Targeting of Infrastructure in the Middle East: Yemen Coding Methodology

What does TIME cover in Yemen?

The Targeting of Infrastructure in the Middle East (TIME) project focuses on tracking and analyzing the targeting of civilian infrastructure by parties to selected conflicts in the Middle East and North Africa (MENA). One of the selected conflicts in the TIME database is the conflict in Yemen.

The Yemen dataset records discrete attacks on civilian infrastructure (agriculture/fishing, energy, energy/water, health, transportation, and water infrastructure) from 2010 to the present. In addition to tracking the infrastructure targeted, the Yemen dataset also records information on the actors involved and targeted in the attack, when available.

This document discusses the data sources used to collect data on the targeting of civilian infrastructure in the conflict in Yemen. Additionally, this document covers the actors and infrastructure recorded in the Yemen dataset and the processes by which they are coded and integrated into the dataset.

How are incidents sourced?

Sources used for coding the destruction of infrastructure in Yemen come from humanitarian reports, news articles, and databases. The sources used are primarily in English but may also be in Arabic.

Incidents recorded in the Yemen dataset from databases are sourced from the Armed Conflict Location & Event Data Project (ACLED), the Civilian Impact Monitoring Project (CIMP), and the Yemen Data Project (YDP). ACLED collects real-time data on the locations, dates, actors, fatalities, and types of reported political violence and protest events across various regions including the Middle East. Incident information for Yemen is collected from ACLED's Yemen dataset[1]. CIMP is a monitoring tool that collects and disseminates real-time, open source data on the civilian impact from armed violence in Yemen. Incident information for Yemen is collected from CIMP's Monthly Data Drop[2]. YDP collects and disseminated data on the conduct of the war in Yemen with the purpose of promoting transparency and accountability. Incident information for Yemen is collected from YDP's Yemen database[3].

Incidents in the Yemen dataset from humanitarian reports are sourced from the United Nations Office for the Coordination of Humanitarian Affairs (OCHA), Médecins sans Frontières (MSF), Human Rights Watch (HRW), and Physicians for Human Rights (PHR). OCHA provides reports on the conflict situation in countries where it coordinated humanitarian assistance, including Yemen. Incident information for Yemen is collected from OCHA's *Weekly Humanitarian Update* for Yemen[4]. MSF is a humanitarian organization which provides medical assistance to people affected by conflict. Incident information for Yemen is collected from various reports,

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[1] Accessible at https://acleddata.com/data-export-tool/
[2] Accessible here https://civilianimpactmonitoring.org/reports
[3] Accessible here https://yemendataproject.org/data.html
[4] Accessible here https://www.unocha.org/yemen

press releases, and statements published by MSF. PHR is a human rights organization that advocates for medical ethics to protect human rights in countries around the world. Incident information for Yemen is collected from various newsletters published by PHR. HRW investigates and reports human rights abuses. Incident information for Yemen is collected from news articles and reports published by HRW.

Incidents of attacks on civilian infrastructure in Yemen are also sourced from new articles published in U.S. and international newspapers. These newspapers include, but are limited to, the BCC, Belfast Telegraph, Irish Mirror, McClatchy Tribune, The Jordan Times, The Yemen Times, The Nation, Haaretz, Saba News, New Indian Express, Financial Times, Bellingcat, and US News & World Report.

How is infrastructure coded and integrated into the Yemen dataset?

The Yemen dataset tracks the targeting of civilian infrastructure in the conflict in Yemen since 2010. The methodology researchers use to code for infrastructure in the Yemen dataset is outlined below.

In the Yemen dataset, the civilian infrastructure targeted during the conflict is integrated in three tiers, with each tier increasing in specificity.

