintain the buildings and protect it against rain and erosions, fresh layers of mud is routinely applied to the walls.

References:


in the traditional way, as the only place in the region. The 500 buildings rise out of the cliff edge of Wadi Hadramaut, several hundred meters above the wadi bed, and are surrounded by a fortified wall. The city succeeded older settlements, with the first dating back to pre-Islamic times. The previous settlement was destroyed by a massive flood in 1532-33. Several factors have contributed to the decline of Shibam, including overloading the traditional sanitary systems and changes in livestock management. While the built structures are largely undamaged and in generally good condition, the risk of flooding is the greatest threat to the city. New development and construction is only indirectly and to a lesser degree a threat.

Sacotra Archipelago

The Sacotra Archipelago is 250 km long and comprises four islands and two rocky islets which appear as a prolongation of the Horn of Africa. The Socotra Archipelago was inscribed as a World Heritage Site in 2008, due to its ‘universal importance based on a biodiversity with rich and distinct flora and fauna: 37 percent of Socotra’s 825 plant species, 90 percent of its reptile species and 95 percent of its land snail species do not occur anywhere else in the world’. The site also supports globally significant populations of land and sea birds, including a number of threatened species. The marine life of Socotra is also diverse, with 253 species of reef-building corals, 730 species of coastal fish and 300 species of crab, lobster, and shrimp.

The population of Socotra is estimated around 60,000, with about 25 percent living in Hadibo. While urbanisation can represent progress and development, it is also a threat to the island if not properly managed. This is also the case for tourism, which made up around 3000 visitors in 2013. Further, unsustainable fishing export, introduction of non-native spices and climate change, including increase number and strengths of cyclones, are additional threats to the Archipelago.

Photo 16 Hill town in Yemen (Charles Fred)
Damage to buildings and infrastructure is one of the most discernible features of the ongoing conflict in Yemen. Most of the analysed cities have endured extensive damage, with a significant number of structures affected by varying degrees of damage. As described in the Methodology chapter, the damage assessment on the built environment uses remote sensing conducted by the European Commission’s Joint Research Centre (JRC), which is further compared with secondary sources. The prevalent lack of granular urban data is particularly the case when it comes to up to date data on damaged structures. The data analysed here is not sufficient to provide a full picture of the damages in each city, yet indicates some key trends that needs further analysis and on the ground verification.

Figure 57 shows estimated damage in seven cities, based on remote sensing data from 2018-2019. Remote sensing data suggests that Al Hodeidah has experienced the by far the highest amount of damage, with 4,518 damaged structures (accounting for almost 40 percent of total destruction across the seven cities for which data is available), followed by Sana’a (1,844 damaged structures) and Aden (1,693 damaged structures). The amount of damaged structures observable on the ground is likely significantly higher in all analysed cities (see Methodology), with the highest variances attributable to lightly damaged buildings and apartment units that cannot be counted through satellite imagery.
Table 19 shows a comparison of remote sensing data and estimations surveys from government actors on the ground based on field surveys, which suggests that even though in the range of destroyed to moderate damaged buildings, satellite imagery is fairly accurate, for lightly damaged buildings the amount of damaged structures can be up to 10 times higher.

**Impact on Cities**

Contested cities which host conflict frontlines are among the most affected cities. For example, in Al Hodeidah, remote sensing analysis suggests that there is particularly harsh destruction in informal development areas in the north of the city, right on the frontlines. Furthermore, residential areas and critical infrastructure such as port facilities have been hit throughout the city: Al Hodeidah recorded the second highest number of shelling events nationwide, and had relatively high numbers of airstrikes at the beginning of the conflict. 534

Figure 55 and Table 22 shows the Civilian Impact Monitoring Project (CIMP) data on all incidents of armed violence reported to have inflicted casualties or injuries on civilians in the ten selected cities for the time interval 2018-2020. Tracking these incidents, CIMP has recorded the type of structural damages each type of incident has caused (See Social Cohesion & Protection chapter for more details on the civilian impact based on this data). According to this data, Al Hodeidah has been the most affected, accounting for 54 percent of all damaged structures within the data set. Notably, of the structural damages from incidents that have caused civilian casualties in Al Hodeidah according to the CIMP data, almost 50 percent of incidents have impacted civilian houses (total of 248 houses). While this data does not cover the same extent of overall structural damages, such as the remote sensing data, it shows that the number of residential houses damaged from the conflict is high, leading to significant loss and injuries to civilians.

Ta‘iz, another city on the frontline, has recorded the highest number of shelling and armed clashes since the escalation of the conflict and received the third highest number of airstrikes nationwide. The city has also seen widespread destruction in residential areas and wide scale infrastructure damage, 535 with the Ministry of Planning and Cooperation estimating that over 47,000 housing units have been damaged. (see Table 19)

Cities in the north that are not directly on frontlines, continue to suffer damages from airstrikes. Notably, Sana‘a has received the third highest number of airstrikes in Yemen (173 out of 1376) 535 and in Sana‘a governorate airstrikes have been the deadliest type of armed violence. 536 However, for the most part, damages in Sana‘a city appear to have been clustered or targeted specific sites including the airport, Presidential Palace area, military camps, and residences of senior officials, and a few airstrikes have hit the old City of Sana‘a. In terms of impact on civilians, in Sana‘a city most incidents have impacted transport infrastructure (10 out of 35 incidents).

Sa‘dah city too continues to be targeted by airstrikes. The governorate accounts for the highest number of incidents impacting civilian structures during the first quarter of 2019, including 735 civilian houses. 537 In 2019 Sa‘dah received the highest number of airstrikes in Yemen in 2019 (504 out of 1,376), 538 in addition to the third highest number of shelling and armed clashes. While the country has seen an overall reduction in the number of airstrikes 2015, airstrikes in Sa‘dah have doubled over the same period. Remote sensing data suggests that the damages are localized and clustered in the city centre. For the most part, airstrikes target the airport, military camps, the residences of senior officials and a few markets. Furthermore, the World Bank’s Dynamic Needs Assessment (DNA) 539 reports Sa‘dah to be the city which had experienced the highest proportion of damage to physical assets, with 55 percent of facilities affected.

<table>
<thead>
<tr>
<th>City</th>
<th>Remote sensing</th>
<th>Gov. estimations excl. apartment units and light damage</th>
<th>... incl. light damage</th>
<th>.. incl. apartment units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aden</td>
<td>1,693</td>
<td>1,551</td>
<td>11,152</td>
<td>11,152</td>
</tr>
<tr>
<td>Ta‘iz</td>
<td>1,203</td>
<td>3,197</td>
<td>11,380</td>
<td>47,455</td>
</tr>
<tr>
<td>Grand Total</td>
<td>2,896</td>
<td>4,748</td>
<td>22,512</td>
<td>58,807</td>
</tr>
</tbody>
</table>


---

534 JRC remote sensing, 2018.  
Another significant effect of the ongoing damages to structures is damage to the housing stock, leading to displacement not only between but also within cities - which is usually not captured in displacement data, and can lead to population imbalances across within cities. Aden, for example, continues to be the location of fighting between several factions fighting for control over the city, directly affecting civilians. According to CIMP data, Aden three civilian gatherings have been hit since 2018. Moreover, Aden has the highest number of incidents with no damage to structures. These conflict events do not affect the city evenly: for example, while Aden’s Khur Maksar district has been one of the most severely affected district in the city due its strategic location next to the airport, in Al Mansura district, clashes were concentrated in the south-western areas while the rest of the district remained relatively safe, and as a result acted as a hosting area IDPs from other districts which had experienced widespread armed clashes such as Khur Maksar, Al Mualla, Attawahi and Craiter.

