Needs Monitoring – Using Crowdsourcing to Shine a Light on Development Needs in a Conflict Setting

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Knowledge, Performance, Impact

Project Overview

Background: This is an overview of a pilot project undertaken by IBTCI and Premise Data under the USAID Yemen Monitoring & Evaluation Project Phase II (YMEP II). The project utilized Premise's crowdsourcing technology to create a unique platform for IBTCI to collect data to support USAID/Yemen.

Context: Yemen presents unique operating challenges for USAID due to the conflict which has been ongoing since 2015 and coincided with the start of the YMEP II project. Travel is extremely limited and many areas inaccessible. There is also extensive government monitoring of USAID and IP activities especially in Ansar Allah (Houthi) controlled areas.

The conflict has devastated local economies destroyed critical infrastructure, which has resulted in an ongoing humanitarian crisis with "approximately 80% of population being 'at risk' of hunger and disease, of whom roughly 14.4 million were in acute need of assistance" (World Bank, 2020).

USAID Yemen Programming Approach (YPA) 2017 – 2020: After a suspension of activities at the onset of the conflict, USAID Yemen resumed activities in 2017 with two key objectives:

Objective 1 – "key citizen needs met through local and national systems"

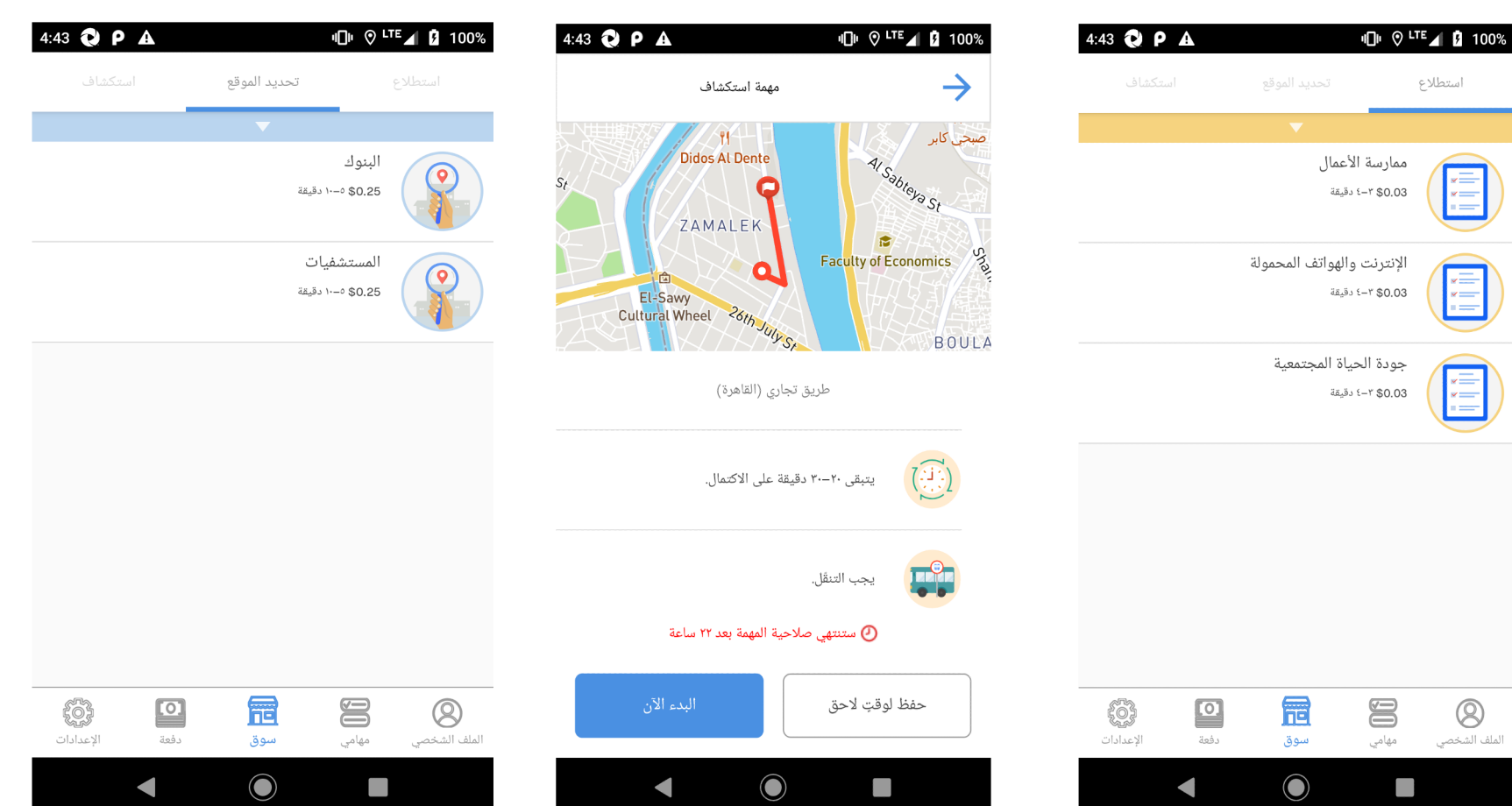Objective 2 – "Yemen's ability to manage conflicts enhanced"