Infrastructure recorded in the TIME database can be divided into six broad categories:

- **Energy**: infrastructure related to energy exploration, production, and distribution
- **Water**: infrastructure related to drinking water, purification, irrigation, wastewater treatment, and sanitation
- **Transportation/Marketing**: infrastructure related to the transportation of people and goods and the marketing and exchange of commodities
- **Energy/Water**: infrastructure related to both producing energy and water (e.g. a dam where hydropower and irrigation functions cannot be separated)
- **Health**: infrastructure related to public health, including but not limited to hospitals, clinics, ambulances
- **Agriculture/Fishing**: infrastructure related to crop cultivation and harvesting, and infrastructure related to fisheries

The Yemen dataset first records Infrastructure Type, which refers to the six broad categories of civilian infrastructure presented above. Based a source's event description, researchers categorize and code the type of infrastructure targeted as energy, water, transportation/marketing, energy/water, health, or agriculture/fishing. For example, if a dam were targeted by airstrikes, the researchers would code the Infrastructure type as energy/water.

Increasing in specificity, the researchers then record the infrastructure under Infrastructure. Based on the event description, researchers use common coding terms for each subset of infrastructure type. Terms used to identify pieces of infrastructure in the Yemen dataset under each infrastructure type are:

Agriculture/Fishing Infrastructure:

- Farm
- Fishing Boat
- Flour Mill
- Food Storage Unit
- Livestock
- Plant Nursery
- Refrigeration Facility
- Tractor
- Wheat Mill

Energy Infrastructure:

- Electricity Lines
- Electricity Project
- Electricity Tower
- Fuel Depot
- Fuel Truck
- Gas Pipeline
- Gas Station
- Gas Tanker
- Oilfield
- Oil Pipeline
- Oil Refinery
- Power Corporation Storage Units
- Power Plant
- Power Station
- Telecommunications Tower

Energy/Water Infrastructure:

- Dam

Health Infrastructure:

- Ambulance
- Government Building
- Hospital
- Medical Center

Transportation/Marketing Infrastructure:

- Airport
- Boat
- Bridge
- Bus

- Government Building
- Market
- Port
- Road
- Truck

Water Infrastructure:

- Government Building
- Irrigation Canals
- Sanitation Facility
- Wastewater Treatment Plant
- Water Desalination Plant
- Water Drill
- Water Pipeline
- Water Pump
- Water Station
- Water Tank
- Water Well

Lastly, researchers code for the specific infrastructure targeted under Specific Infrastructure. the coding under the Specific Infrastructure column includes detailed descriptions of the affected infrastructure and amount of infrastructure targeted when known. Therefore, common terms are not developed for this column in the Yemen dataset.

What actors are recorded in the (Country) dataset?

In addition to information on the infrastructure damaged in an attack, when available, the Yemen dataset codes for the actors involved in and targeted by the attack for each incident. A discussion of the actors in the Yemen dataset and the methodology used to code for them is presented below.

Identifying actors in Yemen is difficult due to the rapidly changing conflict dynamics including shifting affiliations and alliances, the presence of new actors, and the rise of quasi-state and private militias. To enable the comparison of incident data among Yemen and the other countries included in the TIME database, general classifications are maintained in the identification of actors perpetrating and targeted by attacks on civilian infrastructure. While our objective is to maximize comparability among countries in the database, we recognize the imperative for the Yemen dataset to capture the unique conflict dynamics that exist and the combination of actors party to the conflict. Therefore, the actor classifications presented attempt to bridge the need for both generalizability and specificity in actor coding, recognizing that classifications of actors require iterative adjustments.

When integrating actor information from incident reports, researchers code for the actors responsible for the targeting of the infrastructure and the actors targeted in the attack. Based on

the event description, researchers categorize and code actors following the methodology presented below.

