



NAVIGATING YEMEN'S WARTIME FOOD PIPELINE

Ala Qasem and Brett Scott

November 2017

NAVIGATING YEMEN'S WARTIME FOOD PIPELINE

November 2017

Ala Qasem and Brett Scott

© DEEPROOT CONSULTING, NOVEMBER 2017. ALL RIGHTS RESERVED. NO PART OF THIS PUBLICATION MAY BE REPRODUCED, STORED IN A RETRIEVAL SYSTEM OR TRANSMITTED IN ANY FORM OR BY ANY MEANS ELECTRONIC, MECHANICAL, PHOTOCOPYING, RECORDING OR OTHERWISE, WITHOUT FULL ATTRIBUTION. DEEPROOT WELCOMES AND ENCOURAGES THE UTILIZATION AND DISSEMINATION OF THE MATERIAL INCLUDED IN THIS PUBLICATION.

Photo Credit: Mohamed Al-Sayaghi - Reuters

ABOUT THE AUTHORS

Ala Qasem is DeepRoot's managing partner. He oversees the company's overall research and implementation of projects. He has previously served as the Team Lead for Project Management and Monitoring and Evaluation Support at the Executive Bureau for the Acceleration of Aid Absorption and Support for Policy Reforms. He also served as a technical advisor for the Consensus Committee in the National Dialogue Conference. Ala has a Master of Public Policy from Harvard Kennedy School of Government.

Brett Scott is a project manager and research associate for DeepRoot. He assesses target governorates throughout Yemen to improve stakeholder understanding of the local political and social dynamics relevant to the ongoing peace process, and he writes about the relationship between the humanitarian crisis and various economic, political and military developments. Brett lived in Sana'a from 2014 to 2015, working as an editor and then managing editor of the Yemen Times newspaper, and has done consulting work on the MENA region for firms based in Washington and Abu Dhabi.

“ ABOUT DEEPROOT

DeepRoot is a dynamic consulting firm passionate about Yemen's development. We help international development actors, the private sector, local civil society organizations and the Yemeni Government anchor their interventions in a deep understanding of Yemen's national and local contexts and international best practices.

Our theory is simple: international best practices and experiences are necessary and important but unless they are refined by a deep understanding of the realities in Yemen, they will not produce the results that the country needs. To learn more about DeepRoot, please visit our website at www.deeproot.consulting.

TABLE OF CONTENTS

LIST OF TABLES	5
LIST OF FIGURES	5
LIST OF ABBREVIATIONS	5
EXECUTIVE OVERVIEW	6
KEY FINDINGS	7
RECOMMENDATIONS OVERVIEW	9
AFTERWORD	10
REPORT STRUCTURE	12
METHODOLOGY	13
PART 1: LOCAL DEMAND	14
1.1 BASIC FOOD COMMODITIES IN FOCUS	15
1.2 FOOD AVAILABILITY AND PRICES	18
1.3 OVERVIEW OF MAIN IMPORTERS	19
1.4 DEMAND SIDE ISSUES	20
PART 2: FINANCING FOOD IMPORTS	22
2.1 IMPACT OF THE EXCHANGE RATE ON FOOD PRICES	23
2.2 DIFFICULTIES MAKING INTERNATIONAL TRANSFERS TO SUPPLIERS	23
PART 3: THE SHIPPING PROCESS	25
3.1 FROM SOURCE MARKETS TO YEMENI PORTS	26
3.2 UNVIM AND COALITION INSPECTION MECHANISMS	29
PART 4: YEMENI PORT INFRASTRUCTURE	32
4.1 OVERVIEW OF MAJOR SEA, AIR, AND LAND PORTS	33
4.2 CAPACITY AND ASSESSMENT OF THE PORTS OF ADEN AND HODEIDAH	34
4.3 IMPORTING FOOD COMMODITIES VIA LAND PORTS	37
PART 5: FROM PORT TO LOCAL MARKET	42
5.1 OVERVIEW OF THE ROAD NETWORK	43
5.2 COSTS AND MARKUPS ON THE PORT-TO-SHOP ROUTE	47
PART 6: FROM PORT TO LOCAL MARKET	48
6.1 STRENGTHEN PURCHASING POWER BY RESTORING INCOME AND AID SOURCES	50
6.2 EXPAND FINANCIAL OPTIONS FOR YEMENI IMPORTERS AND TRADERS	51
6.3 ELIMINATE OR REFINE TIME-CONSUMING AND COSTLY SHIPPING PROCEDURES	52
6.4 IMPROVE THE CAPACITY OF THE MAIN PORTS TO HANDLE BASIC COMMODITIES	53
6.5 IMPROVE THE TRANSPORT NETWORK INSIDE YEMEN	54
BIBLIOGRAPHY	56

LIST OF TABLES

Table 1:	Prices of Wheat Flour and a Food Basket in Hadi vs. Houthi/Saleh Territory	19
Table 2:	UNVIM Statistics for the Period May 2016 to August 2017	30
Table 3:	Wheat Grain Imports 2014 – 2016 by Individual Port	37
Table 4:	Rice Imports 2014 – 2016 by Individual Port	38
Table 5:	Wheat Flour Imports 2014 – 2016 by Individual Port	39
Table 6:	Transport Route, Time, Distance, and Cause of Delay from Main Ports to Cities	45
Table 7:	Transport Costs for 20 ft. and 40 ft. Containers Before and During Conflict	47

LIST OF FIGURES

Figure 1:	Quantities of Wheat Grain, Rice, and Wheat Flour Imported 2014 – Jun 2017	17
Figure 2:	Measuring the Time Differences for Pre-War and Current Import Processes	28
Figure 3:	Ports Accounting for 1% or More of Customs Revenue in 2013	33
Figure 4:	Storage and Milling Capacity (MT) of Aden and Hodeidah/Saleef Ports	34
Figure 5:	Total Wheat Grain, Rice, and Wheat Flour Imported 2014 – 2016 by Port (Tonnes)	39
Figure 6:	Yemen's Road Network	43
Figure 7:	Trucks Stuck on an Alternate Route to Taiz Due to Flooding in August 2017	46

LIST OF ABBREVIATIONS

CBY	Central Bank of Yemen
ECRP	Emergency Crisis Response Project (World Bank)
EU	European Union
FAO	Food and Agricultural Organization (United Nations)
FSIS	Food Security Information System
FSTS	Food Security Technical Secretariat (MoPIC)
GAM	Global Acute Malnutrition
IDP	Internally Displaced Person
INGO	International Non-Governmental Organization
IPC	Integrated Food Security Phase Classification (FAO)
MENA	Middle East and North Africa
MFI	Microfinance Institution
MoPIC	Ministry of Planning and International Cooperation (Government of Yemen)
MoPWH	Ministry of Public Works and Highways (Government of Yemen)
OCHA	Office for the Coordination of Humanitarian Affairs (United Nations)
SWF	Social Welfare Fund
TEU	Twenty-Foot Equivalent Unit
UN	United Nations
UNICEF	United Nations Children's Fund
UNVIM	United Nations Verification and Inspection Mechanism
USD	United States Dollar
WFP	World Food Programme
YER	Yemeni Riyal
YSMO	Yemeni Standardization, Metrology and Quality Control Organization

EXECUTIVE OVERVIEW

At the heart of the world's worst humanitarian crisis are the Yemeni families who cannot afford to put enough food on their table. Food insecurity, a state that has befallen 17 million of the country's approximate 28 million inhabitants, has pushed millions to the brink of famine and left many more susceptible to diseases like cholera, scabies, and meningitis. Two and a half years of full-scale war, preceded by localized conflicts that brought the post-2011 transitional process to an indefinite halt, has left the economy in ruins. The country's overreliance on staple food imports to meet its basic needs places it in a precarious position, as port infrastructure is divided between warring parties and suppliers must navigate a complex web of financial and logistical hurdles.

Despite this, staple commodities continue to reach the shelves of local Yemeni markets. Food imports declined following the rapid expansion of the conflict in March 2015, but over the first half of 2017 imports of essential commodities like wheat grain and rice increased, paradoxically even surpassing import levels for the same period in 2014, prior to the outbreak of the civil war. However, most Yemeni households have seen their income dry up due to lost livelihoods and the collapse of the public sector and social welfare network. As a result, households struggle to purchase essential foods, which have been driven further out of range by conflict-related retail-price increases and the devaluation of the Yemeni riyal.

This paper details the impact of the conflict on the food pipeline in Yemen. From the time-consuming inspection process and lack of access to foreign currency, to the unforgiving checkpoint-riddled road network, the challenges facing importers and distributors are assessed with an eye to understanding the factors driving the higher retail costs of basic staples. The capacity of the country's main ports and the recent import trends for staple commodities like wheat grain, rice, and wheat flour is also highlighted, accompanied by a closer look at the Hodeidah Contingency Plan. Finally, a set of recommendations are provided for Yemeni authorities and the international community to remove the barriers most detrimental to the food import process, reduce the key challenges facing importers, and improve the capacity of Yemeni households to meet their food requirements.

KEY FINDINGS

1. No more than 10% of staple foods are domestically produced in Yemen, making the country heavily reliant on imports. The ongoing conflict has intensified and spread the already alarming level of food insecurity experienced in several areas of the country, such that 60% of the population – 17 million people – are now food insecure.
2. Between 2014 and 2016 the amount of wheat grain and rice imported in Yemen declined by 9.45% and 16.81%, respectively, while the amount of wheat flour increased by 472.81%. The sharp increase was to compensate for the drop in wheat grain imports due to the damage sustained by wheat grain storage and processing facilities in Aden and Hodeidah in 2015. Overall, the combined quantity of wheat grain, rice, and wheat flour decreased from 3,647,878 tonnes in 2014 to 3,440,842 tonnes in 2016. However, during the first six months of 2017, imports for all three staples surpassed the monthly average for 2014, reaching 2,319,872 tonnes from January to June 2017. This amounts to an increase of 27.19% compared to 2014, and a 34.84% increase compared to 2016.
3. The retail price of wheat grain increased around 31% between just prior to the conflict's escalation in March 2015 and September 2017. During the same period, the retail price of wheat flour increased 32% and the retail price of rice increased by 85%. A drop in international wheat grain and rice prices coincided with the onset of the conflict, dampening what would have been an even larger retail price increase.
4. Since May 2016, the UN Verification and Inspection Mechanism (UNVIM) has been facilitating commercial shipments to Yemen's Red Sea ports (Hodeidah, Saleef, Mokha and associated oil terminals), and it has taken on average only 36.5 hours to process clearance requests. However, clearance to enter Yemeni waters in practice must also be given by the Coalition, and this introduces considerable unpredictability to the import process, involving delays of up to one month.
5. Retailers in urban areas are able to shelve their stores with basic commodities, but at marked up prices and with a host of added transport and purchasing difficulties. Importers are demanding cash-only sales rather than offering credit, forcing many retailers to close their businesses. At the same time, physical access to local markets remains a challenge for rural residents nationwide, a challenge that may be overlooked by urban-centric data. The nearest market is over 20 km away for 20% of all rural residents and 6-20 km away for another 40%, according to a March IPC report.
6. Importers are facing several challenges purchasing basic commodities, and chief among them is securing foreign currency, a process that has become

more onerous and uncertain following the relocation of the Central Bank of Yemen to Aden in September 2016. The devaluation of the Yemeni riyal, which witnessed an approximate 84% rate increase from 215 YER/USD in 2014 to 396 YER/USD by the end of October 2017, also poses a major difficulty, in addition to restrictions on transferring money to suppliers.