YMEP II Project: The YMEP II project supports USAID/Yemen by collecting data to inform USAID/Yemen's decision-making and adaptive management processes. A central task under the YMEP II contract is to provide context and atmospheric data to understand the impact of the ongoing conflict on key civilian, social, and economic services indicators.

Pilot Project Goals: Given the challenges of collecting data in Yemen, IBTCI proposed a pilot project utilizing crowdsourcing technology to collect context data. The overall goals were:

- Provide USAID/Yemen real-time data to understand the changing environment in Yemen and changing public needs.
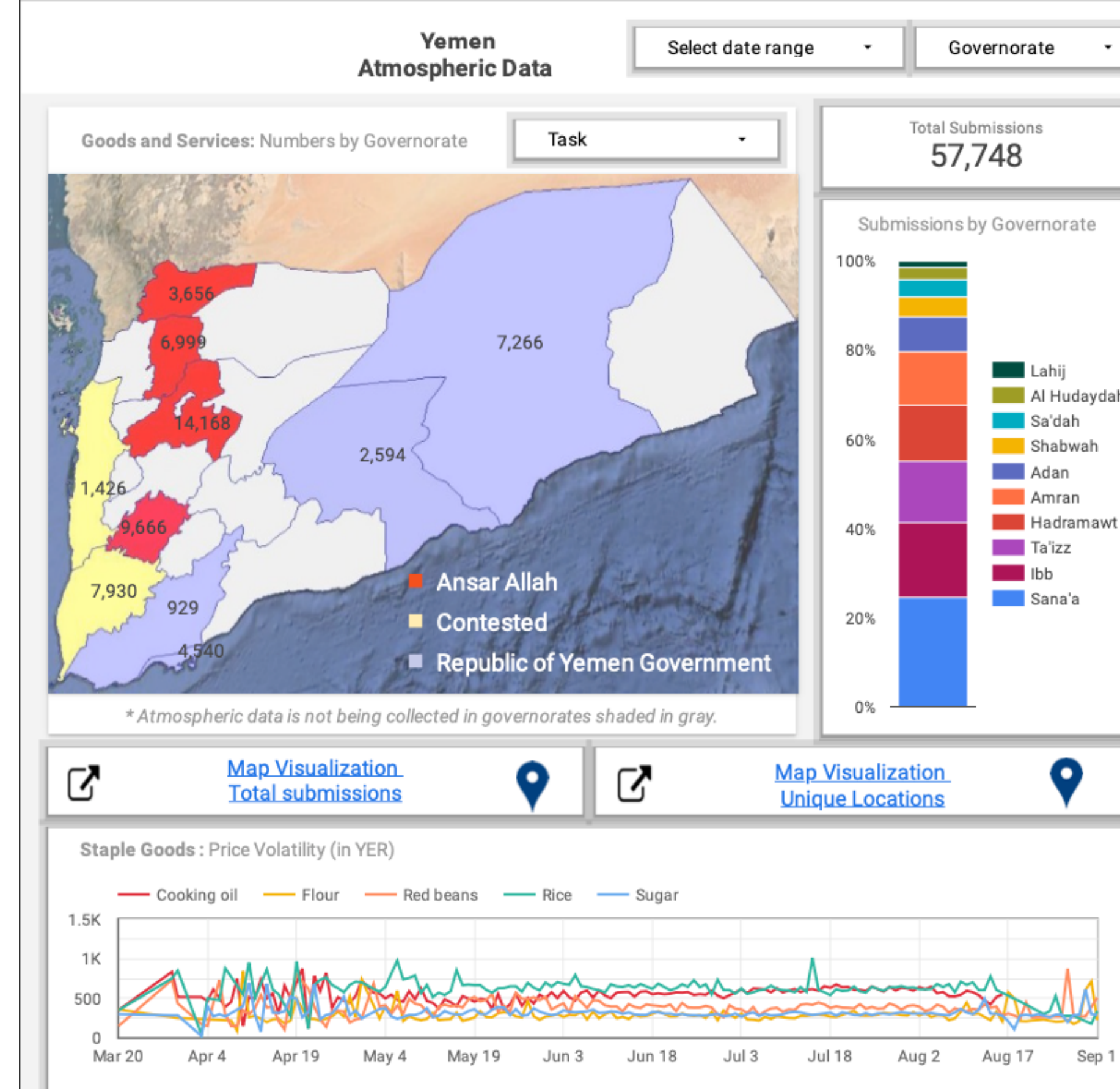- Provide a dashboard to show evolving needs/perceptions of Yemini citizens.