The World Bank’s DNA suggests that the housing sector was the most severely damaged across the 16 cities assessed compared to 2015 baseline data. The Bank estimates that about one third of all housing units within their analysis scope have been damaged, of which 1 percent was completely destroyed.

Table 21 Damages to structures against the civilian incidents between 2018-2020.

<table>
<thead>
<tr>
<th>Type of structure</th>
<th>Damage in numbers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Civilian first responders</td>
<td>1</td>
</tr>
<tr>
<td>Civilian gatherings</td>
<td>9</td>
</tr>
<tr>
<td>Civilian houses</td>
<td>383</td>
</tr>
<tr>
<td>Civilian vehicles</td>
<td>29</td>
</tr>
<tr>
<td>Farms</td>
<td>16</td>
</tr>
<tr>
<td>Houses &amp; farms</td>
<td>10</td>
</tr>
<tr>
<td>IDP settlement</td>
<td>3</td>
</tr>
<tr>
<td>Infrastructure (aid)</td>
<td>6</td>
</tr>
<tr>
<td>Infrastructure (education)</td>
<td>28</td>
</tr>
<tr>
<td>Infrastructure (electricity)</td>
<td>4</td>
</tr>
<tr>
<td>Infrastructure (first responders)</td>
<td>2</td>
</tr>
<tr>
<td>Infrastructure (food)</td>
<td>13</td>
</tr>
<tr>
<td>Infrastructure (fuel)</td>
<td>10</td>
</tr>
<tr>
<td>Infrastructure (gov compounds)</td>
<td>17</td>
</tr>
<tr>
<td>Infrastructure (health)</td>
<td>27</td>
</tr>
<tr>
<td>Infrastructure (media)</td>
<td>1</td>
</tr>
<tr>
<td>Infrastructure (protected site)</td>
<td>15</td>
</tr>
<tr>
<td>Infrastructure (recreation)</td>
<td>2</td>
</tr>
<tr>
<td>Infrastructure (telecommunication)</td>
<td>4</td>
</tr>
<tr>
<td>Infrastructure (transport)</td>
<td>35</td>
</tr>
<tr>
<td>Infrastructure (water)</td>
<td>7</td>
</tr>
<tr>
<td>Local businesses</td>
<td>130</td>
</tr>
<tr>
<td>Market</td>
<td>16</td>
</tr>
<tr>
<td>No structure</td>
<td>228</td>
</tr>
<tr>
<td>(blank)</td>
<td></td>
</tr>
<tr>
<td>Grand Total</td>
<td>996</td>
</tr>
</tbody>
</table>

State of Yemeni Cities

Nightlight change

Across Yemen, 55 percent of the power sector infrastructure sustained some degree of damage, while 8 percent is completely destroyed. Electricity losses are high, with 45 percent of electricity lost already in 2014, reportedly due to a lack of maintenance, public investment, as well as illegal connections (see the Energy sub-chapter in Basic and Social Services).

Frequent disruptions in services are common owing to both the lack of diesel and the inflated prices when fuel is available for diesel-powered plants. The serious damage to infrastructure coupled with limited reconstruction funding has left Yemeni cities in dire need of energy solutions.

Nightlight output has in a few non-conflict countries shown to have a correlation to a cities gross domestic product, and is suggested here as a way to give some indication of the level economic recovery, mindful that the values need to be contextualized.

More directly, a reduction nightlight has security implications, making cities less safe to navigate to for women, while hindering commercial activities after daylight hours.

Figure 61 shows the nightlight emitted for seven cities in Yemen from 2013 to 2020. Pre-conflict, the total nightlight output (“Sum of Lights”) in Sana’a and Aden was much higher than other cities, even though they did not reach the highest nightlight per capita (Figure 64). Following the outbreak of the conflict in February 2015 all cities saw dramatic drops in nightlight output. Areas such as ports and seafronts, industrial area and markets, universities, and airport have been targeted in cities; areas which were likely to have the greatest nightlight activity before the conflict.

While coastal cities such as Aden and Zinjibar recovered to 75 percent of pre-conflict levels, cities such as Sana’a has seen much slower recovery, exacerbated by government decisions to keep off the lights in some areas and an ongoing transition to solar-powered lights. Furthermore, Aden has displayed the highest nightlight values throughout the conflict, despite the 50 percent drop in nightlight activity in 2015.

As shown in Figure 63, Ma’rib is the only city to have seen a positive increase in nightlight levels, increasing by 242 percent. This could partially be explained by increased economic activity as well as substantial population growth and expansion of the city. Al Hodeidah and Ta’iz both had relatively low nightlight per capita prior to the conflict and are two of the cities that have endured the greatest damages as frontline cities. This is evident in the continuous lack of electricity, where particularly Ta’iz remains without access to the public grid and lacks generators (and fuel). PNGK’s data of nightlight change in Ta’iz shows that the few lights that illuminate some streets are switched off after 23:00 local time (20:00 GMT) to save fuel rations for the following day.

Several assets of electricity infrastructure in Al Hodeidah were reportedly attacked during the conflict. This includes airstrikes in Al Hali and Al Hawak districts in December 2015, which reportedly targeted the Public General Electricity storage units, setting it on fire, and airstrikes in February 2017 in Al Hawak district, which hit water and electricity infrastructure. More recently, in November 2018, reports indicate that Houthis burnt electrical equipment of the General Electricity Corporation worth millions of YER, after losing control of it.
State of Yemeni Cities

Figure 55 Nightlight change Ta’iz

Figure 56 Nightlight values selected cities 2013-2019.
State of Yemeni Cities

Figure 57 Night light per capita pre-conflict (2013). * Taiz and Zinjibar population data from 2014.

Figure 58 Percentage change in nightlight 2014-2019. A positive value means more light compared to pre-conflict levels. -100 percent means that the city is producing no light at all.
Recommendations for Urban Recovery

Introduction

Cities in Yemen have been severely affected by the conflict that has ravaged the country since 2015, which has significantly exacerbated pre-conflict stressors and vulnerabilities. As described in the forgoing chapters, the various sectors and systems are each impacted by the conflict, population growth, uncontrolled urbanisation, lack of policies and enforcement of regulations, as well as shocks caused by recurring natural and man-made disasters. While this report offers sectoral overview of challenges faced by the cities, these challenges are highly interconnected and reinforce each other.

The accumulation of shocks on the country’s inhabitants, its systems, and ecosystems are combined rendering Yemen the world’s largest humanitarian crisis, and in a state where there are no simple pathways for recovery. However, Yemen has a unique heritage, culture, and traditions, and exhibit a strength and resilience of its people in the face of these combined shocks, illustrating some of the resources to be built upon for setting a transformative course forward.

Through the sectoral chapters the access and functionality of services, the urban economy and markets, people’s access to their legal rights and protection, social cohesion, and capacities and resources with the local governments in planning and executing policies have been studied and exemplified in the analysis of the current state of ten selected cities. As described in the methodology, these cities were selected for their importance and unique dimensions to both provide an overarching picture of urban challenges in Yemen and describe how various challenges affect Yemeni cities differently, as well as highlighting discrete and common opportunities present in the studied cities. Some of the key challenges identified, which will have to be addressed in order to work towards Sustainable Cities and Communities (SDG11), are also some of the root causes to the conflict – such as land issues. While those issues need attention in national policies and strategies, solutions will also require localised recovery respective of the specificities of each city context in order to move towards conflict resolution and peacebuilding. This will be crucial to mitigate the rise of (new) tensions within the urban space over resources and services, and support strengthening of productive sectors and employment opportunities.