<u>Actors Undertaking Targeting</u>

1. Category of Actor Involved in Destruction:

The category of actor perpetrating the attack in recorded in the Actor_Des_Category column. The column codes for actors using a mix of common and country-specific terms. The terms used to identify categories of actors involved in destruction in the Yemen dataset are detailed below:

- Saudi-led Coalition
- Hadi Forces
- Houthi Forces
- Non-State Armed Groups
- Political Militias

The term Political Militias is adopted from the ACLED Yemen classification of actors. Political Militias are defined by ACLED as "a wide range of armed groups that operate independently, in cooperation with state forces or as the armed wing of political parties or rebel factions" that "might be commonly regarded as government forces" but "they operate outside of the formal lines of military command".[5] The term is used in the Yemen dataset to identify actors involved in the destruction of infrastructure that are affiliated with Hadi or Houthi forces, but are not a part of the official military forces for either group.

2. Actor Involved in Destruction:

The Actor Involved in Destruction column refers to the particular group responsible for the targeting of the infrastructure. To capture the conflict dynamics within Yemen, the Yemen dataset does not use a prescribed set of coding terms to identify groups. Rather, based on the event description, researchers code either the specific name or the type of group involved, depending on the detail of the description. The groups included in the Yemen dataset are presented below.

Hadi Forces:

- Hadi Forces

Houthi Forces:

- Houthi Forces
- Popular Committees (affiliated with al-Houthis)

Non-State Armed Groups:

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[5] ACLED. 2020. *ACLED Methodology and Coding Decisions around the Yemen Civil War*. p. 2. Retrieved from: https://acleddata.com/acleddatanew/wp-content/uploads/dlm_uploads/2019/01/YemenMethodology_2020_ACLED.pdf

- Al-Qaeda in the Arabian Peninsula
- Gunmen
- Islamist Armed Groups
- Individual – Mohammed Hassan Kalfout
- Militants
- Tribal Group

Political Militias:

- National Resistance Forces
- National Resistance Forces Giants Brigade
- Southern Resistance Forces

Saudi-led Coalition:

- Saudi Arabia
- Saudi-led Coalition

Actors Affected by Targeting

1. Category of Actor Targeted:

The category of actor affected by the attack is coded in the Actor_Targeted_Category column. Like the Actor_Des_Category column, the category of actor is coded using a mix of either common or country-specific terms. These terms are detailed below.

- Houthi Forces
- Political Militias
- Non-State Armed Groups
- Hadi Forces
- Saudi-led coalition
- Aid Organization
- Civilians

The term Political Militias is used to identify actors targeted in an attack in the same manner as it is used to identify actors involved in the attack.

2. Actor Targeted:

The category of actor affected by the attack is coded in the Actor_Targeted_Category column. Like the Actor_Des_Category column, the category of actor is coded using a mix of either common or country-specific terms. These terms are detailed below.

- Hadi Forces
- Saudi-led coalition
- Houthi Forces
- Political Militias

- Non-State Armed Groups
- Aid Organization
- Civilians

The term Political Militias is used to identify actors targeted in an attack in the same manner as it is used to identify actors involved in the attack.

1. Actor Targeted:

The Actor Targeted column refers to the particular group affected by the attack. To capture the conflict dynamics within Yemen, the Yemen dataset does not use a prescribed set of coding terms to identify groups. Rather, based on the event description, researchers code either the specific name or the type of group targeted, depending on the detail of the description. The groups included in the Yemen dataset are presented below.

Aid Organization:

- Aid Organization

Civilians:

- Salah bin Hussein al-Dammaj
- Fishermen
- Farmers
- Pakistani sailors
- Local business

Hadi Forces:

- Hadi Forces
- Yemeni Government

Houthi Forces:

- Houthi Forces

Non-State Armed Group:

- Shiite Rebels
- Al-Qaeda in the Arabian Peninsula

Political Militias:

- National Resistance Forces
- National Resistance Forces Giants Brigade

Saudi-led Coalition:

- Saudi Arabia
- Saudi-led Coalition

"Unknown" coding: What is done if information on infrastructure and actors is not available?

Given the differences among sources in the level of detail and information included in their incident descriptions, not all incidents provided information on actors and infrastructure. For incidents where one or more of these categories or information were missing, researchers code unknown in the relevant columns. This is the most frequent outcome for most sources.