Premise Platform: Data collection for YMEP II was done using Premise's mobile application that crowdsources information at the hyper-local level through data contributors, in exchange for financial renumeration. The Premise application captures sentiment, identifies human terrain, and enables contributors to find locations, take photographs of discrete locations, and travel routes. A contributor is an average citizen from an area of interest with access to a smartphone. All surveys are localized into languages and dialects that are specific to the regions of interest. In total, Premise has recruited and onboarded 40,000 average Yemeni citizens nationwide.

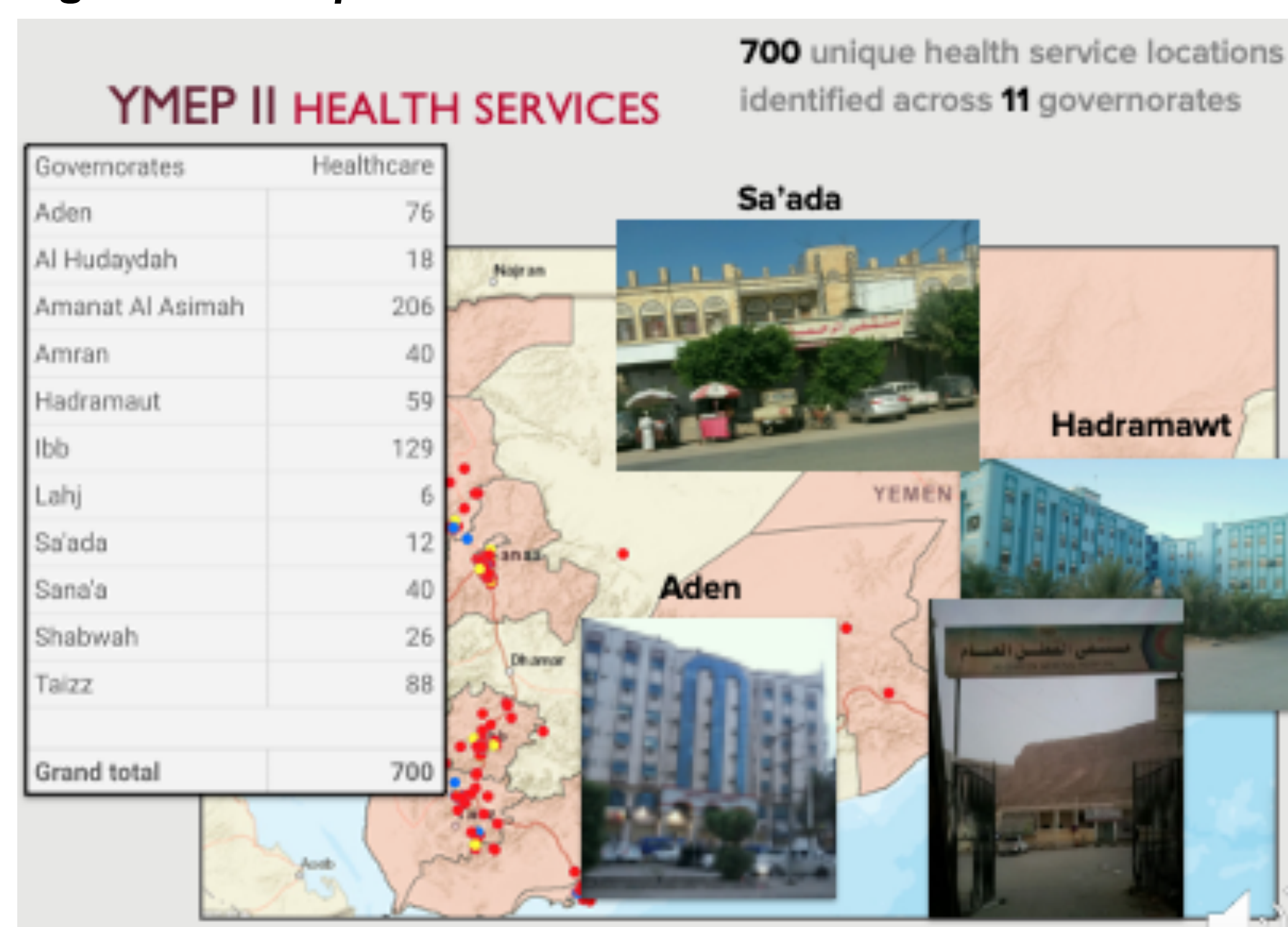*Figure 1: Example of Contributor View Premise App*