Responding to the impact of current shocks while at the same time laying the building blocks for longer term development, this Urban Recovery Framework (URF) therefore aims to identify initiatives at the city level that will contribute towards defusing local tensions and grievances, as well as building resilient local systems and services by enhancing the capacities of local authorities and service providers.

This chapter provides a summary of the impact the conflict has had on Yemeni cities, and outlines some potential composite challenges to be addressed in urban recovery initiatives. These composite challenges also provide strategic entry points that both addresses several stressors and root causes to current vulnerabilities across sectors, while leveraging identified opportunities. The chapter will not provide a comprehensive list of all sector required interventions, but suggests how to start thinking about a cross-sectorial and area-based approach to urban recovery identifying potential priorities for the greatest value for money in urban recovery.

Going forward, the strategic directions outlined needs further detailing at the national, city, and neighbourhood levels to identify specific measures and initiatives that will contribute to their realisation through participatory processes engaging decentralised government, civil society, and city dwellers.

Findings: The impact of the conflict and pre-crisis stressors to Yemeni cities

Yemen has a rich history of city making, reflected in its significant and diverse cultural heritage. Cities with strategic geographical locations on the coast or main traveling routes have, over time, grown in importance and size, while political shifts and rural-to-urban migration has shaped urbanisation patterns. The extensive displacement since the outbreak of the conflict has further contributed to steer urbanisation. Although Yemen remain a predominantly rural country, with a modest estimated 30 percent of the population living in cities, the country experiences rapid urbanisation fuelled by high natural birth rates and continued rural-to-urban migration. The 27 largest cities have an estimated population of more than 8.9 million people. Sana’a, the primate city in Yemen, with a population of 3.4 million, is more than three times larger than the second largest city, Aden, and larger than the combined population for the nine other cities covered in this report.

The cities studied in this report have seen a significant impact from the conflict on the economic productivity, performance of sectors, and composition and cohesion amongst their respective populations. Main findings of the crisis impact on Yemeni cities can be summarised in the following overarching challenges:

Limited capacities and resources at decentralised governance levels – particularly in terms of service systems, are hindering sound planning and provision of adequate basic and social services.

1. In the years before the conflict, several initiatives sought to decentralise political, fiscal, and administrative systems. Yet, local authorities still have limited budgets and capacity to govern and deliver services or to respond to changing socio-economic and political situations. Lack of transparency is further hindering accountability, and masks wide-spread corruption. Coupled with large-scale damages to infrastructure, this has severely limited the collection of taxes, and thus further the provision and maintenance of basic and social service delivery in Yemeni cities. Systems of patronage networks appear to have been established for access to government, people in positions of power, as well as informal power brokers to access services. Public demonstrations have been held by inhabitants expressing their discontent and demanding delivery of services and rebuilding of damaged infrastructure and buildings.

2. The access to, availability and operational capacity of health services has been severely affected by the conflict, rendering a large share of the population without essential healthcare. The risk of infectious disease transmission is significant in densely populated urban areas, particularly for those living in overcrowded informal areas, and those without adequate housing, including poor water and sanitation conditions. The current spread of COVID-19 is compounding an already dire situation. Education has become less accessible while the quality has been lowered, reflected in declining enrolment and literacy rates. Girls are particularly affected. Key challenges for those who remain in school include teacher absenteeism, lack
of studying materials, and overall poor quality of education. Both the running of health and educational facilities are being impacted by the shortcomings of the energy sector.

3. Yemen has the lowest water per capita availability in the world, with groundwater extraction exceeding replenishment capacity. Urbanisation is adding additional strain on limited water supplies, and the quantity and quality of the water supply in the cities will be significantly affected by the projected increases in both flooding and droughts. Intermittent water supply delivery, with more than 6 million people in urban areas suffering from disruption or cut to supply, has resulted in people resorting to private water tankers and mosques. The energy crisis, with more than 14 million people estimated to be without electricity, has intensified with the deterioration of the electricity infrastructure. Unmanaged urban growth has increased traffic congestion, road accidents, and air pollution, while extensive damage to road infrastructure is limiting inter- and intra-city connectivity.

4. The omnipresent lack of data on both city level service provision and reliable population data hinder local authorities and service providers in their planning and delivery of services. While this report has relied on population projections on the 2004 census, as well as available displacement and migration data, the caveats provided indicate that this data might be unreliable to depict actual city populations, and even more so provide an inaccurate account on more granular neighbourhood levels — including over informal areas and hosting sites of displaced populations.

5. Yemeni cities, particularly those representing strategic nodes, have been hit particularly hard by the fighting between warring factions, enduring significant devastation, casualties, and displacement over the course of the current conflict. Al Hodeidah, with its critical port facilities, has experienced the by far largest destruction of built structures. Also, the three largest cities and economic centres of Sana’a, Aden, and Ta’iz have been severely impacted by destruction as well as the movement of people. Airport facilities and markets have been directly targeted in several cities.

6. The economic structure of Yemeni cities is diverse, but has historically centred on agriculture, fishery, and oil and gas production. Moreover, the unique cultural and architectural heritage in Yemen represents a considerable potential for tourism. While the agriculture sector has been severely impacted by the conflict, Yemen’s economy is still to a large degree dependent on agriculture. This is also the case in cities, where the urban economies have been highly interlinked with agribusinesses, trade, and export of agricultural products. At the same time, the pull towards cities have resulted in reduced manpower in the agricultural sector while also resulting in higher urban unemployment. A contracting agriculture sector has reinforced an existing reliance on imported goods, thereby rendering the country even more dependent on access to, and exposed to fluctuations in, international markets.

7. Conflict, high population pressure, restricted access to foreign markets and the blockage and destruction of ports with corresponding adverse effects on import and export of goods including oil, have resulted in a war economy in Yemen. Furthermore, the rapid depreciation of the Yemeni rial, plummeting prices of food and other essential goods, and a sharp drop in remittances, coupled with major cuts in donor support for humanitarian aid, is further driving the economy towards collapse. Lack of transport and economic infrastructure is limiting inter- and intra-city connectivity, amongst others placing significant constraints on agricultural products from reaching processing facilities as well as local, regional and export markets. In particular, underdeveloped, insufficient, and damaged infrastructure, improper handling of food, spillage and degradation due to packaging, and lack of cold chains is limiting rural-urban value chains. Economic sectors remain critically vulnerable to both natural and man-made shocks.

8. The urban population in the ten cities is young, with more than half the population under 25 years old, reflecting the estimated national median age of 20.2 years. There is a majority of men in the ten cities, with the highest average share of men between 20-24 years, where work prospects are likely to attract more young men than other demographic groups to cities. At the same time, young people are facing very high under- and unemployment, while also lacking formal channels to participate and potentially influence their own or Yemen’s future.

Land disputes are one of the root causes and multipliers for local conflicts.

9. Weak regulatory mechanisms, the absence of a transparent land registry and system for authenticating land deeds and documents, formal or customary, as well as no national cadastre, complex and overlapping legal systems for land and tenure, tribal claims, land grabbing, corruption, and the use of land to drive political agendas, has resulted in increased and deepened land disputes. Although land disputes in urban areas are to be settled in court, the inadequacies of the formal system have pushed people to turn to customary or informal mechanisms for land resolution even in cities. The reliance on dual legal systems (formal and tribal) reinforce unbalanced power dynamics.