7. The World Food Programme (WFP) is one of the top 10 importers of both wheat grain and rice, but humanitarian food shipments constitute only a small fraction of overall food imports, including staple foods. From January to March 2017, only 3.5% of the 1,306,384 tonnes of food shipped to major Yemeni sea ports (excluding Mukalla) was in the form of humanitarian assistance, demonstrating that commercial imports are not being replaced to any significant degree. At the same time, INGOs are purchasing food commodities from the local market, which could help explain the increase in staple imports during the first half of 2017 despite continued economic deterioration.
8. The bulk of staple goods enter Yemen via the ports of Hodeidah and Saleef in Houthis/Saleh-controlled Hodeidah governorate. In the first half of 2017, Hodeidah and Saleef together accounted for 58% of all key food commodities and 71% of wheat grain brought in at sea ports. From 2014-2016, the combined total of wheat grain, rice, and wheat flour imported through Hodeidah port was 38.19%, followed by Saleef port with 33.77%. Meanwhile, Aden port (Al-Mualla) accounted for 19.01%, and Aden Free Zone 6.89%. Therefore, during these three years 97.86% of all wheat grain, wheat flour, and rice imports entered Yemen through the governorates of Hodeidah and Aden.
9. Land ports accounted for only 1.16% of the total 10,728,442 tonnes of wheat grain, rice, and wheat flour imported from 2014-2016. Of the five land ports that handled at least 0.01% of one of these staples during this period, three have been put out of service during the conflict. The two remaining land ports, Shahan (in Al-Mahra) and Al-Wadea (in Hadhramout), would be unable to absorb a major increase in food imports should Hodeidah port become unusable and/or transport to the north from Aden become restricted.

RECOMMENDATIONS OVERVIEW

Below are the main recommendations for Yemeni authorities to address and for the international community to advocate and provide technical assistance for, or tackle directly. Each recommendation is labeled with the authority or group it is most relevant to, and the recommendations are explained in detail in Part 6 of this report. With the ultimate goal of improving food security across Yemen, priority should be placed on the demand side, as the majority of Yemeni households lack the income or social support to meet even their most basic food requirements. The importers, distributors, and retailers along the supply chain have been able to move sufficient staple commodities to local markets, but the abundance of obstacles in the financing process, shipping process, at Yemeni ports, and on the routes from port to market, have increased costs. Therefore, many of the supply side recommendations pertain to easing the import process in order to reduce delays and associated cost increases.

I. Strengthen Purchasing Power by Restoring Income and Aid Sources

- | | |
|---|------------------|
| • Resume public sector salary payments | Government |
| • Prioritize cash transfers for humanitarian aid | Donors and INGOs |
| • Offer livelihood opportunities and need-based support | Donors and INGOs |

II. Expand Financial Options for Yemeni Importers and Traders

- | | |
|--|---------------------|
| • Ease access to foreign currency for importers | Government & donors |
| • Facilitate international transfers to suppliers | Government & donors |
| • Provide wholesalers and retailers improved access to finance | Government & donors |

III. Eliminate or Refine Time-Consuming and Costly Shipping Procedures

- | | |
|---|--------------|
| • Ensure UNVIM is able to operate according to its stated SOPs. | UN/Coalition |
| • Remove limits on container numbers and transshipping options | Coalition |

IV. Improve the capacity of the main ports to handle basic commodities

- | | |
|--|---------------------|
| • Allow mobile cranes to be installed at Hodeidah port | Coalition |
| • Repair Hodeidah port | Donors & INGOs |
| • Expand the capacity of Aden port | Government & Donors |

V. Improve the Transport Network Inside Yemen

- | | |
|---|--------------|
| • Improve the physical condition of the most vital roads and bridges | Donors & Gov |
| • Unblock the flow of commercial and humanitarian goods to Taiz city | Houthi/Saleh |
| • Conduct a mapping of existing local markets to determine which have closed and to identify the communities most lacking in physical access to markets | INGOs |

AFTERWORD

November 26, 2017

Following the completion of data collection for this report, in November the Saudi-led Coalition imposed a full nationwide blockade and the Yemeni riyal continued to devalue rapidly. These ongoing developments have had an immediate adverse effect on the quantities of staple goods reaching Yemeni market shelves and ultimately locals' ability to purchase them. A brief summary of recent events is provided below.

On November 6, the Coalition announced that in response to a ballistic missile being fired at Riyadh from northern Yemen days earlier, "the Coalition's Command has decided to temporarily close all Yemeni ground, air, and sea ports."¹ The Coalition alleges Iran is manufacturing such missiles and smuggling them to the Houthis. All commercial and humanitarian shipments to Yemen were immediately halted, and the UN's Emergency Relief Coordinator, Mark Lowcock, warned that without the reopening of Yemen's ports the country would face "the largest famine the world has seen for many decades, with millions of victims."²

On November 12, the Coalition announced that within 24 hours it would begin the "reopening of all ports in areas controlled by the Government of Yemen, including Aden, Mukalla, and Mocha, as well as the airports of Aden, Seiyun and Socotra," but not those controlled by the Houthi/Saleh alliance.³ By November 15, UNVIM reported that 29 vessels had been blocked – amounting to around 300,000 MT of food – and UN OCHA said "the lack of commodities entering the country has led to a significant depletion of stocks impacting food prices and people's ability to meet their food needs."⁴

On November 22, the Coalition announced it had "completed a comprehensive review of the inspection and verification procedures used to implement the United Nations Security Council Resolution 2216," and that the following day it would reopen Hodeidah port and Sana'a airport to "receive urgent humanitarian and relief materials," although commercial shipments are not mentioned.⁵ In response to this statement, Oxfam's Country Director in Yemen, Shane Stevenson, said "reopening the ports to aid but not to commercial imports is pitiful bartering with people's lives," and he urged that all ports be opened for

1 "Statement by the Command of the Coalition to Restore Legitimacy in Yemen." Saudi Press Agency, November 6, 2017. <http://www.spa.gov.sa/viewfullstory.php?lang=en&newsid=1684682>.

2 Gladstone, Rick. "Saudi Blockade of Yemen Threatens to Starve Millions, U.N. Says." New York Times, November 8, 2017. <https://www.nytimes.com/2017/11/08/world/middleeast/yemen-saudi-blockade.html?partner=rss&emc=rss>

3 "The Coalition to Restore Legitimacy in Yemen Announces Resuming Humanitarian and Commercial Access to All Ports Under the Control of the Legitimate Government of Yemen. Royal Embassy of Saudi Arabia in Washington, DC, November 12, 2017. <https://www.saudiembassy.net/news/coalition-restore-legitimacy-yemen-announces-resuming-humanitarian-and-commercial-access-all>.

4 "Yemen: Impact of the closure of sea, land and airports on the humanitarian situation." UN OCHA, November 16, 2017. https://reliefweb.int/sites/reliefweb.int/files/resources/Update%20on%20Yemen%20blockade_16%20November%202017_FINAL_ENG%20%281%29.PDF.

5 "Coalition to Restore Legitimacy in Yemen Reopens Critical Infrastructure to Facilitate Humanitarian Aid Distribution." Royal Embassy of Saudi Arabia in Washington, DC, November 22, 2017. <https://www.saudiembassy.net/news/coalition-restore-legitimacy-yemen-re-opens-critical-infrastructure-facilitate-humanitarian-aid>.

both humanitarian and commercial shipments.⁶

DeepRoot recommends that all ports be immediately re-opened for commercial imports, and at the same time the recommendations detailed in this report be implemented in order to address pre-existing restrictions hindering the flow of commercial goods to Yemen.

Meanwhile, in the first half of November the exchange rate collapsed further, reaching 445 YER/USD in many areas of the country, and significantly higher for non-cash transactions. A combination of several factors may be contributing to the rapid currency devaluation. Multiple batches of newly printed riyals arrived to the Central Bank of Yemen in Aden and were distributed to public employees in areas held by the Hadi government, and the influx of cash increased demand for goods which then increased the need for foreign currency to finance imports. At the same time, many public employees in areas administered by the Houthi/Saleh alliance were paid using a voucher system for essential goods, increasing demand for basic foodstuff and therefore foreign currency to increase imports.

The blockade, combined with in-country transport difficulties and the degrading political situation, is leading to increasingly fragmented local markets with varying regional prices for commodities. From September to November alone, DeepRoot estimates⁷ there has been an average 18% price increase for wheat grains, 16-25% price increase for wheat flour, and 18-28% price increase for rice. Further local market fragmentation and price increases are expected should the blockade remain in place much longer, particularly for commercial shipments to Hodeidah and Saleef ports, as quantities of staple commodities in the country's densely populated northwest will deplete and locals with the means to do so will begin hoarding basic foodstuff.

⁶ "Yemen: reopening of ports to aid only is pitiful bartering with people's lives." Oxfam, November 22, 2017. <https://www.oxfam.org/en/pressroom/reactions/yemen-reopening-ports-aid-only-pitiful-bartering-peoples-lives>.

⁷ Based on a survey of importers and wholesalers in Sana'a, Mareb, and Aden.

REPORT STRUCTURE

The structure of this report is visualized below. Parts 1 to 5 each focus on a major component of the food pipeline, following a logical progression that corresponds to the relative importance of each step. This can be understood like a literal pipeline: the root factors impacting the entire network (weak demand and the devaluation of the riyal in this case) are relatively more important than the processes further down the pipeline (like specific ports and transport routes), which affect part of the population more than others. This order of importance is reflected in the five categories of recommendations, which are examined in detail in Part 6.



METHODOLOGY

The information contained in this report comes from a combination of primary and secondary sources. Primary data is from key informant interviews with Yemen Customs Authority employees, shipping agents, importers, port officials, transportation companies, wholesalers, retailers, and consumers. The Yemen Customs Authority also serves as one of the main sources of raw data on import quantities at the various ports and on shares of customs revenues.

A literature review of reports by Yemeni government and UN bodies was also performed. Chief among these secondary sources of data is the Food Security Technical Secretariat (FSTS) of the Yemeni Ministry of Planning and International Cooperation (MoPIC); the Food Security Information System (FSIS), which is funded by the EU and implemented by the FAO and Yemeni MoPIC; the WFP's Vulnerability Assessment and Mapping (VAM) system; and the United Nations Verification and Inspection Mechanism (UNVIM). Select public statements by UN officials, international NGOs, and Yemeni and Coalition authorities are also included to ground the relevant statistics in the political and military reality, particularly in relation to the port of Hodeidah.

PART 1: LOCAL DEMAND



The protracted conflict in Yemen has led to a severe humanitarian emergency, as levels of food insecurity soar and millions are driven closer to famine. According to an Integrated Food Security Phase Classification (IPC) report covering the period March to July 2017, there are over 10 million people in Phase 3 (Crisis) and almost 7 million people in Phase 4 (Emergency), the latter of which is often referred to as being one step away from famine.¹ This amounts to around 17 million food insecure people out of a population of 28 million, or 60% of the total population. The WFP has said that indicative measurements suggest pockets of famine already exist in the hardest-hit districts of Yemen but are being masked by governorate-level data.² The true extent of the food crisis in Yemen is even greater, given that those suffering from malnourishment often face other health complications and are more likely to contract diseases such as cholera.³ One million acutely malnourished children under the age of 5 are currently living in areas with high cholera infection rates, and malnourished children are at least three times more likely to die if they contract cholera due to their weaker immune systems.⁴

1.1 BASIC FOOD COMMODITIES IN FOCUS

This paper focuses on the import and distribution process of staple goods, namely wheat grain, rice, and wheat flour. Wheat grain and rice combined have represented over 10% of all goods imported to Yemen since 2005, and staple food imports comprise the top non-fuel commodities. By examining local demand, outlining which Yemeni importers are involved in the trade of these commodities, tracking the various import and distribution steps that are new or have become more onerous as a result of the conflict, and highlighting the price changes along the supply chain, a clearer picture emerges as to the causes and potential solutions to the current food security crisis. Hodeidah governorate, home to the ports of Hodeidah and Saleef, is where the bulk of staple food imports arrive. According to the Logistics Cluster, in November 2016 Hodeidah accounted for 70% of all imports to Yemen, including fuel and other non-food goods.⁵ These two ports collectively accounted for 85% of wheat grain and 42% of rice imports in 2016, and almost half of the wheat flour that entered Yemen that year was received in Hodeidah port alone. In the first half of 2017, Hodeidah and Saleef accounted for 58% of all key food commodity imports that arrived at Yemeni sea ports: 71% of wheat grain; 14% of rice; and 51% of wheat flour.⁶

1 Yemen Food Security Information System (FSIS) Development Programme. "Yemen: Projected Acute Food Insecurity Situation - March-July 2017." Integrated Food Security Phase Classification (IPC), March 14, 2017. http://fscluster.org/sites/default/files/documents/ipc_yemen_2017_acute_food_insecurity_analysis_communication_brief_final_draft_-14-03-2017.pdf.