Pilot Phase 1

Figure 2: Phase 1 Dashboard w/ Commodity Price Fluctuations

Pilot Phase 1: Atmospheric Data Monitoring:
- Gasoline/Staple Goods Prices
- Exchange Rate Monitoring
- Identify Health & Education Service Providers (see figure 3)

Methodology – 1) Observational Tasks Pushed to Premise Network. 2) Open place discovery task / Place-based monitoring task
- Identify vendor
- Mark location
- Input price (if required)
- Take picture (if required of price)
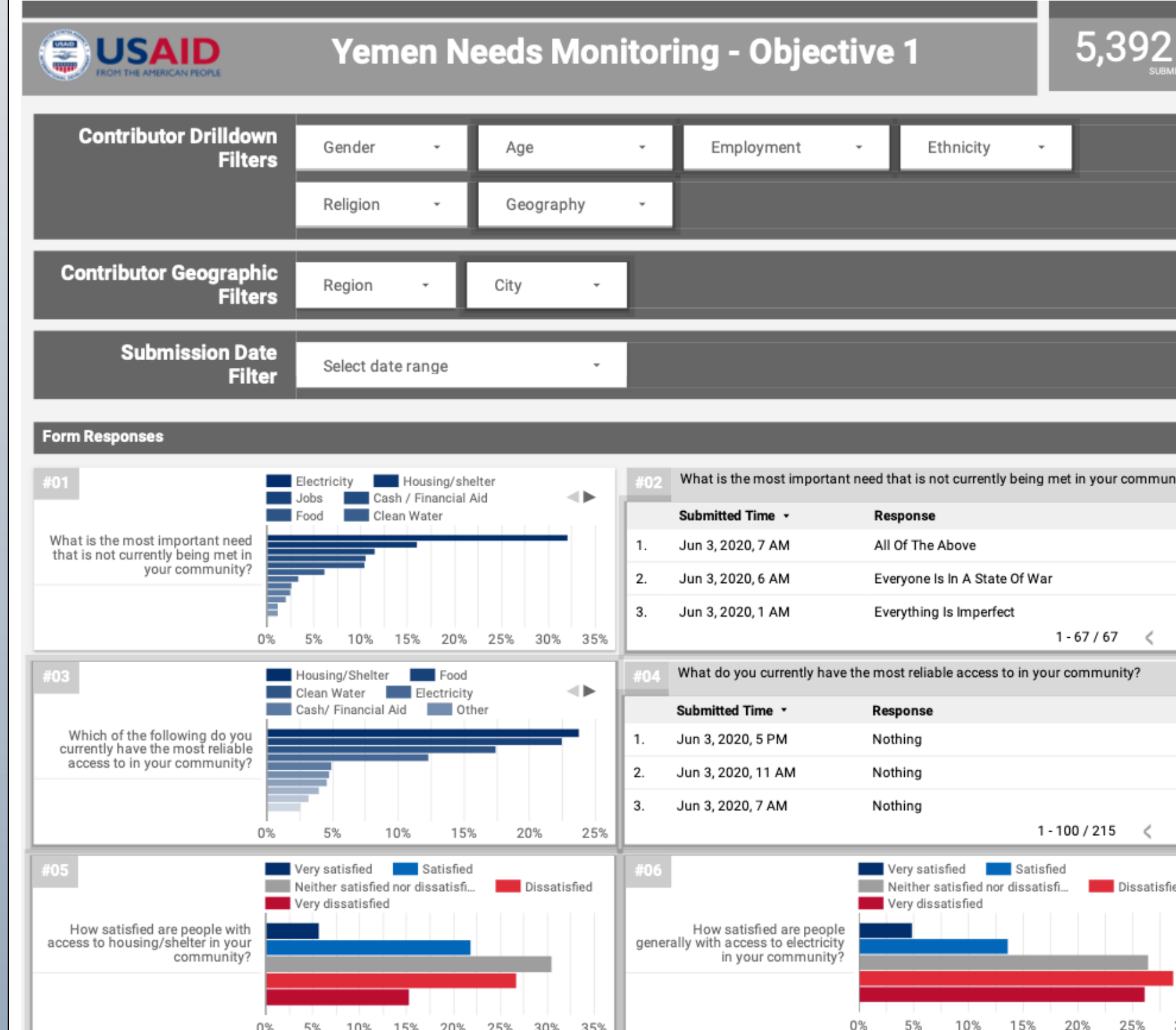- Ask vendor about challenges to obtain supply (if required)