10. Women have limited access to land and property, oftentimes neither the provisions of the national Islamic laws nor customary norms guarantees women’s rights are respected. Examples show that women who have sought to settle inheritance and land ownership claims in courts due to social stigma have been targeted for bringing ‘family matters’ to public scrutiny. Cultural and religious practices, as well as customary practices, impact women’s rights related to land and property. Gender bias within the official administration also leads to the exclusion of women from decision making on policies and programs on land.

11. Rights to land and property are essential to women’s equality and wellbeing. Women’s rights in, access to and control over land, and property is a determining factor in women’s living conditions, especially in rural economies, and can be essential to women and their children’s daily
survival, economic security, and physical safety. Despite the importance of these rights for women and women headed households, women still disproportionately lack security of tenure. Women’s disadvantaged economic position in this regard creates a structural dependence on men for access to resources, which in turn can subject women to insecurity and violence.

12. Unpredictable land restitution mechanisms are a hindrance for return and recovery. About half of urban IDPs and almost all rural IDPs own property. However, once displaced, there is a high risk that property IDPs leave behind becomes occupied by neighbours, militias, sold to new owners or divided through inheritance claims, making it difficult to reclaim the property upon return. The possibility of contamination of housing and land with landmines or other explosive remnants of war is a further obstacle to return.

**Displacement enforces patterns of urban sprawl and informality, and heightened exposure to the adverse effects of natural hazards.**

13. Informal and sprawling areas in and around cities, as a result of unmanaged urban growth, are characterised by limited access to basic and social services and infrastructure, poor housing conditions, socio-economic divisions and competition for resources. Already prior to the conflict there were persistent inequalities in the housing market, where the formal market exclusively serviced high- and middle-income groups. Conflict and precarious environmental conditions combined with poor structural estate, lack of infrastructure, and building in flood or land/rockslide-prone areas have further exacerbated the situation, where large-scale damage and destruction to residential buildings have substantially increased the number of people in need of shelter or who are suffering from unaffordable or inadequate housing conditions.

14. An estimated 3.6 million people are currently displaced in Yemen, with 1.3 million people displaced from and 900,000 arriving in the ten cities featured in this report. As a result, some cities have to (re-)integrate a large number of IDPs who are ‘pulled’ to cities by the relative safety, perceived livelihood opportunities, and access to services. The majority settle in rented accommodation or with host communities, while others live in dispersed settlements, squatted buildings, or collective centres. Relocation often takes place to inhospitable environments, characterised by social stigma, marginalisation, discrimination, harassments, and tenure insecurity, at times fuelled by conflicts over assistance and access to local services between host communities and new arrivals. Other cities have lost a large number of people, who leave behind empty houses, fragmented social fabrics, and vacant stores and workplaces. The influx of people to certain city areas has further contributed to increased rental prices, overcrowding, competition over resources, and multiple displacement.

15. The increased competition over resources in urban areas exacerbates the challenges for local authorities and service providers in delivering basic and social services in an equitable manner.

Yemen cities are increasingly exposed to environmental and climate changes further exposing vulnerabilities due to poor planning and poverty.

16. Yemen cities are prone to the impacts of climate change and recurring natural disasters. Climate change and environmental stresses manifest with extreme weather events, such as torrential rains and flash floods, salt-water intrusion, and hotter temperatures, contributing to, amongst others, reduced food safety and public health concerns. Furthermore, rising sea levels correlating with declining groundwater aquifers will intensify salt-water intrusion. Cities in low-elevation and coastal zones, such as Aden and Al Mukalla, face the combined threat of sea-level rise and storm surges.

17. The damages caused by recent natural events, such as the flash floods spring and summer 2020, have exacerbated the vulnerabilities of internally displaced and poor urban communities, and significantly damaged economic sectors, infrastructure, and housing.

18. Lack of potable and safe water poses severe risks to human health and ability to strengthen food production. The use of untreated wastewater for irrigation is increasing soil erosion. Flash floods are equally contributing to soil erosion, as they wash away fertile top-layers of soil. Loss of green cover, and unplanned urban growth are contributing to these stresses. So far, there has been limited investment in urban rainwater harvesting, and storm water management that contributes to recharge of aquifers.

**Lack of representation of women and youth in political processes and decision making are enforcing patterns of disenfranchisement and in envisioning a future.**

19. While women largely are excluded from formal decision making and politics, there is a rising trend of women taking up social roles traditionally held by men, including different types of employment. Whether the economic empowerment translates into more influence in decision-making or would last beyond the conflict, however, is not yet clear. Customs, traditions, which region of the country, and whether it is a rural or urban area, are decisive factors for whether and to what extent women have a role in political, economic, or domestic decision-making, or can access their legal rights. Women have also been targeted due to political engagement and demonstrations in urban areas, and are further exposed to additional protection risks in the meeting with local security/police forces.

20. Civil Society Organisations (CSOs) have played a key role in supporting local populations. However, increased use of intimidations, threats, harassment, excessive force, arrests, and abductions by state and non-state actors is making it more difficult for these organisations to operate.

21. Youth disenfranchised before the conflict with high youth unemployment and of lack of a voice in the public sphere (despite constituting the largest share of the population), has induced youth distrust in local and national governance systems, and made youth vulnerable to recruitment to violent groups.

Women and children are disproportionately exposed to protection risks.
22. Protection needs in Yemen are increasing while social cohesion is reducing. This is oftentimes more pronounced in urban areas due to the fluidity of residents, and the heterogeneity of people. Gender Based Violence, harassment, and limitation of rights, including access to services, as well as negative coping mechanisms such as early forced marriage, forced labour, and recruitment of child soldiers, and street begging are increasingly being observed, while social divisions are deepened and unequal access to social safety nets increased.

23. Women and children in displacement are exposed to SGBV and exploitation risk due to insecure shelter situations. Especially female and child headed households are unable to secure income and safe shelter. Moreover, female IDPs often struggle to access humanitarian services, as a result of not having national identification.

24. Children are increasingly victims of violent incidents as the conflict has impacted educational facilities, residential housing, and markets. This has resulted in an increase of post-traumatic stress symptoms amongst children from armed attacks.

Yemen’s urban cultural heritage of both domestic and international importance is threatened by the ongoing conflict and lack of protection, contributing to loss of identity markers and potential income opportunities.

25. The conflict has exacerbated the threat to Yemen’s cultural heritage, intensified damage to cultural heritage sites and losses of assets, as well as contributed to the fragmentation of its socio-cultural fabric and loss of shared identity markers. Multiple factors are contributing to this. These include active combat and terrorist attacks which, intentionally or circumstantially, target sites and symbols of history, identity and religion; environmental factors such as flooding and cyclones; rapid urbanization encroaching on sites; fragmented and weakened governance; limited financial funds for restoration and maintenance; squatting on cultural sites; and looting.

26. Displacement and the economic crises may intensify loss of traditional know-how and techniques in maintaining traditional buildings. Reconstruction efforts of historical sites and city environments will depend on sustaining and increasing knowledge of heritage preservation.

From shock absorption towards transformation – Six goals for urban Yemen

As further elaborated in the methodology chapter, short- and long-term consequences and impact of shocks can be understood as multiple temporalities to be planned for and responded to in parallel. The identification of these should be done through a flexible, iterative processes in order to navigate shifting needs and challenges in the immediate/short-term towards the medium and long-term. As such it is an exercise in balancing immediate response and ‘quick-wins’ with longer-term development with a scope and scale determined by current implementation capacity and available resources. These temporalities can be divided into three “phases” with corresponding measures:

1. Absorptive, responding to immediate needs;
2. Adaptive, recovery for medium-term response, including build-back-better;
3. Transformative, longer-term response, including disruptive measures and bounce forward.