2 World Food Programme (WFP). "Emergency Operation Yemen 201068: Immediate, Integrated and Sustained Response to Avert Famine in Yemen" 2017. <http://www1.wfp.org/operations/201068-immediate-integrated-and-sustained-response-avert-famine-yemen>

3 Oxfam. "Yemen: Catastrophic Cholera Crisis." August 2017. https://www.oxfam.org/sites/www.oxfam.org/files/file_attachments/bn-yemen-cholera-160817-en.pdf.

4 Save the Children. "One Million Malnourished Children in Yemen Caught in Cholera 'Hot Zones.'" August 1, 2017. <http://www.savethechildren.org/site/apps/nlnet/content2.aspx?c=8rKLIXMGlpI4E&b=9506653&ct=15002483>.

5 The Logistics Cluster considers Saleef port to be an extension of Hodeidah port. The two ports are about 50km apart in a straight line or 90 km by road, and for the sake of clarity in this report where possible they are mentioned separately.

6 Food Security Technical Secretariat (FSTS). "Monthly Market Monitoring Bulletin," Issue 24, July 2017. [http://www.fsts-gov.com/imgs/EFRLP%20\(FSIS\)%20-FSTS%20Market%20Monitoring%20Bulletin%20-%20July%202017\(1\)_1.pdf](http://www.fsts-gov.com/imgs/EFRLP%20(FSIS)%20-FSTS%20Market%20Monitoring%20Bulletin%20-%20July%202017(1)_1.pdf).

Local food production is estimated to account for, at most, 25% of the food availability in Yemen and less than 10% of staple foods. According to the Global Information and Early Warning System of the Food and Agriculture Organization (FAO), wheat grain is the country's main staple and "the share of domestic wheat grain production in total food utilization in the last ten years is between 5 to 10 percent, depending on the domestic harvest."⁷ There is little financial incentive for farmers to increase their production of wheat grain or rice while alternative cash crops – qat in particular – provide far greater income. For example, prior to the war, cereal production made up only 4.32% of national agriculture income, despite accounting for 58% of all cultivated area in Yemen, while qat, accounting for only 11 percent of cultivated area, made up around half of all agricultural income.⁸ This helps explain why, despite the severe food insecurity facing Yemen and the overall reduction in cultivated area and food production, by early 2017 qat production was estimated to have increased to account for 15% of all agricultural land.⁹

Food insecurity was a major concern in Yemen even prior to the conflict, and therefore there are larger issues underlying the current crisis that are likely to persist after hostilities end. For example, a comprehensive food security survey published by the WFP in 2012 noted that 10 million Yemenis – nearly half of the population at that time – were food insecure, and that high food prices affected nine out of ten Yemenis.¹⁰

The quantities of wheat grain, wheat flour, and rice imported in Yemen from 2014 through to the first half of 2017, according to Yemen Customs Authority data, are shown below. Overall, from 2014 to 2016 the combined quantity of these three staples decreased from 3,647,878 tonnes in 2014 to 3,440,842 tonnes in 2016, for a decrease of 5.68%. However, during the first six months of 2017, total imports for all three commodities surpassed the six-month average for 2014, reaching 2,319,872 tonnes from January to June 2017.¹¹ This amounts to an increase of 27.19% compared to 2014, and a 34.84% increase compared to 2016.

7 Food and Agriculture Organization. "Country Briefs: Yemen." GIEWS - Global Information and Early Warning System, Reference Date: 12-April-2017. <http://www.fao.org/giews/countrybrief/country.jsp?code=YEM>

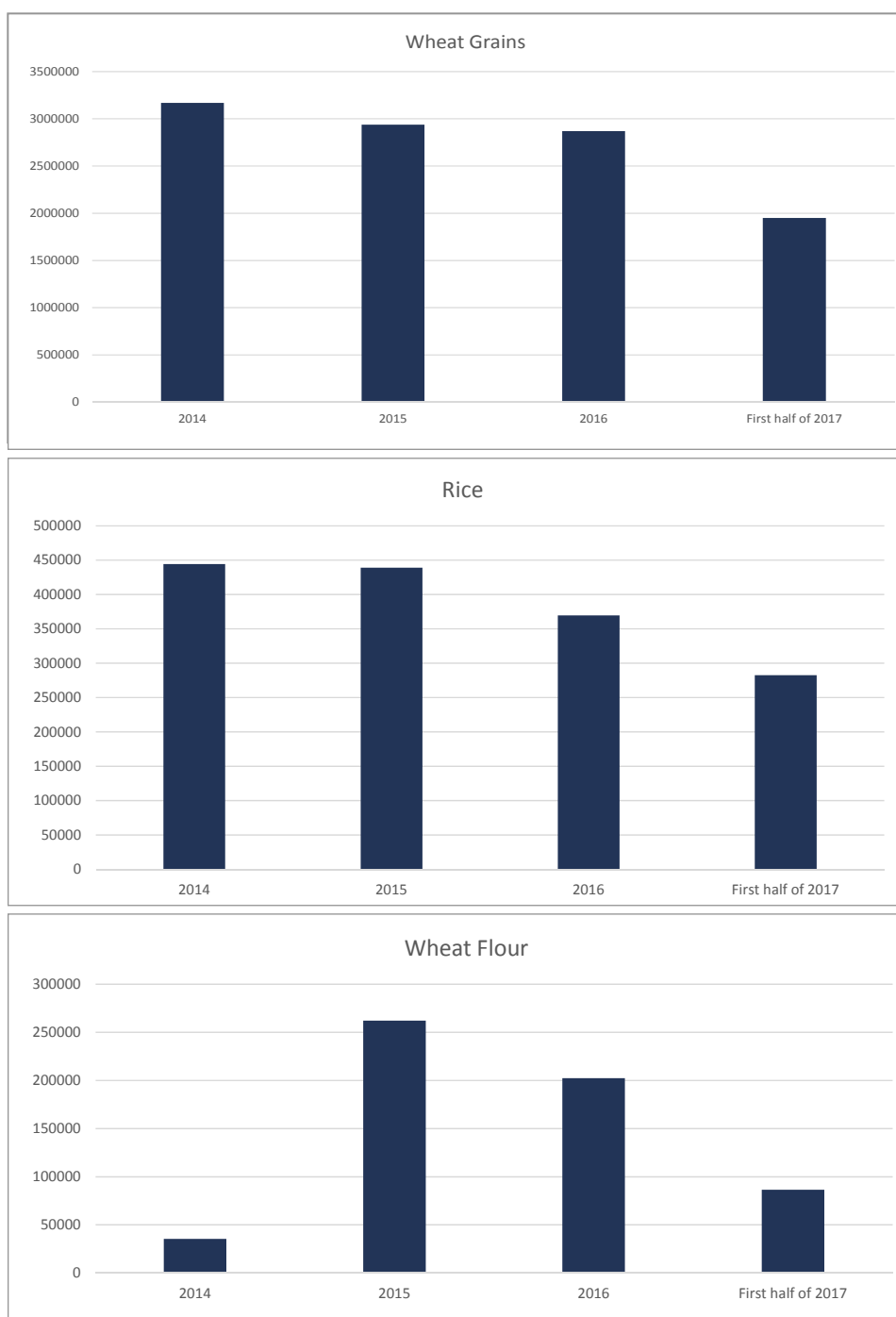
8 Scott, Brett. "Close to the food but not far from famine: Hodeidah governorate in crisis." DeepRoot Consulting, April 30, 2017. <http://www.deeprootconsulting/single-post/2017/04/30/Close-to-the-food-but-not-far-from-famine>

9 Aldaghbasy, Adel. "Khat cultivation fuels food crisis in Yemen." SciDev.Net, January 2017. <http://www.scidev.net/global/farming/news/khat-cultivation-food-crisis-yemen.html>

10 World Food Programme. "Comprehensive Food Security Survey 2012: The State of Food Security and Nutrition in Yemen." 2012. http://documents.wfp.org/stellent/groups/public/documents/ena/wfp247832.pdf?_ga=1.262912651.687705134.1486911247

11 Food Security Technical Secretariat (FSTS). "Monthly Market Monitoring Bulletin," Issue 24, July 2017. [http://www.fsts.gov.com/imgs/EFRLP%20\(FSIS\)%20-FSTS%20Market%20Monitoring%20Bulletin%20-%20July%202017\(1\)_1.pdf](http://www.fsts.gov.com/imgs/EFRLP%20(FSIS)%20-FSTS%20Market%20Monitoring%20Bulletin%20-%20July%202017(1)_1.pdf)

FIGURE 1:
QUANTITIES OF WHEAT GRAIN, RICE, AND WHEAT FLOUR IMPORTED 2014 – JUNE 2017



Between 2014 and 2016, wheat grain imports decreased by 9.45%, rice imports decreased by 16.81%, and wheat flour imports increased by 472.81%. From 2014 to 2015, wheat flour imports spiked 642%, and this was likely the result of importers compensating for the reduced domestic storage and milling capacity of wheat grain in Aden and Hodeidah in 2015. Aden port accounted for 41% of national wheat grain imports in 2014, but dropped to 9% in 2015 as a result of the fighting in Aden over that summer that damaged storage and milling infrastructure and disrupted trade activity. Hodeidah and Saleef ports were also the target of airstrikes during 2015 which impacted storage and milling

operations there. Relative to the half-year average for 2014, during the first half of 2017 rice and wheat flour imports were 27.28% and 389.29% higher, respectively. Compared to the same six-month period in 2016, in the first half of 2017 wheat grain imports increased by 736,424 MT, or 61%, and this is 6.69% higher than the same period in 2014.

It is not clear why imports of these staples increased during the first half of 2017, but it is likely there are many contributing factors. One of the major companies in Aden whose wheat grain storage and milling facilities were damaged in 2015 said by January 2017 they had repaired their silos and milling equipment, allowing them to handle more wheat grain. The FSTS data is not disaggregated by individual port, but the combined quantity of wheat grain imported through the Adeni ports (Free Zone and Al-Mualla) in the first half of 2017 was significantly more than the entirety of 2016. Additionally, whereas in 2016 Mukalla port did not bring in any of these food commodities, in the first half of 2017 over 12% of the total combined wheat grain, wheat flour, rice, sugar, cooking oil, and milk products entered via Mukalla. Hodeidah and Saleef, which continued to bring in the majority of all wheat grain, also experienced an increase in the first half of 2017. In addition to the above port-specific factors, it is therefore likely that demand for these staples increased overall. This could be due to international humanitarian organizations purchasing food from local markets for in-kind distribution, or as a result of (or in anticipation of) public sector salaries being partially distributed (in cash by the Hadi government and via voucher system by the Houthi/Saleh authorities).

1.2 FOOD AVAILABILITY AND PRICES

The crux of the food security issue is that locals cannot afford to purchase food commodities, not that local shelves are empty. As of August 2017, the Food Security Technical Secretariat (FSTS) of the Ministry of Planning and International Cooperation (MoPIC) said “all targeted governorates reported availability of food commodities in the local markets.”¹² Based on price data from the FSTS, the estimated cost increase for the average retail price of wheat grain in Yemen rose 31% from January 2015 (just prior to the conflict’s escalation in March) to September 2017.¹³ For wheat flour, a 32% increase was reported, and the average price increase for different varieties of rice is a staggering 85%.