Figure 3: Example Health Service Providers Data

Using the Premise platform, YMEP II identified the locations of health service providers in 10 governorates in Yemen including the name of the facility, services offered, hours of operation, whether the facility was permanent or temporary, and whether it was government operated or privately run. Premise received 3,357 discrete submissions of health facilities across the 10 governorates. After all submissions had been received, Premise's Data & Analytics team conflated the data to identify 700 unique health facilities after running the data through a machine learning algorithm.
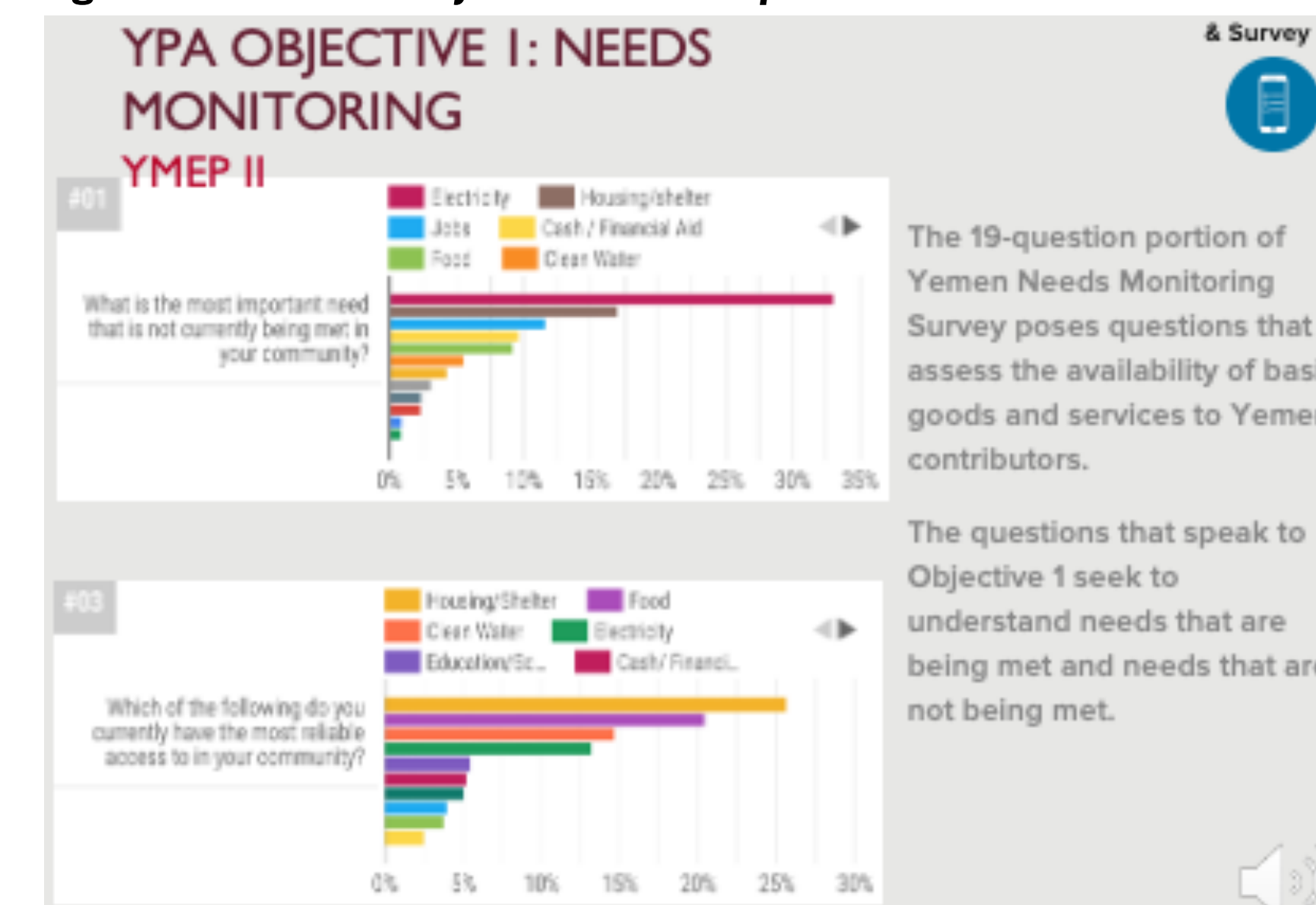
Pilot Phase 2