Although the absorptive, adaptive, and transformative phases must be linked and addressed on a national, city, neighbourhood, and individual levels in parallel, the analysis and suggested measures should focus on localising the URF to specific urban contexts. In Yemen, political, historical, environmental, and socio-economic factors contribute to both strong commonalities and differences between cities. This requires the URF to be adapted to the specificities of each city, working with communities, local governments, and relevant urban actors. In other words, the URF should ideally be developed for each individual city, linking the framework upward to the national level, and down to the community and individual levels, considering trends, challenges, needs and opportunities but centred on the systems and capacities in the respective city.

This section defines eight goals for Yemeni cities in response to the challenges outlined above. For each goal, opportunities and suggested entry points for absorptive, adaptive, and transformative measures are identified. This should be read as a place of departure to develop an URF, rather than a finalised framework or list of measures. The purpose of this section is to demonstrate the types of measures that may be considered, and how these links across sectors and types of responses.

Goal 1: Local governments are capacitated to lead holistic and inclusive planning implementing local service provision

Absorptive:

- Establish urban coordination systems for actors working in cities, including mechanisms for sharing of lessons learned and identifying opportunities for convergence programming and joint support to communities in order to avoid duplication of efforts.
- Streamline provision of basic and social services throughout the city level, linking it to ongoing programmes including the World Bank’s Integrated Urban Services Emergency Project and Emergency Electricity Access Project. Greater fiscal autonomy and mechanisms for tax collection for local governments will further the capacity of local governments to deliver services.
- Promote labour intensive projects and programmes for service and infrastructure delivery, targeting youth and women.

Adaptive:

- Support the development of City Development Strategies (CDS) as a steering tool to build a shared vision for the future of Yemeni cities, integrating the activities of private and non-state actors. The aim of a CDS should be to balance the economic growth objectives of a given city with the achievement of social equity and reducing its ecological footprints. In the process cities can build a shared vision based on their resource endowments and assets and core
competencies, which has to be harmonized with regional and national priorities.

- Institutionalise system delivery measures at national level, by developing a system to ensure compliance in local spending on service delivery in accordance with guidelines.
- Build the capacity of elected officials and technocrats on integrated multi-sectoral planning for local economic development and service delivery to its inhabitants. Carry out data analysis on direct and indirect expenditures for provision of infrastructure to adopt measures towards cost recovery mechanisms for infrastructure and service delivery.
- Sensitise local representatives to the potential benefits of including IDPs in planning and service delivery in a longer-term perspective.
- Explore options for localised value-chains and private sector contributions that addresses service delivery gaps, i.e. the provision of safe water and where feasible linked to city wide systems.
- Explore the potential of solar panel grid in response to the collapse in energy provision, leveraging initiatives such as UNDPs solar panel grid programme targeting rural women. Remove key barriers to the sector including lack of quality control and skills. Access to alternative sources of energy can have a significant impact on multiple other areas, such as access to water, strengthen health and educational service delivery, providing street lightning to increase safety at night, as well as offering a health-friendly alternative to diesel generators. Linked to a grid rather than supplying on individual basis taking advantage of the opportunity to pool resources in more dense urban areas, solar panels also represent a potential source of income that can be reinvested into the local economy.
- Introduce adaptive technologies to improve water treatment and sanitation facilities in informal settlements that can also link to value-chains, in partnership with local and private sector. Advocate for approaches that promote water conservation, recycling and sound management of solid waste and wastewater across cities.

**Transformative:**

- Strengthen systems for equitable service delivery to increased trust in local government and willingness to pay local taxes and fees for service provision. Private or community-led projects to fill gaps in service delivery serve as an income generation opportunity while also creating greater sense of ownership, responsibility to maintain infrastructure, and potential to increase social cohesion in what are often heterogenous urban areas.
- Increase women’s and girls’ mobility and access to public space through changing local norms and attitudes, addressing financial barriers and issue of availability, and reducing risks of violence and harassment in public.
- Support enabling conditions for more autonomous city governance, with mechanisms in place to ensure transparency and accountability. This will include identifying options for endogenous revenue generation at the city level and systems for taxation and receiving payment for usage, for example for water services, to improve return for better coverage and more equitable basic service delivery. Ma’rib stands as an example of a decentralisation process which has provided the local government with greater decision-making power over budgets and public spending. This has in turn allowed the local government to encourage and facilitate economic activities as the influx of IDPs into the city has increased demand for goods, housing, and service provision while at the same time expanding the labour force. The local government has thus boosted the economy by investing in local infrastructure and construction development in response to the population growth, with positive spill-over effects on other economic sectors in the city.

**Goal 2: Sustainable value-chains are identified, established, and enabled to link local economic sectors and facilitating income-generation, especially amongst youth and women.**

**Absorptive:**

- Establish and improve linkages between agricultural production areas and local, regional, and foreign markets to enhance food security, minimize food losses, and improve economic gains from agricultural production. Minimize food loss from harvest to storage, processing, and distribution to it reaches the markets by investing in transport infrastructure, cold chains, and equipping processing and distribution centres, including transportation and storage with electricity for cooling, and capacity strengthening in food handling and processing.
- Protect livelihoods of the most vulnerable households and their ability to respond to crises and shocks by strengthen fragile and disconnected local economic sectors, such as fishery in coastal cities.

**Adaptive:**

- Enhance the role of the port-cities, and especially in developing Aden’s role in import and export based on its container terminal and free zone, building on an increasing trend in import and export leading up to the conflict as well as its growth potential for manufacturing-related industries.
- Provide vocational and skills training and access to finance, land, and infrastructure for young people and women to promote innovation, entrepreneurship, and job creation, including setting up of small businesses that can plug into value-chains.
- Empower women who run family farms while the men leave for employment in the city, to ensure that they are engaged in and benefit from strengthened rural-urban linkages and value-chains.
- Investigate the potential for FDI and private investment, including remittance, into agribusiness and how to seek out international certifications for major crops, while also protecting communities through the establishment of grievance mechanisms.
- Reduce child labour in cities by linking school attendance with opportunities for income earning activities for parents.
Improve access to education, particularly for girls, in urban communities where formal education is not available, to equip young people with the necessary and appropriate skills for income generating opportunities in cities. Reduce the gender gap by raising enrolment rates for girls, focusing on relevant skills and training for urban employment opportunities. Understand and address the systemic contributors for girls drop-out rates.

**Transformative:**
- Develop agribusiness value-chains (agricultural and fisheries) through integrate market assessments into projects to understand the systems and ensure linkages between production, needs and market opportunities. Pilot and scale-up projects that use new technology to meet needs and employ flexible livelihood options, including entrepreneurship and start-ups which mostly has collapsed as a result of the war. Investigate existing and the potential of urban food production at community scale and adapted to an urban context to reduce the reliance on imported goods and external food dependencies whilst earning potential in rural and urban areas is improved, with money being infused back into the local economy.
- Enhance nutritive agricultural crop cultivation in semi-urban areas and hillslides surrounding the cities, by directing agriculture away from mono-Khat production towards other crops with higher nutritive value as well as improved income potential through processing and sale domestically or internationally. While potentially contributing to a reduced consumption of Khat which would positively impact people’s personal economy, this would be important to reducing water demand for crops production in peri-urban areas and making the country less dependent on import of food.