Below, WFP Market Watch data¹⁴ on the governorate-level prices of wheat flour and a food basket has been divided into governorates nominally under the control of the Hadi government, and those under de-facto control by the

12- Food Security Technical Secretariat (FSTS). “Monthly Market Monitoring Bulletin,” Issue 25, August 2017. <http://www.fsts-gov.com/imgs/FSIS-FSTS%20Market%20Monitoring%20Bulletin%20-%20August%202017%20-.pdf>

13- Food Security Technical Secretariat (FSTS). “Monthly Market Monitoring Bulletin,” Issue 25, September 2017. <http://www.fsts-gov.com/imgs/FSIS-FSTS-EFRLP%20%20Market%20Monitoring%20Bulletin%20-%20September%202017.pdf>

14- World Food Programme. “Yemen Market Watch Report,” Issue No. 16, August 2017. https://docs.wfp.org/api/documents/WFP-0000022394/download/?_ga=2.265942924.2077222959.1505452818-733716788.1499375971

Houthi/Saleh alliance.¹⁵ For the month of August 2017 and the past six months, and for both wheat flour and the food basket, Hadi-controlled governorates on average had slightly higher prices for these commodities.

TABLE 1:
PRICES OF WHEAT FLOUR AND A FOOD BASKET IN HADI VS. HOUTHI/SALEH TERRITORY (YER)

Commodity	Wheat Flour			Food Basket		
	Aug 2017	Past 6 months	Pre-crisis	Aug 2017	Past 6 months	Pre-crisis
All governorates	170.1	187	137	3084	3275	3283
Hadi-Controlled	174	195	137	3197	3400	2383
H/Saleh-Controlled	167	179	137	2971	3150	2383

1.3 OVERVIEW OF MAIN IMPORTERS

PRIVATE SECTOR VS. HUMANITARIAN COMMUNITY SUPPLY

On the importer side, the rice market is very diversified, with over 4,000 importers, and the wheat flour market is fairly diverse, with over 500 importers. In contrast, the wheat grain market is much more concentrated, with only two importers accounting for 70% of total wheat grain imports in 2016, while the top ten importing companies have over 99% of the import market share.



WFP became the fourth largest importer of wheat grain to Yemen in 2016. According to the Yemen Customs Authority, WFP's share in wheat grain imports from 2014-2016 was 5.73%, indicating the UN organization plays a small but important role in the importation of wheat grain to Yemen.

WFP became the fourth largest importer of wheat grain to Yemen in 2016. According to the Yemen Customs Authority, WFP's share in wheat grain imports from 2014-2016 was 5.73%, indicating the UN organization plays a small but important role in the importation of wheat grain to Yemen. The WFP is not a major importer of rice to Yemen, and private local companies made up the remainder of the top 10 importers for wheat grain, wheat flour, and rice. David Beasley, the executive director of the WFP, said in July that nearly 80% of the organization's in-kind food assistance came in through Hodeidah.¹⁶ From the period January to March 2017, only 3.5% of the 1,306,384 tonnes of food

¹⁵ Nearly half of all governorates contain areas of active conflict between the main warring parties. For the purpose of the statistics in Table 1, full or majority control is considered as follows for the Hadi government: Abyan, Aden, Al-Mahra, Hadhramout, Lahj, Socatra, Shabwa, Al-Dhalea, Al-Jawf, Marib, Taiz; and for the Houthi/Saleh authorities: Hodeidah, Al-Mahweet, Amran, Dhamar, Hajjah, Ibb, Raymah, Sa'ada, Sana'a, Sana'a City, Al-Baydha.

¹⁶ Beasley, David. "The Four Famines: Root Causes and a Multilateral Action Plan." Briefing to the Senate Foreign Relations Subcommittee on Multilateral International Development, Multilateral Institutions, and International Economic, Energy and Environmental Policy. July 18, 2017. https://www.foreign.senate.gov/imo/media/doc/071817_Beasley_Testimony.pdf.

shipped to Yemen was in the form of humanitarian assistance.¹⁷ Based on the current level of humanitarian food shipments to Yemen and the technical and financial limitations that would inhibit a significant scale-up, it is unlikely that humanitarian food shipments could replace commercial ones in the foreseeable future.

It should be noted that many international NGOs are buying food items from the local market, and this may help to in part explain why the quantities of imports reaching Yemen have been increasing despite the continued dire economic conditions. In other words, the increase in staple imports during the first half of 2017 should not necessarily be taken to mean that Yemenis have become more capable of purchasing staple goods, but rather humanitarian actors could be a contributing factor to this increase.

1.4 DEMAND SIDE ISSUES

LACK OF INCOME SOURCES & WEAK PURCHASING POWER

The WFP, referencing the increased availability of food over the first half of 2017, cautioned the following: “While the observed improvement in the availability of food items in the market would help those who have the economic capacity to buy, it has little impact for millions of severely food insecure Yemeni households who have lost their income sources and are relying on emergency food assistance.”¹⁸ The loss of livelihoods and income sources is fundamental to the food crisis, and two major lost sources are government salaries and Social Welfare Fund (SWF) transfers. Civil service employees nationwide have largely gone unpaid since the relocation of the CBY to Aden in September 2016, leaving 1.2 million civil and military personnel and their 6.9 million dependents – amounting to over a quarter of the population – without a vital source of income. The SWF transfers, which stopped in 2014, covered a similar number of people: 1.5 million recipients, amounting to a total of more than 8 million direct and indirect beneficiaries. Assuming no household in Yemen contains both a government employee and a SWF recipient, this amounts to 14.9 million direct and indirect beneficiaries, meaning that slightly more than half of the total population benefited from one of these two sources. As explained in this report’s Recommendations section, SWF transfers began a gradual renewal in August 2017, and the resumption of public sector salary payments is a core component of UN Special Envoy Ismail Ould Cheikh Ahmed’s ongoing peace proposals.

At the same time, 60% of households consider their main source of income to be crop and livestock production, yet in 2016 cultivated areas nationwide were reduced 38% due to increased costs and other conflict-related challenges.¹⁹

¹⁷ The Logistics Cluster snapshot data only includes major seaports, and excludes Mukalla port. However, the Logistics Cluster estimates 70-80% of humanitarian assistance enters through Hodeidah. Source: Logistics Cluster. “Snapshot on shipping, food and fuel imports.” March 2017. <http://reliefweb.int/sites/reliefweb.int/files/resources/yemensnapshotmar2017.pdf>.

¹⁸ Ibid. WFP, “Yemen Market Watch Report,” Issue No. 16, August 2017

¹⁹ Ibid. IPC Report, March 2016.

Relatedly, the Red Sea coastal governorates of Hodeidah and Taiz have seen a major disruption to the livelihoods of fishermen, whose boats and equipment have been destroyed in the fighting, helping to explain why these areas have such high rates of malnutrition and food insecurity. More broadly, it follows that millions of these small-scale fishermen, wage-labor farmers, and SWF recipients were already amongst the most impoverished Yemenis, and that they make up a sizeable portion of the most food insecure people today.

It is not only the higher retail cost of food commodities and weak purchasing power that makes sustaining an adequate level of nutrition difficult for many Yemenis. The cost of fuel and therefore transportation can make travel to local markets difficult, especially when there are fuel shortages, and despite the general availability of staples, fighting can cut communities off from local markets. Physical access to markets poses a major difficulty for many rural residents. According to the latest IPC report,²⁰ physical access to markets is one of the primary limitations facing rural communities, especially those in close proximity to areas of fighting. It is estimated that over half of all rural households do not have a market in their area, even though over 70% of rural communities rely on local markets to meet their daily food requirements. The nearest market is 6-20 km away for 40% of rural households and over 20 km for 20% of rural households.

20 Yemen Food Security Information System (FSIS) Development Programme. "Yemen: Projected Acute Food Insecurity Situation - March-July 2017." Integrated Food Security Phase Classification (IPC), March 14, 2017. http://fscluster.org/sites/default/files/documents/ipc_yemen_2017_acute_food_insecurity_analysis_communication_brief_final_draft_-14-03-2017.pdf

PART 2: FINANCING FOOD IMPORTS



2.1 IMPACT OF THE EXCHANGE RATE ON FOOD PRICES

OFFICIAL VS. BLACK MARKET, AND FLOATING RATE

The devaluation of the Yemeni rial has been a major financial burden for importers. To buy foreign goods, most Yemeni importers currently purchase US dollars from banks or currency exchange companies at a market rate of approximately 400 YER/USD as of the end of October. The Central Bank of Yemen (CBY) used to supply staple commodity importers – handling wheat grain, rice, and sugar – with US dollars at a significantly lower fixed exchange rate. However, this practice stopped when the CBY was relocated to Aden in September 2016 (support for sugar imports was stopped in February 2016), with the minor exception of a small number of importers who continued to buy US dollars from the Sana’a CBY at the 250 YER/USD rate until July 2017.

During that time, on an irregular and ad-hoc basis, the Sana’a CBY was providing some importers with equivalent USD as a credit memo once they deposited YER cash in their bank’s account at the CBY. This occurred after they had already purchased foreign currency at the market rate and then sold the wheat grain or rice to the local market for YER. The dollars credited by the CBY were not physically deposited and the importer could not withdraw or transfer the amount. Given there was no guarantee they could ever cash-in the money in their USD accounts at the CBY, not all banks accepted this practice. However, the large disparity between the fixed and market rate appears to have incentivized some banks to take on the risk.

The official exchange rate was 215 YER/USD until March 2016 and 250 YER/USD until August 2017, when the Aden-based CBY instructed Yemeni banks to use the market rate. At the end of October 2017, the CBY issued a circular placing the reference rate at 396 YER/USD, but in early November the rate continued to deteriorate rapidly and as of this writing was estimated to be trading at a rate of around 430 YER/USD.¹ However, without CBY support for importers, the floating of the rial has not had an immediate impact on importers because, with the minor exception mentioned above, they were purchasing US dollars at the market rate since August 2016 anyways.

Compared to the 2014 exchange rate of 215 YER/USD, the October CBY reference of 396 USD/YER marks an 84% increase. This is an immense financial burden for importers, who pass most of it to the consumers, and the real increase is higher still due to the associated costs of securing the large quantities of foreign currency – a process that often takes multiple days of negotiations – in addition to the costs associated with transferring the payments to international suppliers, which can run up to 10% via foreign exchange companies.

¹ Based on interviews with financial sector employees in Sana’a and Aden, November 2017.

2.2 DIFFICULTIES MAKING INTERNATIONAL TRANSFERS TO SUPPLIERS

Prior to the conflict, all import transactions were conducted entirely through banks. However, in part due to reduced trust in the banking sector since the start of the conflict and the difficulties securing foreign currency, there has been a trend toward using currency exchange companies to pay international suppliers. Both banks and exchange companies use the foreign currency fed into their international accounts by remittances and international NGO transfers and, while comprehensive statistics are lacking, it appears their use for international transfers by importers is now split fairly evenly. Many traders have also opted to use exchange companies because tightened restrictions on dealing with Yemeni banks have made it difficult for them to transfer currency through local banks. These traders would then use exchange companies to transfer currency to their international accounts or directly to the supplier. However, exchange companies charge high fees for transfer services, and they can introduce added risks and delays.

Another challenge many importers have in financing their food imports is that they are required to secure the total foreign currency amount of their shipment and deposit it in advance at their bank. Prior to the conflict importers were able to deposit a certain percentage of the total Letter of Credit (L/C) value or access other facilities from their banks. However, for L/C payments, importers must now deposit the full amount before their bank will establish the L/C. The severe liquidity crisis facing the entire market in Yemen makes this difficult for many importers and is compounded by the requirement, imposed during the war by customs authorities in Hodeidah and Aden, for importers to pay customs duties in cash.