Figure 4: Phase 2 Dashboard w/ Drill Down Filters

Pilot Phase 2: Phase 2 of the pilot collected more nuanced sentiment data related to the USAID YPA Objectives 1 & 2. For example, questions targeted the needs of Yemini citizens related to YPA Objective 1 including questions to gauge citizens access to electricity, housing, clean water, health facilities, education, etc., and YPA Objective 2 including questions to gain a better understanding of conflict resolution mechanisms within Yemini communities and perceptions related to those mechanisms.

Methodology - Phase 2 utilized sentiment surveys completed by each contributor one time during the collection period. Sentiment surveys do not require contributor travel and can be done from the comfort of the contributor's home or workplace, since they only ask questions of opinion, rather than questions requiring the contributor to make an observation.
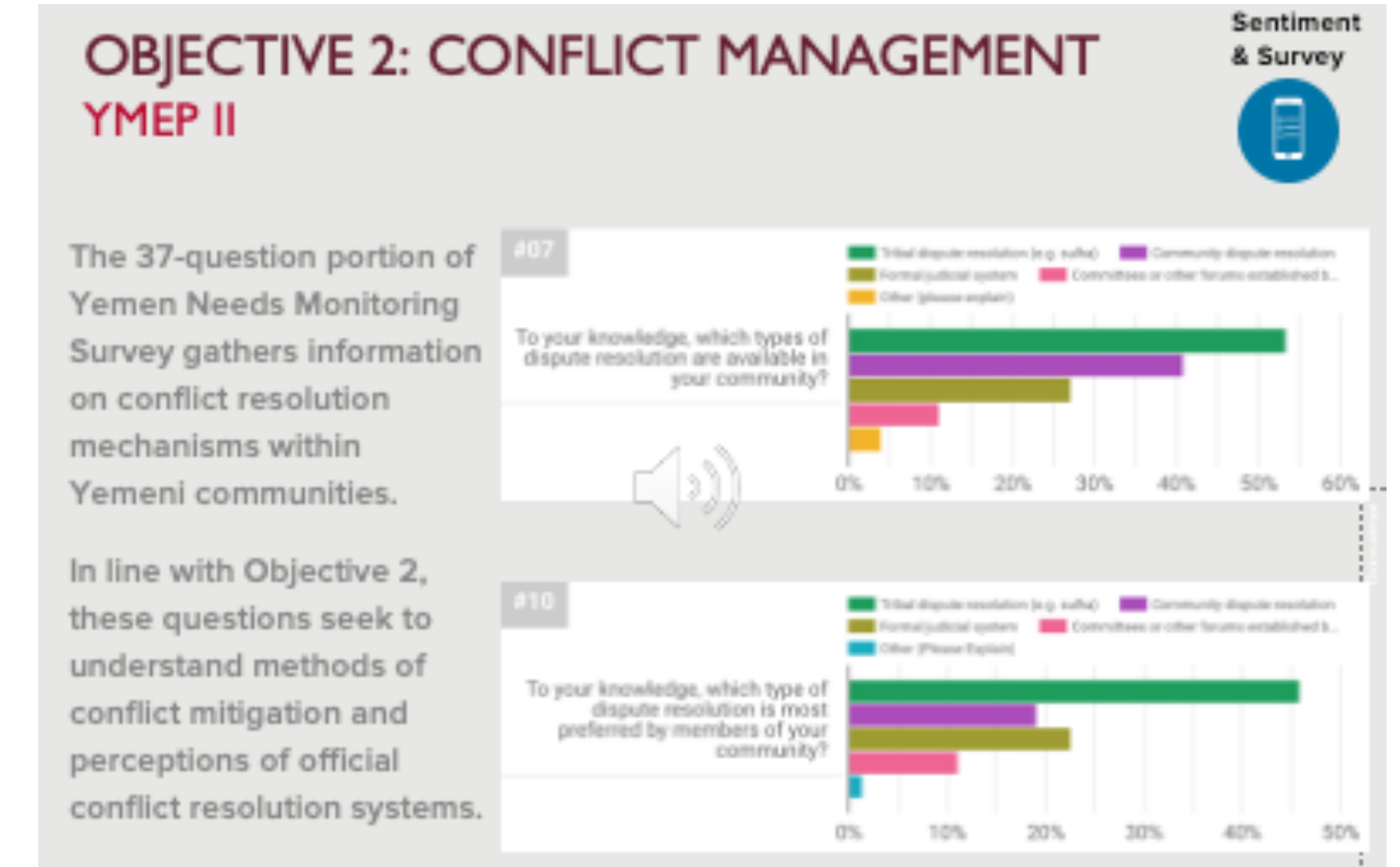
Figure 5: Phase 2 Objective 1 Example

Objective 1 survey includes 19 questions that assess the availability of basic goods and services to the average Yemeni citizen. Graphs represent response aggregates, e.g. 33% of contributors selected the most important need not currently being met in their community is "electricity", with 17% selecting "housing and shelter". In question 3, 26% of contributors selected that they have the most reliable access to "housing and shelter" and 20% selecting "food."

Pilot Phase 2 – Cont.

Figure 6: Phase 2 Objective 2 Example