**Goal 3: Resilient Local Systems**
are promoted to mitigate the impact of increased frequency and magnitude of environmental hazards and natural disasters through integrated disaster risk and preparedness planning

**Absorb:**
- Undertake mapping of hazard areas where households occupy land. Reinforce structures in high-risk zones and minimize new housing development in the most flood-prone areas. Oftentimes these are informal settlements, where inadequate or lacking infrastructure is further exacerbating already exposed areas to further negative impacts from nature-related events.
- Implement sustainable urban drainage systems (storm water retention ponds, constructed wetlands). Maintain mountain and coastal wadis, plant (native) trees and remove obstacles that hinders the natural flow into the sea. Build flood-resilient infrastructure, including dikes, gates, and setback defenses, to prepare and respond to storms and flash floods. Update flood plain maps and flood evacuation zone maps and build-up monitoring, early warning, and evacuation systems to prepare for adverse weather events.

- Strengthen the institutional, technical, and financial capabilities needed to implement climate change adaptation and mitigation actions. Incorporating climate change consideration into development planning processes and sectoral budgets.

**Adapt:**
- Apply traditional, indigenous, and local knowledge and practices to complement scientific methods in disaster risk assessment, management, mitigation, and adaption, drawing on Yemen’s rich and important traditions of city-making.
- Encourage climate-appropriate building material and design using local materials and traditions and amend and enforce building standard codes to mitigate heat island effects, adapt to rising temperatures, and be more resistant to adverse weather events. Promote local design manuals to mitigate and manage rising sea levels, heatwaves, storms, heavy and flash flooding, adopting circular systems that will contribute to recharge water-table to compensate for increased groundwater extraction for domestic, agricultural, and industrial uses.
- Develop and carry out awareness-raising for relevant actors on how to adapt to the potential impacts of climate change. Explore innovative solutions for insurance in the wake of environmental crises.

**Transform:**
- Safeguard and evolve local building and city-making traditions to ‘bounce forward’ using local building techniques and material in combination with modern technology to prepare for, mitigate and adapt to environmental impact and change. Leveraging Yemen’s rich city making heritage a stronger sense of identity and place might be produced in the process. At the same time, climate change impacts may be reduced by sourcing looking to traditional methods and locally sourced material – including building compact urban centres, and can further be used to raise awareness of the adverse impacts of environmental degradation, particularly in urban areas.

**Goal 4: Managed and inclusive urban development is promoted through localised development and action plans focused on preserving Yemeni Cities’ unique socio-cultural heritage and identity**

**Absorb:**
- Upgrade and rebuild important buildings and neighbourhoods based on cross-sectorial analysis that identifies which areas that can unlock the greatest socio-economic value through intervention.
- Formalize and strengthen community-based governance mechanisms that encourage participation by youth and
women. Explore options for design and implementation of neighbourhood level plans, including awareness raising to encourage community self-initiatives to preserve socio-cultural heritage.

- Promote localised community action plans through participatory processes including women, youth, children, IDP communities, to foster social cohesion and safe urban spaces for women, men, girls and boys.

**Adaptive:**

- Develop and adopt a shared vision and urban development policy at national, regional and city level to manage urbanisation and support local governance through a decentralised system. Integrate comprehensive planning standards at the city and district levels.
- Leverage Yemen’s rich cultural heritage to act as catalysts to move towards reconciliation and increase social cohesion, creating a sense of belonging and shared identity in heterogeneous urban areas. Protect and reconstruct cultural landmarks, monuments and other places and objects of cultural significance. Cultural heritage as a major contributor to the tourism sector and the overall economy post-conflict.
- Urban management strengthened to mitigate unplanned, haphazard expansion of informal areas as a result of rapid population growth, recognising that many IDPs may stay on in cities in protracted situations. Utilise the untapped potential IDPs represent to local economies, by ensuring access to basic and social services and a degree of tenure security in proximity to markets. Unlock Yemeni cities potential to drive economic growth employing strategic planning and adopting appropriate governance structures.

**Transformative**

- Identify and carry out urban renewal of key buildings with high social value that has been damaged or is not functioning due to the conflict employing young persons in the community. This will be initiated to instil new functions and meanings to existing structures or reinvigorate previous functions, and produce local ownership to places that has a generative potential for the people living in the area.
- Address the challenges of squatting and looting in cultural heritage sites by identify relocation options for IDPs, while safeguard, manage and promote heritage protection through employment of youth, leveraging UNESCO’s Cash for Work programme.
- Reflect and integrate changing values and meaning in cities due to trauma, mass displacement and socio-economic changes in urban management and planning in ways that adds value to the city and its neighbourhoods.

**Tenure Rights for vulnerable populations is secured to address one of the root causes and multiplier of conflicts.**

**Absorb:**

- Put in place oversight mechanisms for dissemination, application, utilization, and enforcement of laws and regulations to address grievances and land disputes, including securing legal documents such as identification documents for women to enhance their land property accessibility and ownership as well as access to humanitarian services.
- Improve grievance resolution mechanisms for land and tenure disputes to strengthen social cohesion and protection, especially for women and girls. This includes consolidation and filling of gaps in current legal and regulatory system, targeting implementation needs, existing capacities, and funding.
- Explore options for physical upgrade of urban housing units combined with rental agreement, occupancy free of charge, or rent freeze options. Encouraging commercial banks and the Housing Bank to provide appropriate loans. This will help to reduce poverty and vulnerably across cities by addressing access to land and adequate housing, particularly for displaced, marginalised groups and female- and child-headed households.

**Adaptive:**

- Utilize participatory land readjustment and land-based financing mechanisms for urban renewal, exploring potential for private-sector partnership approaches. Encourage private sector investment in housing using innovative mechanisms, such as rent-to-own, upgrading, restoration or reconstruction of existing properties. Prepare low-cost housing designs and suitable alternatives that match the capabilities of the middle and low-income groups.
- Identify and invest in critical infrastructure and mechanisms to increase tenure security in areas with potential for durable solutions for displaced populations, using an area-based approach.
- Provide culture specific and community based legal support services to women to access land rights and dispute resolution mechanisms. Lobbying against discriminative acts preventing women from land access and ownership.

**Goal 5: Housing, Land, and**

**Transformative:**
State of Yemeni Cities

- Strengthen legal and policy framework and systems, including taking steps towards an effective land sector policy; improved legislation, planning laws and standards; regulation of land ownership; implement and enforce a comprehensive land-registry system and establishment of a national cadaster.

- Improve women's land rights through changing interpretation of customary law and discriminatory norm. Promote women's participation in bodies responsible for interpreting customary laws and supporting agents of change within local communities.

Goal 6: Women and youth participate on equal ground in decision-making in political, economic, and public life to foster inclusive urban communities and eliminate protection risks and harmful practices disproportionately affecting women, youth, and children.

Absorptive:

- Generate gender and age specific data in cities to provide a reliable, timely, accessible, and comparable information to identify context specific challenges and opportunities for women and youth's participation in decision-making. When direct access is not feasible, identify alternative ways to collect and triangulate data.

- Adopt and enforce applicable laws and regulations against forced marriage of girls and women. Secure access to livelihoods and education, as well as a safe environment for women and girls.

- Increase health support for children, women and men who suffer from PTSD. This could include training of communities on stress management and coping with trauma, involving teachers and religious leaders. Design gender specific community integration programs for returning fighters, marginalized and disabled persons, and IDPs.

- Establish safe protection units at hospitals where SGBV victims can be treated securely and discreetly. Provide shelter for SGBV victims.

Adaptive:

- Leverage technology in programming for youth with access to social media and expand access for others, particularly girls who are less connected, to provide the leaders of tomorrow with a platform and tools to communicate, learn and influence the political and social sphere.

- Advocate for increased share of women and youth in both central and local level decision-making positions, and identifying agents of change for capacity building in local communities and within institutions to secure protection space for women and girls, mitigate harmful practices such as early marriage, as well as raising awareness of rights and responsibilities, and to.