This burden on importers is reflected down the supply chain, such that with few exceptions importers require wholesalers and retailers to pay them in advance, rather than offer credit terms as they did in the past. In response, wholesalers have trended toward requiring their retail clients to also pay in advance, pushing many cash-strapped Yemenis to close their small businesses. Related to this is the potential for humanitarian assistance to distort local market mechanisms when provided in-kind rather than in cash transfers. A number of retailers told DeepRoot that some of their customers have stopped buying from them – even if they can afford to – because they receive in-kind items from humanitarian organizations.

PART 3: THE SHIPPING PROCESS



3.1 FROM SOURCE MARKETS TO YEMENI PORTS

INSPECTION MECHANISMS AND COSTLY DELAYS

Greater specificity in describing the impediments to food import and distribution could help narrow in on the main causes of delays and associated cost increases along the supply chain. Prior to November 2017, the Coalition seldom blocked imports to Yemen outright, but for many steps in the import process the time and costs required increased, in some cases exorbitantly, primarily due to clearance delays, screening, and restrictions imposed by the Coalition. For importers, shipping costs for wheat grain increased from \$17-20 per tonne prior to the conflict to \$27-35 per tonne currently. For rice, shipping costs increased 100%, from around \$1,000-1,200 to \$2,000-2,400 per 20 ft. container.

Several new steps have arisen since the escalation of the conflict in March 2015. One is that for vessels heading to Hodeidah or Saleef ports, shipping companies have to send a clearance request to UNVIM. For bulk shipments, based on the shipping company's clearance request, UNVIM decides whether inspection is required or not, and if required, the vessels are instructed to go to an agreed location in international waters for inspection. For all container shipments to Hodeidah, screening takes place in a transit port (either Salalah Port in Oman, Jabal Ali in Dubai, Jeddah Port, or Djibouti). Even prior to the conflict, Hodeidah could only receive ships carrying a maximum 1,700 containers, and therefore liners would stop in a transit port for transshipment to smaller ships. The way this has changed is that now such shipments are screened at the transit port and the time required varies considerably, from one week up to two months, increasing costs. Additionally, the Coalition has on multiple occasions limited such transshipments to only Jeddah port, which causes longer delays and introduces greater uncertainty to the process. For containerized or chartered vessels heading to Aden, the manifest goes to the Yemeni Ministry of Transport in Riyadh.

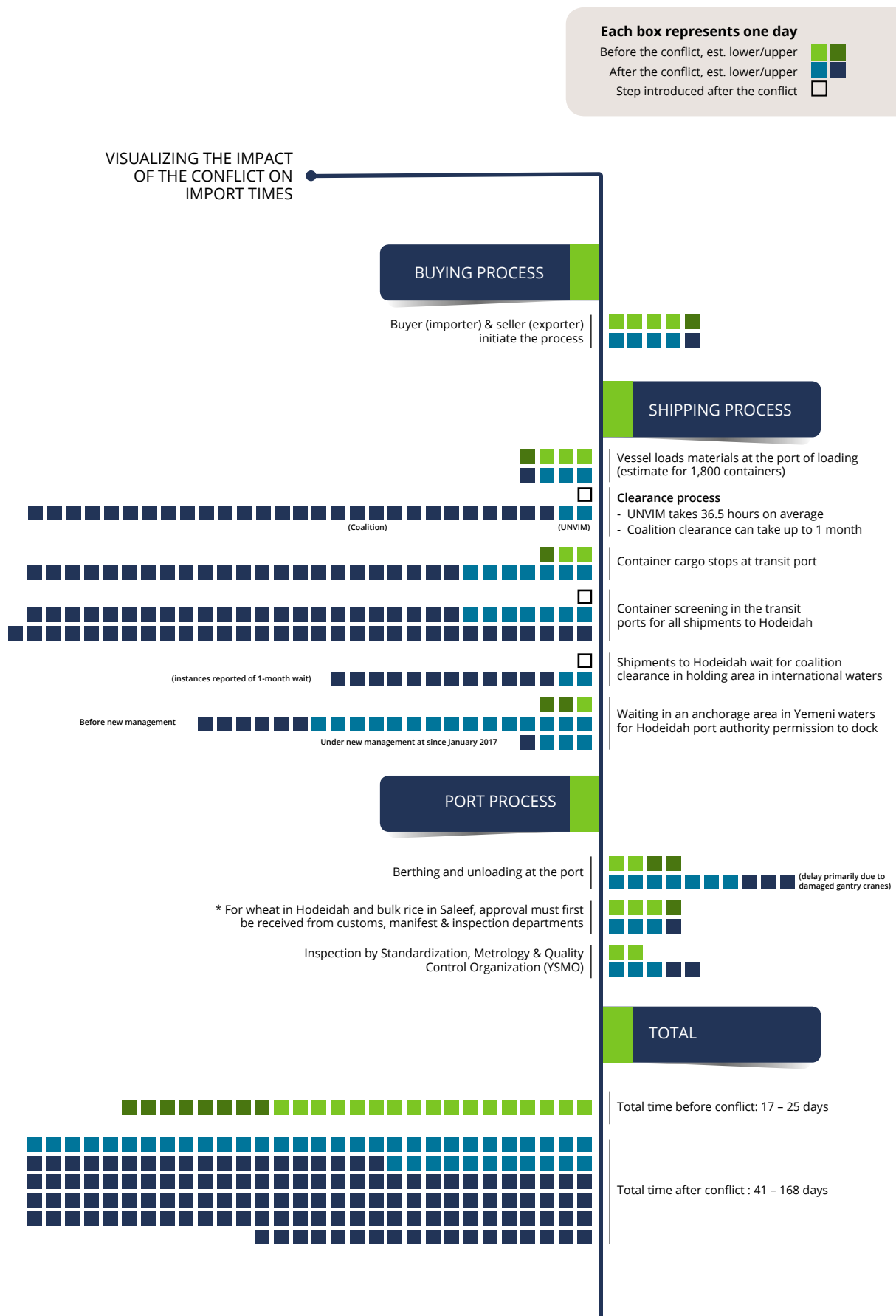
Another new step is that vessels destined for Hodeidah, after leaving the transit port, must move to a holding area and anchor in international waters while they await permission from the Coalition to enter Yemeni waters. Shipping lines apply charges for every day of delay in discharging ships and, depending on the Coalition's discretion, the delay waiting for clearance can take as little as 2-3 days or up to 2 weeks. In some cases, the Coalition has ordered vessels back into international waters for further inspection after they had already progressed along the import process, thus increasing the delay substantially. For bulk shipments that UNVIM orders to be screened in international waters, UNVIM does so with x-ray machines and if deemed necessary, the vessel can be asked to move to Djibouti for further inspection. Even if UNVIM does not order screening, there have been instances where vessels have been forced to wait in international waters because UNVIM did not hear back from the Coalition and therefore could not give clearance to the shipping company.

Following clearance from the coalition, vessels wait to receive approval from Yemeni port authorities to enter Yemeni waters and approach the dock and berth. Although this is not a new step, prior to the conflict this took 1-3 days depending on time slots, but after the war began it reached up to 2-3 weeks in Hodeidah port. The time required for this step is dependent on the efficiency of the local port authorities. In 2016, it used to take 2-3 weeks for berthing in Hodeidah, but following a change in management it now takes 3-4 days maximum, assuming no other delays.

Unloading cargo used to take 2-4 days depending on the unloading speed and congestion in the port. In Hodeidah, this now takes 7-10 days, primarily because all 5 cranes were damaged and vessels have to use their own cranes, which are smaller and slower.

Figure 2 below indicates the estimated time various steps in the import process took before and after the conflict began. Each box represents 1 day and, for both before and after, the lighter shade denotes the lower time estimate and the darker shade the upper estimate. The total estimated time before the conflict (17 to 25 days) and after the conflict (41 to 168) refers to the sum of each step considered in isolation, which does not equate to the total time for the import process from beginning to end but rather serves as a more accurate way to compare before and after given the available data. As the figure shows, the longest delays experienced are due to clearance requests and waiting for Coalition approval, container cargo stops at a transit port, and screenings for containers destined for Hodeidah, at the transit port.

FIGURE 2:
MEASURING THE TIME DIFFERENCES FOR PRE-WAR AND CURRENT IMPORT PROCESSES



3.2 UNVIM AND COALITION INSPECTION MECHANISMS

COMPARISON BETWEEN IMPACT ON TRANSPORTATION COSTS AND DURATION

Since the UN Verification and Inspection Mechanism (UNVIM) became operational in May 2016, all vessels destined for the ports of Hodeidah and Saleef require screening and, as explained above, this process varies depending on whether the shipment is bulk/break-bulk or containerized. For several reasons, UNVIM is not operating as optimally as it could or perhaps as it has been portrayed. For example, although the average turnaround time for UNVIM to review the documents and issue or deny clearance is estimated to be 36.5 hours based on data from May 2016 to August 2017, in reality this is not the amount of time required for the full clearance to be issued. The reason for the disparity is that while the original design and standard operating procedure of UNVIM is to merely “inform” the Coalition of its decision, in reality due to the Coalition’s control over the waters the UNVIM clearance is not effective until the Coalition also gives approval. Therefore, in addition to the average 36.5 hours it takes for UNVIM clearance, ships must wait for Coalition approval, a highly variable process that can take anywhere from 4 days to several weeks.

The following table shows that between May 2016 and August 2017 a total of 657 requests for clearance were made. Of these, 571 certificates of clearance were issued (87%), and of the remainder most appear to have been withdrawn or otherwise not followed through with by the requesting party. During the same period, UNVIM and UN Member States carried out 41 inspections, amounting to an inspection rate for cleared vessels of just over 7%, or almost 1 in 15. In the initial months UNVIM stated 10 clearances were revoked, but subsequent monthly snapshots did not include explicit information on this statistic.

TABLE 2:
UNVIM STATISTICS FOR THE PERIOD MAY 2016 TO AUGUST 2017

Month	Total requests for clearance	Total vessels cleared	Vessels Inspected by UNVIM + Member State	Clearances revoked	Time to clearance (hrs)
16-May	50	42	4		40
16-Jun	46	37	4	4	38
16-Jul	53	47	3	2	32
16-Aug	53	51	2	4	37
16-Sep	40	27	6		37
16-Oct	31	46	0		43
16-Nov	45	40	3		42
16-Dec	34	33	2		37
17-Jan	40	29	0		40
17-Feb	38	27	0		34
17-Mar	41	34	1 + 2		31
17-Apr	35	30	0 + 1		30
17-May	40	37	1 + 1		39
17-Jun	31	23	6		45
17-Jul	38	35	1		25
17-Aug	42	33	1 + 3		34
Monthly average	41.06	35.69	2.57		36.5
Total (16 months)	657	571	41	10	

In the months following the conflict's escalation in March 2015, the Coalition restricted transshipments to King Abdullah port in Jeddah, Saudi Arabia. Thousands of containers became stuck there for over 4 months as they awaited inspection. The Coalition allowed transshipments to occur at Salalah port starting at the beginning of 2016, greatly reducing delays and encouraging shipping lines to service Yemeni ports. However, for reasons that remain unclear, in January 2017 King Abdullah port was again made the only option available for transshipments, re-introducing long delays and discouraging trade to Hodeidah. A number of shipping lines suspended shipments to Hodeidah as they were not willing to incur the delays and costs associated with transshipment in King Abdullah port. In order to ease inspections, the Coalition has also limited the number of containers any vessel destined for Hodeidah can carry to 700, less than half of the 1,700 containers per vessel the port is capable of handling.