Objective 2 of the YPA is addressed using 37 questions that are tailored toward conflict management systems and practices, to include perceptions of conflict resolution mechanisms and understanding of mitigation methods. In question 7, contributors were asked which types of dispute resolution are available in their community. 53% of contributors indicated that their communities have tribal dispute resolution mechanisms. In question 10, contributors were asked which types of dispute resolution mechanisms are preferred by members of their communities. 46% of contributors selected that they prefer tribal dispute resolution, and only 19% of contributors selected that they prefer a formal judicial system.

Conclusions

Benefits: The benefits of using a crowd-sourcing platform in Yemen is that it creates the ability to collect large scale community-level data for TPM, context monitoring, and assessments while minimizing the risks associated with deploying enumerators for traditional data collection. Also, because of the sheer volume of data being collected - crowdsourced data can be more reliable as a representative sample of a population than data collected from an enumerator or data collector.

Strengths:
- Safe data collection platform for contributors
- Ability to reach areas unreachable by traditional methods
- Highly applicable for context / perception monitoring
- Ability to target populations or communities (depending on network pool)
- Large volumes of data contribute to reliability
- Real-time data analytics platform
- Photo and GPS location verification of direct observations

Limitations:
- Limited Demographic Diversity – (smart phone users)
- Lack of generalizability
- Limited ability more in-depth data collection – KIIs, FGDs

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Bibliography

Yemen Overview. (n.d.). World Bank. https://www.worldbank.org/en/country/yemen/overview