- Integrate SGBV prevention measures and adequate gender sensitive policing and justice mechanisms to protect victims from violence in localised recovery plans.

Transformative:

- Promote conflict mitigation measures involving women and youth combined with interventions which address the socio-economic conditions contributing to tension and conflict.

- Leverage women's increased labour participation and economic contributions to increase decision-making power for women in private and public life. Increased economic opportunities and empowerment may contribute to reduced risks to women's safety, while also offering the opportunity to influence their own situation and envisioning a positive future for themselves and those around them.

Setting principles for the URF, the URF need further joint efforts across disciplines and official stakeholders. The meeting should scrutinize potential activities at the various urban levels to gauge the most efficient activities for future resilience building.

1. National level to identify key cities, urban-rural linkages, and challenges and trends that cannot be understood or responded to in isolation to shocks and changes outside city boundaries.

2. City level to identify key areas of the city to focus on through assessment of intra-city inequalities, and overlapping needs and systems.

3. Community and individual level to identify vulnerabilities, protection issues, deprivations, and capacities on a local level.

ANNEXES
List of participant in verification workshops

Verification workshops were carried out by the University of Sana’a (remote) and the University of Aden (in person) in August 2020. Below follows a list of the participants.

<table>
<thead>
<tr>
<th>Name</th>
<th>Position</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Sana’a</strong></td>
<td></td>
</tr>
<tr>
<td>Abdulmalek H. Al-Jolahy</td>
<td>EX. Vice Minister of public work Ministry</td>
</tr>
<tr>
<td>Abdulrahman O. Alghabari</td>
<td>Technical Consultant of Public work Ministry</td>
</tr>
<tr>
<td>Majed A. Al-rafaee</td>
<td>Director of Emergency and Environment Hazards</td>
</tr>
<tr>
<td>Abdulanser M. Al-humadi</td>
<td>Economic Expert (research center)</td>
</tr>
<tr>
<td>Najat H. Alfakih</td>
<td>Gender Expert</td>
</tr>
<tr>
<td>Najib saeid Almaktri</td>
<td>Director of water sanitation (sana'a)</td>
</tr>
<tr>
<td>Fahd A. Al-Qubati</td>
<td>Sanitation Expert (Mareb)</td>
</tr>
<tr>
<td>Abdulgalil M. Hezam</td>
<td>Director, Housing Project (AlHodiedah)</td>
</tr>
<tr>
<td>Ghaib A. Gaber</td>
<td>Director of Urban Planning (Saada)</td>
</tr>
<tr>
<td>Sabria M. AL-Thaur</td>
<td>Gender Expert</td>
</tr>
<tr>
<td><strong>Aden</strong></td>
<td></td>
</tr>
<tr>
<td>Prof. Dr. Al Khadher N. Laswar</td>
<td>Rector of University of Aden</td>
</tr>
<tr>
<td>Prof. Dr. Mohammed Ahmed Thabet</td>
<td>Vice Minister of ministry of Public Works and Highways</td>
</tr>
<tr>
<td>Dr. Mohammed Aldroos Zain</td>
<td>Habitat Program officer - Aden</td>
</tr>
<tr>
<td>Hussien Saleh Al Gunaidi</td>
<td>Deputy of Abyan Governor – Zinjibar City</td>
</tr>
<tr>
<td>Eng. Yasmin Mohammed Al Awadhi</td>
<td>Deputy of Minister – Ministry of Public works and Highways – Housing Sector</td>
</tr>
<tr>
<td>Eng. Najeeb Mohammed Ahmed Noaman</td>
<td>Consultant of Minister of Water and Environment</td>
</tr>
<tr>
<td>Eng. Hussien Awadh Aqrabi</td>
<td>Deputy of Minister – Ministry of Public works and Highways – General works and Highway sector</td>
</tr>
<tr>
<td>Intisar Saeed Murshid</td>
<td>General Manager Aden Planning office</td>
</tr>
<tr>
<td>Abdulhakeem Abdullah Rajeh</td>
<td>General Authority of Environment Protection</td>
</tr>
<tr>
<td>Prof. Dr. Ahmed Mohammed Mahrn</td>
<td>Director of studies and environmental science Center – University of Aden</td>
</tr>
<tr>
<td>Eng Arwa Ahmed Humadi</td>
<td>Director of Water and Sanitation Project for Urban Cities</td>
</tr>
<tr>
<td>Eng. Fathi Al Sakaf</td>
<td>General Manager of Water and Sanitation Corporation - Aden</td>
</tr>
<tr>
<td>Prof. Dr. Ruhksana Mohammed Ismail</td>
<td>Director of Science and Technology Center – University of Aden</td>
</tr>
<tr>
<td>Dr. Mohammed Hussan Salem Amin</td>
<td>Secretary General of Aden University</td>
</tr>
<tr>
<td>Dr. Mustafa Ahmed Saleh</td>
<td>Director of the university rector – Faculty of Law</td>
</tr>
<tr>
<td>Arch. Eng. Wiam Saleh Mubarak</td>
<td>Architectural Dept. – Faculty of Engineering</td>
</tr>
<tr>
<td>Dr. Gamal Bawazir</td>
<td>Urban Environment &amp; Climate change</td>
</tr>
<tr>
<td>Prof. Dr. Hassan Mahmood Ali Al Hadithi</td>
<td>Urban Economy</td>
</tr>
<tr>
<td>Prof. Dr. Saleh Mohammed Mubarak</td>
<td>Urban Housing</td>
</tr>
<tr>
<td>Dr. Mohamed Zaid A. Karim</td>
<td>Urban Infrastructure</td>
</tr>
<tr>
<td>Prof. Dr. Ali Ahmed Alsaqaf</td>
<td>Gender &amp; Youth Empowerment</td>
</tr>
<tr>
<td>Nebras Al Sharmi</td>
<td>University media</td>
</tr>
<tr>
<td>Saqr Ahmed Hassan</td>
<td>University Photographer</td>
</tr>
<tr>
<td>Farida Ahmed Mahrn</td>
<td>Science and Technology Center – University of Aden</td>
</tr>
</tbody>
</table>

- Mr. Omar Al Ashwali – General Manager of Planning office – Hadhramot couldn’t attend the workshop due the security situation of the road to Aden but he sent his comments on the summary of the report.
- Participants from Taiz and Al Hawtah could not attend the workshop due to the security situation of the road to Aden.
## List of Figures