In a statement on August 21, Stephen O'Brien, then Under-Secretary-General for Humanitarian Affairs and Emergency Relief Coordinator, said that restrictions on key commercial imports is an obstacle to humanitarian work in Yemen, "as these restrictions play a key role in pushing humanitarian needs beyond existing

response capacity.”¹ O’Brien said that while UNVIM was established specifically to facilitate imports, the Hadi government and Coalition sometimes bypass UNVIM and unilaterally deny or delay the passage of vessels carrying essential goods to Yemen. “These fluctuating restrictions have had a chilling effect on the willingness of some commercial vessels to serve Hodeidah port,” he said, adding that it is “the most efficient port to reach the majority of Yemenis who live in the north, especially those who are most vulnerable and in dire, urgent need.”

Given the complexities of the term “blockade,” both in a legal sense and in common usage in media coverage of the conflict, the term is not used in this report to describe the Coalition’s restrictions on vessels destined for Red Sea ports since UNVIM was made operational and prior to November 6, 2017, when an official blockade was imposed nationwide (see Afterword for more details). However, it should be noted that several international NGOs and UN officials have characterized it as such. For example, the Special Rapporteur on the Right to Food, Hilal Elver, and the Special Rapporteur on the negative impact of unilateral coercive measures on the enjoyment of human rights, Idriss Jazairy, both of whom are experts appointed by the UN Human Rights Council, called for the “blockade” to be lifted in April 2017.² Elver said the blockade and delays in granting permits has caused shortages of medicine, reduced food imports, and “the blockade of coastal areas are also depriving communities of their fishing livelihoods, which is the only way to feed themselves.” In March 2017, Grant Pritchard, Interim Country Director for Save the Children in Yemen, said months-long delays by the Coalition in granting permission for medical supplies to reach Hodeidah were putting hundreds of thousands of people at greater risk.³ “It is outrageous that Yemen’s largest port continues to face a de-facto blockade as millions of Yemenis face starvation,” he said.

1 O’Brien, Stephen. “Under-Secretary-General For Humanitarian Affairs and Emergency Relief Coordinator, Stephen O’Brien Statement to Security Council Arrria-Formula Meeting on Yemen.” UN OCHA, August 21, 2017. <https://goo.gl/SEpV4T>

2 Office of the High Commissioner for Human Rights (OHCHR). “Halt Yemen conflict now to save generation from famine and cut ‘alarming’ child mortality - UN experts.” April 25, 2017. <http://www.ohchr.org/FR/NewsEvents/Pages/DisplayNews.aspx?NewsID=21528&LangID=E>

3 Save the Children. “Saudi Delays to Yemen Aid Killing Children as Famine Loom – Save the Children.” March 1, 2017. <https://www.savethechildren.net/article/saudi-delays-yemen-aid-killing-children-famine-looms-save-children>

PART 4: YEMENI PORT INFRASTRUCTURE

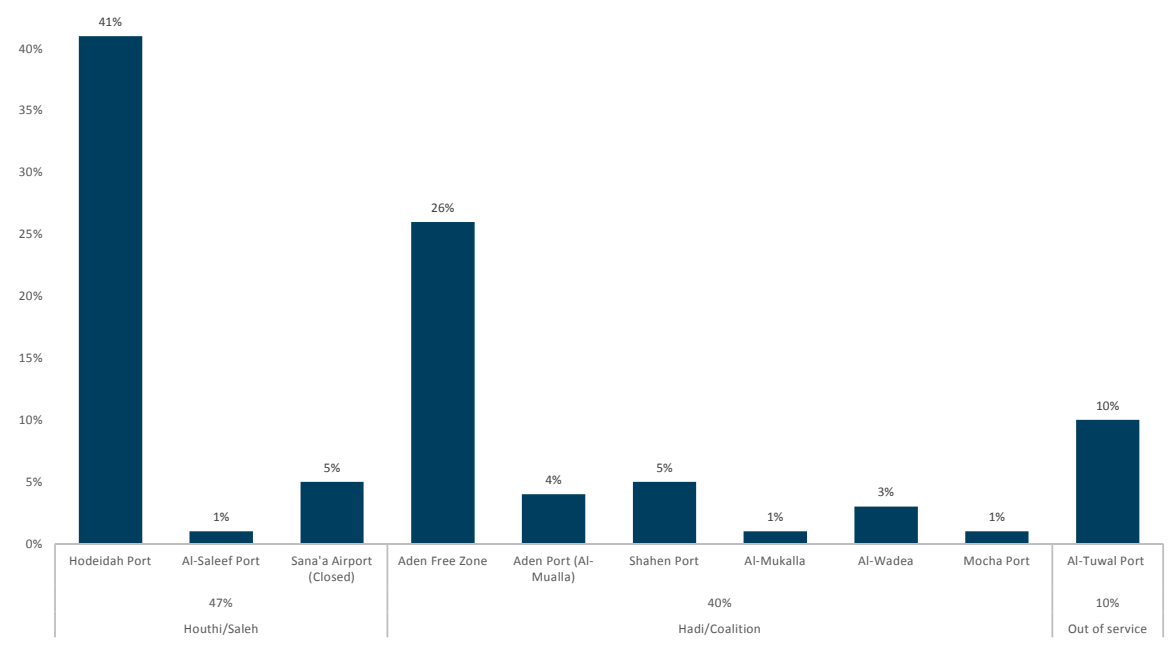


4.1 OVERVIEW OF MAJOR SEA, AIR, AND LAND PORTS

The battle over key ports has been ongoing for three years, as both sides have sought to gain or maintain access to customs revenue and critical imports such as fuel and food. In September 2014, the Houthis gained effective control over Sana'a airport, before quickly expanding to Hodeidah the following month and controlling the port city. By early 2015, the Houthi/Saleh alliance expanded north, to control the land ports of Al-Tuwal in Hajjah governorate and Al-Wadea in Hadhramout, and south to control Al-Mocha in Taiz. Altogether this put the Houthi/Saleh alliance in control of ports accounting for 61% of customs revenue in 2013, indicative of their relative importance to trade.¹ As fighting raged in Aden between March to July 2015, the Adeni ports of Al-Mualla and Aden Free Zone became unusable and Al-Mukalla port in Hadhramout was taken by AQAP, leaving only Shahren port in Al-Mahra in the hands of the Hadi government.

However, as of October 2017 the Hadi government and Coalition had regained control over the ports of Aden Free Zone, Al-Mualla, Shahren, Al-Wadea, Mocha, and Al-Mukalla, which collectively generated 40% of pre-war customs revenue. The Houthi/Saleh alliance controls the ports of Hodeidah, Saleef, and Sana'a (closed for over one year), which collectively comprised 47% of customs revenue. Meanwhile, Al-Tuwal, the most important land port through which a third of Yemeni exports used to transit,² has been put out of service due to destruction from airstrikes and ongoing clashes. The figure below shows the current balance of control over the main customs-generating ports.

FIGURE 3:
PORTS ACCOUNTING FOR 1% OR MORE OF CUSTOMS REVENUE IN 2013



1 Othman, Maher. "State Institutions During Conflict: Yemen Customs Authority." DeepRoot Consulting. October 2016. http://docs.wixstatic.com/ugd/df2b40_44cb4dacab5e456eb5c1b1a8803f7f42.pdf

2 Yemen Customs Authority. Annual Report, 2013

Of these 10 ports, all but Sana'a airport bring in staple food imports. The vast majority come through the four sea ports in Hodeidah governorate (Hodeidah and Saleef) and Aden (Al-Mualla and Free Zone). These sea ports are examined in greater detail in the section below, followed by a discussion of the major land ports (Al-Tuwal, Al-Wadea, and Shahren) and the challenges they would face compensating for a reduction in imports to the main sea ports, namely Hodeidah and Saleef.

4.2 CAPACITY AND ASSESSMENT OF THE PORTS OF ADEN AND HODEIDAH

Aden port (both Mualla and the Free Zone) did not sustain infrastructural damage during the war despite the fierce fighting that took place in the city in 2015. Saleef port, which primarily handles bulk wheat grain, has also been spared from any conflict-related infrastructural damage, although grain silos near both Aden and Saleef ports experienced some damage. Hodeidah port, on the other hand, has experienced significant damage from Coalition airstrikes, which have had a direct and immediate impact on its operations. The 5 large gantry cranes at the port were damaged beyond use and, without heavy equipment to move the idle cranes, they continue to take up valuable berths at the port. Ships must now use their own cranes to offload cargo, which are smaller and require more time. For example, a single large gantry crane can offload 18 containers per hour, while the smaller on-board cranes (usually no more than 2 cranes per ship) can each only do 6 moves per hour. In addition to the gantry cranes, other equipment, berths, and multiple warehouses were damaged by airstrikes. As explained in Part 3, the damage to Hodeidah port – especially to the gantry cranes – has increased the unloading time by about a week, thereby increasing the overall time it takes food imports to reach Yemeni shelves.

The ports of Hodeidah and Saleef collectively received around 85% of all wheat grain imports in 2016, and 59% prior to the conflict. The total storage capacity in Hodeidah, 550,000 MT, is 62% of the country's total storage capacity, and the milling capacity in Hodeidah accounts for 51% of the national capacity. The following figure shows the milling and storage capacity in Aden and Hodeidah:

FIGURE 4:
STORAGE AND MILLING CAPACITY (MT) OF ADEN AND HODEIDAH/SALEEF PORTS (Source: DeepRoot calculations)



In 2014, the year before the conflict reached the south, Aden port received 1,154 vessels and handled 296,035 containers (TEUs).³ These numbers plummeted in 2015, when fighting raged in Aden, and in 2016 the number of containers handled rebounded to 268,208, via 482 vessels. In contrast, in 2014 Hodeidah port received 1,364 vessels and handled 312,632 containers, and did not experience a similar rebound after a steep decline in 2015. Hodeidah received 534 vessels in 2016, and handled 145,076 containers⁴.

4.2.1 ASSESSMENT OF THE HODEIDAH CONTINGENCY PLAN

In March 2017 the Logistics Cluster published a contingency plan for imports to Yemen should operations at the port of Hodeidah become severely impeded or halt altogether. The Hodeidah Contingency Plan presents Aden port as the main preferred alternative to Hodeidah. Though acknowledging if all cargo is diverted to Aden there is a concrete risk of congestion that would result in considerable delays and high demurrage costs, the Plan states that Aden port can accommodate 20,000 twenty-foot equivalent units (TEUs) and has a current utilization of 40%. The findings presented in this paper indicate that while Aden port is fundamentally important for food imports in Yemen, it can never fully replace Hodeidah and Saleef ports.



The physical storage and milling capacity in Hodeidah cannot be relocated, and therefore the majority of Yemen's total capacity to store and mill wheat grain would be lost should operations be shut down in Hodeidah

The physical storage and milling capacity in Hodeidah cannot be relocated, and therefore the majority of Yemen's total capacity to store and mill wheat grain would be lost should operations be shut down in Hodeidah. This lost capacity could be partly offset by importing more wheat flour through Aden and overland, although doing so would introduce new logistical and market challenges explored in the next section. Furthermore, even at Hodeidah's operating rate for 2016 (when it received 145,076 containers), the port capacity in Aden would already have to be increased by around 55% to compensate for the reduction in operations at Hodeidah port.

Apart from the port capacity, there would also be several hurdles to overcome with regards to transporting goods from Aden port to the rest of Yemen. The Heavy Transport Union in Aden has a monopoly over the trucks permitted to enter and transport goods from the Aden port. Prices set by the union are seen by many importers as being inflated, and they are higher than at Hodeidah

3 Yemen Gulf of Aden Ports Corporation website: <http://www.portofaden.net/AStatistics.aspx>

4 Yemen Red Sea Ports Corporation website: <http://yrspc.net/index.php/statistics/statistics-minaoualhdidh>

port. Furthermore, the road network from Aden to the north presents multiple challenges: The main road through Taiz has become inaccessible due to ongoing hostilities, while the road through Al-Dhalea, the only other main route, contains multiple checkpoints maintained by various militias. It also suffers from multiple infrastructure bottlenecks causing delays that can last up to several days for large transport trucks. Both of these main routes travel through the landlocked governorate of Dhamar, which has a customs checkpoint run by the Houthi/Saleh de-facto authorities. There, customs papers for shipments from Aden are checked again, introducing additional costs and delays that can last several days, a bottleneck that would likely worsen should this route see more cargo traffic.