<table>
<thead>
<tr>
<th>Figure</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>City Resilience Curve</td>
<td>20</td>
</tr>
<tr>
<td>2</td>
<td>Topography of Yemen (UN-Habitat 2020)</td>
<td>22</td>
</tr>
<tr>
<td>3</td>
<td>Cities in Yemen (UN-Habitat 2020)</td>
<td>23</td>
</tr>
<tr>
<td>4</td>
<td>Mapped areas of control as of July 2019 (Redrawn from ECFR)</td>
<td>31</td>
</tr>
<tr>
<td>5</td>
<td>Religious divisions in Yemen (Redrawn from ECFR)</td>
<td>33</td>
</tr>
<tr>
<td>6</td>
<td>Urbanisation trends in the Arab region (UNDESA)</td>
<td>35</td>
</tr>
<tr>
<td>7</td>
<td>Population for governorate and city, share of population per city for governorates</td>
<td>40</td>
</tr>
<tr>
<td>8</td>
<td>Age distribution Yemeni cities. Source: CSO population projections based on 2004 census data</td>
<td>40</td>
</tr>
<tr>
<td>9</td>
<td>Share of population under the age of 25. Source: CSO population projections based on 2004 census data</td>
<td>42</td>
</tr>
<tr>
<td>10</td>
<td>Annual displacement from the 12 governorates in Yemen (PNGK, based on IOM DTM 2019)</td>
<td>42</td>
</tr>
<tr>
<td>11</td>
<td>Overview refugees and migrants (HNO 2019)</td>
<td>45</td>
</tr>
<tr>
<td>12</td>
<td>Tracked Migrants Arriving (HNO 2019)</td>
<td>46</td>
</tr>
<tr>
<td>13</td>
<td>Governorates, districts and main cities in Yemen (UN-Habitat 2020)</td>
<td>47</td>
</tr>
<tr>
<td>14</td>
<td>Governance in Yemen according to Laws 4/2000 and 18/2008 (Rogers)</td>
<td>49</td>
</tr>
<tr>
<td>15</td>
<td>Civilian spaces and civilian casualties (ACAPS Yemen)</td>
<td>50</td>
</tr>
<tr>
<td>16</td>
<td>Number of civilian injuries and fatalities (CIMP)</td>
<td>56</td>
</tr>
<tr>
<td>17</td>
<td>Yemen Economic and Livelihood Zones (UN-Habitat 2020, compilation of various sources)</td>
<td>57</td>
</tr>
<tr>
<td>18</td>
<td>Price trends of diesel and petrol, and gas at the end of the period 2014-2019</td>
<td>68</td>
</tr>
<tr>
<td>19</td>
<td>Price trend of diesel, petrol, and domestic gas October 2019</td>
<td>76</td>
</tr>
<tr>
<td>20</td>
<td>Petrol, gas and diesel prices (WFP)</td>
<td>76</td>
</tr>
<tr>
<td>21</td>
<td>Import Aden port (ACAPS Yemen)</td>
<td>77</td>
</tr>
<tr>
<td>22</td>
<td>Number of critical infrastructure damage</td>
<td>78</td>
</tr>
<tr>
<td>23</td>
<td>Families in Al Hodeidah using negative coping strategies</td>
<td>80</td>
</tr>
<tr>
<td>24</td>
<td>Employment figures Yemen (ILO 2015)</td>
<td>80</td>
</tr>
<tr>
<td>25</td>
<td>Unemployment Rate Yemen, 2015</td>
<td>81</td>
</tr>
<tr>
<td>26</td>
<td>Daily median qualified wage YER.</td>
<td>82</td>
</tr>
<tr>
<td>27</td>
<td>Retail price of wheat</td>
<td>83</td>
</tr>
<tr>
<td>28</td>
<td>Personal remittances received, current USD (World Bank 2018)</td>
<td>85</td>
</tr>
<tr>
<td>29</td>
<td>Personal remittances received, % of GPD (World Bank 2018)</td>
<td>86</td>
</tr>
<tr>
<td>30</td>
<td>Areas with an irregular development pattern in Sana’a, suggesting unplanned or informal settlements (UN-Habitat 2020)</td>
<td>87</td>
</tr>
<tr>
<td>31</td>
<td>Google satellite view for Sawad Saawan neighbourhood, YBRD housing project and Al- Muhamasheen housing project</td>
<td>93</td>
</tr>
<tr>
<td>32</td>
<td>Number of health facilities and their functionality in Aden</td>
<td>95</td>
</tr>
<tr>
<td>33</td>
<td>Main healthcare facilities in Sa’ada. UN-Habitat (2020)</td>
<td>105</td>
</tr>
<tr>
<td>34</td>
<td>Cholera Associated Cases and Deaths by Age in Aden</td>
<td>105</td>
</tr>
<tr>
<td>35</td>
<td>Malnutrition in selected cities (Nutrition cluster assessment Feb 2020)</td>
<td>106</td>
</tr>
<tr>
<td>36</td>
<td>Stunting prevalence cities (Nutrition cluster assessment Feb 2020)</td>
<td>108</td>
</tr>
<tr>
<td>37</td>
<td>Main education facilities in Sa’ada</td>
<td>108</td>
</tr>
<tr>
<td>38</td>
<td>Public Schools in Sa’adah</td>
<td>111</td>
</tr>
<tr>
<td>39</td>
<td>The proportion of damaged parts of the sewer and water networks</td>
<td>111</td>
</tr>
<tr>
<td>40</td>
<td>The completely damaged water network that needs urgent intervention</td>
<td>114</td>
</tr>
</tbody>
</table>
Figure 41 Household utilization of municipal water services and private tanker trucks in Aden and Sana’a: 114
Figure 42: Yemen waste composition in 2011: 115
Figure 43 Physical and Operational Status of the Power Sector by City (excluding towers): 118
Figure 44 Share of households with solar energy supply by Governorate (Redrawn from Percent or Polling Research 2019): 119
Figure 45 Change of number of hot days (>35 Celcius) in RCP85 scenario, mid-century (1935-1960): 122
Figure 46 Map Sea Level Raise. (Redrawn from climatecentral.org): 126
Figure 47 Percent of losses by natural hazards affected Yemen from 1990 to 2014: 126
Figure 48 Wadi al Masilah and Sayhut town before Cyclone Chipala, 19 October 2015. NASA Earth Observatory / Joshua Stevens: 127
Figure 49 Wadi al Masilah and Sayhut town after Cyclone Chipala, 4 November 2015. NASA Earth Observatory / Joshua Stevens: 128
Figure 50 Ta’iz land cover change: 128
Figure 51 Damage by city (JRC and UNOSAT): 133
Figure 52 Moving frontlines in Al Hodeidah and conflict damages, UN-Habitat. Frontline mapping from Rr016 using WikiMapia: 143
Figure 53 Structures damaged against recorded civilian incidents: 144
Figure 54 Damage points in cities studied with remote sensing. JRC, 2019: 145
Figure 55 Nightlight change Ta’iz: 149
Figure 56 Nightlight values selected cities 2013-2019: 155
Figure 57 Night light per capita pre-conflict (2013). * Taiz and Zinjibar population data from 2014: 155
Figure 58 Percentage change in nightlight 2014-2019. A positive value means more light compared to pre-conflict levels. -100 percent means that the city is producing no light at all: 156
List of Tables

Table 1 Governing forces of the selected cities 31
Table 2 Data source and caveats for population data for the ten selected cities 36
Table 3: Population of Case Cities. 37
Table 4: Population figures largest 27 cities (cities presented in this report highlighted) 39
Table 5: City vs Governorate Population 40
Table 6 Population growth Aden 1900-2019 41
Table 7 Armed violence incidents impacting civilians, casualties and structures damaged in cities 56
Table 8 Key economic indicators 68
Table 9 Economic sectors and their significant in the ten cities, with agricultural land, industrial and commercial activities mapped out (UN-Habitat, 2020). 70
Table 10 The establishment damage according to the economic type 81
Table 11: Foreign exchange inflows into Yemen (billion USD) 87
Table 12: Displacement impact on housing demand 99
Table 13: Land and Housing Laws in Yemen 101
Table 14 Status of the water supply and sanitation in 2017 in selected cities 115
Table 15: Solid waste collection coverage in cities 117
Table 16 Climate Data Yemen Cities (CSO Yemen) 124
Table 17 Average temperature increase (RICCAR, sampled data) 125
Table 18 Land cover change in Aden in 1984 and 2018 132
Table 19 Overview table 136
Table 20 Comparison damage from remote sensing data and estimates from government sources 144
Table 21 Damages to structures against the civilian incidents between 2018-2020 145