It is worth noting that the Hodeidah issue has become highly politicized. The Hadi government and Coalition have sought to categorize Hodeidah port as being a legitimate military target as long as it is managed by authorities controlled by Houthi/Saleh forces. The port has also become central to ongoing political negotiations mediated by UN Special Envoy Ould Cheikh Ahmed. Corresponding with the launch of Operation Golden Spear⁵ at the beginning of 2017, Saudi Arabia has increasingly claimed weapons are being smuggled through the port and that state revenue is being squandered by Houthi/Saleh port authorities. The Hadi government and Coalition have positioned Aden as an alternative. For example, the Yemen Gulf of Aden Ports Corporation in March released a statement saying “the outstanding ability of Aden Port to receive all types of ships, without exception, makes it the only port that can meet the needs of the state in the next phase [of national development] as it has the storage space and operational capacity to accommodate all Yemen’s trade and the relief and reconstruction activities.”⁶

In response to claims by the Hadi government and Coalition, UN officials have repeatedly stressed there is no alternative to the port of Hodeidah. In a statement in February 2017, UN Humanitarian Coordinator Jamie McGoldrick stated “the Aden Port does not have the required capacity or infrastructure to accommodate Yemen’s import demands,” and added that transporting goods from Aden to the rest of the country is an uncertain process due to the added costs, ongoing hostilities, blocked or damaged roads, and lack of fuel.⁷ In April, UN OCHA released a statement calling on the warring parties to keep Hodeidah port operational.⁸ “Even at its current [reduced] capacity, there is no viable substitute for Hodeidah port – both in terms of location and infrastructure” the

5 Operation Golden Spear is a UAE-led effort to retake the west coast of Yemen from Houthi/Saleh forces. Beginning in 2017, the operation in Taiz has succeeded in retaking the district of Dhubab, where Bab Al-Mendab is located; the port of Mocha in the district of Mocha, and the Khaled Bin Al-Walid military base in Mawza district. Ground forces have yet to cross the southern border of Hodeidah governorate.

6 Yemen Gulf of Aden Ports Corporation. “Aden Port Fully Ready to Receive Containers and other Cargo Traffic.” Issued by the General Directorate of Marketing & Media, March 17, 2017. http://nationalyemen.com/wp-content/uploads/Screenshot_20170318-140752-810x1085.jpg

7 McGoldrick, Jamie. “Statement by the Humanitarian Coordinator in Yemen, Jamie McGoldrick, on the Impact of the Conflict and the Ongoing Food Crisis.” UN OCHA, February 21, 2017. https://www.humanitarianresponse.info/system/files/documents/files/hc_statement_western_coast_food_crisis_-_english.pdf

8 UN OCHA. “Statement on behalf of the humanitarian country team in Yemen on the critical importance to maintain Hodeidah port open.” April 4, 2017. https://www.humanitarianresponse.info/system/files/documents/files/hct_statement_on_the_critical_importance_to_maintain_al_hudaydah_port_open.pdf

statement reads, adding that the costs of rerouting imports to Aden would be prohibitive. “Do not be swayed or deterred by those saying Aden or other ports is good enough,” Stephen O’Brien told the Security Council more recently, in his August briefing.⁹

4.3 IMPORTING FOOD COMMODITIES VIA LAND PORTS COULD LAND PORTS SUBSTITUTE FOR SEA PORTS?

In this section, the country’s land ports are examined with an eye to understanding the role they currently play in facilitating food imports and whether they could substitute for sea ports. All statistics below for the years 2014-2016 are calculated based on raw Yemen Customs Authority data, and ports that accounted for less than 0.01% of the total import quantity of a given commodity have been omitted.

A total of 8,974,761 tonnes of wheat grain was imported from 2014-2016, entering Yemen via 7 ports, as shown below. During these three years, 99.94% of wheat grain entered via sea ports, and only 0.06% entered over land. Given that wheat grain imports entering Yemen by sea ports increased during the first half of 2017, it is likely that sea ports continue to bring in almost all of the wheat grain entering Yemen.

TABLE 3:
WHEAT GRAIN IMPORTS 2014 – 2016 BY INDIVIDUAL PORT

	Port	Total 2014-2016		
		Tonnes	Percentage	
Sea	Saleef	4,003,735	44.61%	99.94%
	Hodeidah	2,949,294	32.86%	
	Aden (Mualla)	1,973,959	21.99%	
	Aden Free Zone	13,230	0.15%	
	Al-Mukalla	30,015	0.33%	
Land	Shahen	4,091	0.05%	0.06%
	Al-Wadea	700	0.01%	

For rice, 1,253,435 tonnes were imported between 2014-2016, entering via 11 ports. As shown below, 97.32% of the rice was imported via sea ports, and 2.69% entered over land. Of these land ports, only Shahen and Al-Wadea recorded rice imports in 2016 (the land ports that did not record any rice imports in 2016 are marked with an asterisk). Notably, in the first half of 2017 the quantity of rice imported via Al-Mukalla rose to 12.43%.¹⁰

⁹ UN Web TV. “Stephen O’Brien (OCHA) on the situation in the Middle East (Yemen) - Security Council, 8027th meeting.” August 18, 2017. <http://webtv.un.org/meetings-events/treaty-bodies/watch/stephen-obrien-ocha-on-the-situation-in-the-middle-east-yemen-security-council-8027th-meeting/5544762786001/?term>

¹⁰ Food Security Technical Secretariat (FSTS). “Monthly Market Monitoring Bulletin,” Issue 24, July 2017. [http://www.fsts.gov.com/imgs/EFRLP%20\(FSIS\)%20-FSTS%20Market%20Monitoring%20Bulletin%20-%20July%202017\(1\)_1.pdf](http://www.fsts.gov.com/imgs/EFRLP%20(FSIS)%20-FSTS%20Market%20Monitoring%20Bulletin%20-%20July%202017(1)_1.pdf)

TABLE 4:
RICE IMPORTS 2014 – 2016 BY INDIVIDUAL PORT

	Port	Total 2014-2016		
		Tonnes	Percentage	
Sea	Saleef	60,345	4.81%	97.32%
	Hodeidah	440,709	35.16%	
	Aden (Mualla)	17,744	1.42%	
	Aden Free Zone	651,259	51.96%	
	Al-Mukalla	47,589	3.80%	
	Mocha	2,095	0.17%	
Land	Shahen	21,973	1.75%	2.69%
	Al-Wadea	9,628	0.77%	
	Al-Tuwal*	826	0.07%	
	Al-Buqa*	1,029	0.08%	
	Alab*	232,475	0.02%	

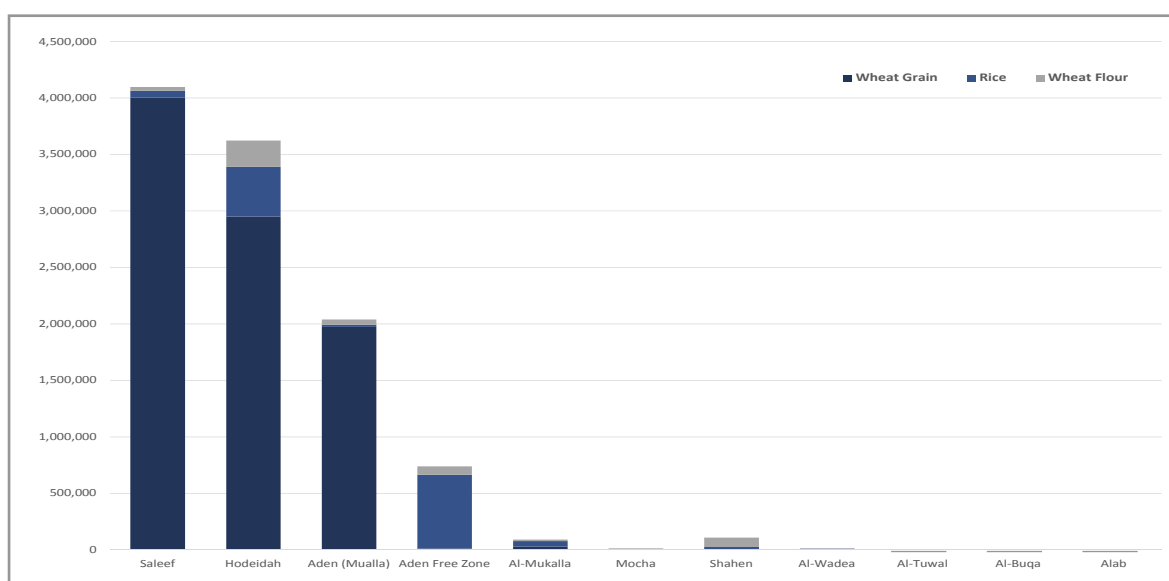
A total of 499,937 tonnes of wheat flour were imported between 2014 and 2016, via 8 ports. Of these, 6 sea ports accounted for 82.77% of the wheat flour, while the land port of Shahen brought in 16.59% and Al-Wadea 0.64%. Shahen therefore accounts for a significant quantity of wheat flour imports, however it is worth noting that only a small quantity of flour was imported via Shahen before 2015. Given that wheat flour imports spiked in 2015 likely as a result of the reduced domestic milling and storage capacity of wheat grain, and that the quantity of wheat grain imported in the first half of 2017 has increased, it follows that net wheat flour imports via Shahen may decrease in 2017, as they had already declined in 2016.

TABLE 5
WHEAT FLOUR IMPORTS 2014 – 2016 BY INDIVIDUAL PORT

	Port	Total 2014-2016		
		Tonnes	Percentage	
Sea	Saleef	32,718	6.54%	82.77%
	Hodeidah	232,547	46.52%	
	Aden (Mualla)	48,174	9.64%	
	Aden Free Zone	74,780	14.96%	
	Al-Mukalla	13,818	2.76%	
	Mocha	11,735	2.35%	
Land	Shahen	82,944	16.59%	17.23%
	Al-Wadea	3,192	0.64%	

Combining these three staple commodities over the period 2014–2016, imports arriving via land (124,696 tonnes) made up only 1.16% of the total 10,728,442 tonnes of wheat grain, rice, and wheat flour imports. The data from tables 3, 4, and 5 above are combined in figure 5 below, which shows the total quantities of each staple for each port from 2014 – 2016.

FIGURE 5:
TOTAL WHEAT GRAIN, RICE, AND WHEAT FLOUR IMPORTED 2014 – 2016 BY PORT (TONNES)



Land ports clearly play a very minor role in the import of staples to Yemen. However, the question remains: If the conflict causes a large reduction in imports via sea ports – Hodeidah and Saleef in particular – could land ports be used to substitute?

Al-Tuwal land port, in Hajjah governorate on Yemen's northwest border with Saudi Arabia, closed in 2015 after it was severely damaged by airstrikes. It has remained closed ever since, and the border area of Hajjah continues to experience regular ground clashes. Even if there was political will by the

authorities in Saudi Arabia to open the port on their side of the border, the port would take a long time to repair and reopen on the Yemeni side and longer still to be restored to its former capacity. Similarly, the ports of Al-Buqa and Alab, both in Sa'ada governorate, are active frontlines and these ports did not account for any of the staple imports last year.

This leaves Shahren port in Al-Mahra governorate, on the border with Oman, and Al-Wadea port in Hadhramout governorate, on the border with Saudi Arabia. These land ports continue to function under the authority of the Hadi government, but there are several challenges to increasing food imports through them. Firstly, while some wheat grain imports are shipped pre-packed in bags (e.g. 40 or 50 kg), a large portion is shipped to Yemeni sea ports in bulk, unloaded into storage, and then bagged inside Yemen for distribution to different governorates. This makes use of existing equipment at Yemeni sea ports, and ultimately allows for relatively higher import quantities and reduced costs compared to if it were pre-bagged. Wheat grain entering Yemen over land would necessarily be transported in bags given that the infrastructure is not available for bulk shipments, and this would reduce quantities and increase costs.

Secondly, Hodeidah and Saleef ports are under the control of Houthi/Saleh authorities, while Al-Wadea and Shahren are under Hadi government control. For non-staple food imports – which are subject to customs fees – cargo would be taxed once at the land port of entry and again when it crosses into Houthi/Saleh-held territory, again increasing costs. Port authorities at the Hadi-controlled port of Mukalla have reduced customs fees there in an attempt to attract business from importers and, for cargo travelling from Mukalla into Houthi/Saleh-held territory, the de-facto authorities collect the difference in customs fees on arrival into their territory. However, port authorities at Al-Wadea are charging the full customs fees, and even under such a split-fee scenario, in practice the cost ends up being higher due to additional fees levied by Houthi/Saleh authorities.

A third challenge is the road distance between the available land ports and the northwest of Yemen. From Al-Wadea, the route goes south in Hadhramout through to Marib, where travel to Sana'a is greatly impeded by ongoing hostilities. Shahren in Al-Mahra is farther still, on the opposite side of the country bordering Oman. Trucks coming from both Al-Wadea and Shahren travel through Al-Baydha governorate, south of Marib, and just like cargo from Aden port, enter Sana'a via Dhamar governorate.¹¹ Finally, Al-Wadea, which is now considered the main port between Yemen and Saudi Arabia since the closing of Al-Tuwal, is already overburdened with activity. A customs employee working at Al-Wadea port said in September 2017 that employees were already under heavy pressure due to laborers and other traffic passing through, indicating the port could not handle a large increase in imports.

¹¹ This map shows the routes from Al-Wadea and Shahren ports to Sana'a: <http://www.logcluster.org/map/yemen-concept-operations-map-august-2017>

The Logistics Cluster notes that should shipments to northern sea ports be limited and land transport between other sea ports (mainly Aden) to the north become unfeasible, Shahren and Al-Wadea are the two alternative routes.¹² Despite taking trucks three days to reach Sana'a on the Shahren port route, this land port is preferred over Al-Wadea. According to the Logistics Cluster, Al-Wadea's relatively small entry point, heavy congestion, busy and worn-down transport route within Yemen, combined with the presence of Coalition troops at the border "make the use of this corridor [as an alternative] hardly feasible." Given that Al-Wadea and Shahren land ports account for a miniscule quantity of staple foods compared to Hodeidah and Aden, and considering the difficulties outlined above that would prevent a large scale-up in imports through these ports, they are unlikely to be able to meet the country's needs as in the Contingency Plan scenario outlined above.

12 Logistics Cluster. "Hodeidah Contingency Plan – March 2017." March 14, 2017. <http://www.logcluster.org/document/hodeidah-contingency-plan-march-2017>

PART 5: FROM PORT TO LOCAL MARKET



5.1 OVERVIEW OF THE ROAD NETWORK

The process of transporting food commodities across the country has become more onerous and costly, primarily as a result of the degraded road network. While there is extensive damage to the network throughout the country, this section prioritizes the transport infrastructure most vital to the food pipeline, namely that which connects the ports of Aden and Hodeidah with the primary food distribution hubs in Yemen, such as the cities of Sana'a and Taiz.

The damage incurred to the road and bridge network is a direct result of the ongoing conflict and the inability of both the Sana'a and Aden-based governments to maintain or repair the infrastructure via the Public Corporation for Roads and Bridges of the Ministry of Public Works and Highways (MoPWH). Furthermore, in addition to its physical condition, the road network has also been negatively impacted by the sharp increase in the number of security checkpoints installed by the warring parties.

FIGURE 6:
YEMEN'S ROAD NETWORK. (SOURCE: LOGISTICS CLUSTER)



The main set of roads that are currently used to carry essential food imports from the sea ports to the major markets in Yemen can be grouped into the following routes:

1. The Aden–Lahj–Al-Dhalea–Yareem–Dhamar–Sana’a Road
2. The Hodeidah–Manakhah–Sana’a Road
3. The Aden–Lahj–Taiz Road
4. The Hodeidah–Taiz Road
5. The Hodeidah–Hajjah Road
6. The Sana’a–Amran Road

The conflict has forced truckers to use bypasses and other detours for portions of the main routes, or to completely abandon certain main highways and instead drive through a network of rural roads that are not suitable for heavy trucks. Take for example the Aden–Sana’a route. In the past, truckers used to take the Aden–Al-Rahidah–Taiz–Ibb–Yareem–Dhamar–Sana’a route. Although slightly longer than the route currently being used, it was safer because the road elevation was not too steep. As a result of the ongoing confrontations in Taiz, truckers now go through Aden–Al-Habilayn–Al-Dhalea–Yareem–Dhamar–Sana’a despite Nageel¹ Al-Dhalea, a torrent road built on a very steep hill, being situated along this route. As a result, truckers are currently forced to wait for hours, sometimes days, to be towed every time they go through this portion of the road. To make matters worse, this route, like many of the others, has a very high number of security checkpoints that slow down travel time.

Unlike the Aden–Sana’a road, the Hodeidah–Manakhah–Sana’a road does not have a major alternative route that the truckers could use. Along this route a number of bridges have been damaged by airstrikes, such as Al-Darjah, Al-Qasabah, Al-Dinarah, Bab Makhlah, and Bab Reeshah. Bypasses have been constructed for some of these bridges; however, vehicles cannot use those bypasses during the rainy season and at times delays of over 12 hours are experienced.

Meanwhile, the Aden–Lahj–Taiz route is currently one of the most inaccessible routes due to the conflict. As a result of recurring military confrontations, truckers have stopped using this road and resorted to one of two inner roads, both of which are not completely paved in asphalt and have not been designed for heavy trucks. Using the alternative routes have more than doubled the travel duration from Aden to Taiz. Even if the military confrontations cease today and the main road becomes accessible again, it will still not be useable because the Aqqan and Madram bridges have been damaged and need to be rebuilt. Heavy trucks will not be able to use bypasses in this case because of the nature of the terrain.

¹ “Nageel” is a Yemeni term referring to a mountain pass

The MoPWH has repaired many bridges and other crucial transport infrastructure during the conflict. For example, the majority of bridges along the Aden-Al-Habilayn-Al-Dhalea-Yareem-Dhamar-Sana'a route have been repaired to a sufficient degree to allow the passage of trucks, and for many other bridges bypasses have been established. However, vital infrastructure is overall in urgent need of maintenance and reconstruction.

TABLE 6
TRANSPORT ROUTE, TIME, DISTANCE, AND CAUSE OF DELAY FROM MAIN PORTS TO CITIES

From	To	Distance (Km)		Time (Hr)		Previous Route	Current Route(s)	Issues
		Past	Current	Past	Current			
Aden	Sana'a	363	363	8	2-3 days	Aden-Al-Rahidah-Taiz-Ibb-Yareem-Dhamar-Sana'a	Aden-Lahj-Al-Dhalea-Yareem-Dhamar-Sana'a	Security checkpoints and steep elevation at Naqeel Al-Dhalea requires a tow
Hodeidah	Sana'a	226	226	6	18	Hodeidah-Bajel-Manakhah-Sana'a		During Rainy season
				6	8			During normal weather conditions
Taiz	Sana'a	256	375	7	17	Taiz-Ibb-Yareem-Dhamar-Sana'a	Taiz-Haijat Al-Abd-Al-Qabaitah-Al-Rahidah-Taiz (Hawban)-Ibb-Yareem-Dhamar-Sana'a	Not paved in asphalt
			325	7	10		Taiz-Saber-Demnat Khadeer-Taiz (Hawban)-Ibb-Yareem-Dhamar-Sana'a	Military Confrontations
Aden	Taiz	158	200	4.5	8.5	Aden-Lahj-Al-Anad-Taiz	Aden-Lahj-Tor Al-Baha-Haijat Al-Abd-Al-Torbah-Taiz	Not suitable during heavy rains
			227	4.5	10		Aden-Lahj-Tor Al-Baha-Al-Sabbaiha-Hiafan-Al-Demnah-Saber-Taiz	Military Confrontations
Hodeidah	Taiz	272	272	3	1 day	Hodeidah-Al-Makhah-Taiz	Hodeidah-Ibb-Taiz (Al-Hawban)-Al-Demnah-Saber-Taiz	Military Confrontations
Hodeidah	Aden	439	439	5	2-3 days	Hodeidah-Al-Khat Al-Bahry-Aden	Hodeidah-Ibb-Al-Dhalea-Lahj-Aden	Military Confrontations

THE CHALLENGE OF TRANSPORTING CARGO IN YEMEN

TRAVELLING ALTERNATIVE ROADS TO AVOID THE CONFLICT IN TAIZ

The risk posed by the increased use of alternative roads to transport heavy cargo is exemplified by an incident that occurred in Lahj governorate at the end of August 2017, when flooding caused damage to the road network and several trucks were overturned. The incident occurred in the Al-Maqatarah district of Lahj, which lies on the southern border of Taiz governorate,¹ and five people were killed in addition to 13 people injured.² Two images of the aftermath are shown below:

FIGURE 7:
TRUCKS STUCK ON AN ALTERNATE ROUTE TO TAIZ DUE TO FLOODING IN AUGUST 2017:



Prior to the conflict, the main Aden–Lahj–Taiz road was north through Al-Anad in Lahj, then to Al-Rahidah in Taiz. However, persistent insecurity along this route due to the fighting between Hadi government forces and the Houthi/Saleh alliance has made this road difficult to use. The alternative route goes west in Lahj to Toor Al-Baha and crosses the border into Taiz near Haigat Al-Abd, which is the very challenging, steep and windy area in Al-Maqatarah district where the above pictured incident occurred. While this route avoids the hostilities, it has long been known as unsuitable for heavy transportation trucks because it was not designed for them and some sections of the road were not properly finished with asphalt. The specific section of road the trucks were on in the above example was suitable for those trucks during optimal conditions, but it was not built to handle trucks during heavy rains. In contrast, the main road is suitable for use during heavy rains, and this incident likely would have been avoided if traffic to Taiz was not being hindered by conflict.

1. Al-Maqatarah district is often referred to by locals as being located in Taiz, and the road where the incident took place crosses back and forth between the poorly-defined governorate border of Taiz and Lahj. However, administratively Al-Maqatarah is part of Lahj and the district on the Taiz side is Al-Shamaytayn.
2. [AR] Hour News. "18 killed and injured after surprise large flooding in the area of Al-Maqatarah, Taiz." August 30, 2017. <http://hournews.net/news-79601.htm>.

5.2 COSTS AND MARKUPS ON THE PORT-TO-SHOP ROUTE

Once cargo is unloaded at a port in Yemen, transporters indicated the cost per container for transport from the port has increased around 40%, and a 100% increase for per-tonne transport from 4,000 YER/tonne before the conflict to 8,000 YER/tonne currently. Table 7 shows the approximate costs for transporting shipments of 20 ft. and 40 ft. containers (or their equivalent) before and during the war. All prices are in Yemeni riyal:

TABLE 7
TRANSPORT COSTS FOR 20 FT. AND 40 FT. CONTAINERS BEFORE AND DURING CONFLICT

	Pre-conflict		During the conflict		Price increase	
	20 ft.	40 ft.	20 ft.	40 ft.	20 ft.	40 ft.
Hodeidah – Sana'a	150,000	230,000	250,000	340,000	66.67%	47.82%
Aden – Sana'a	230,000	310,000	315,000	430,00	36.96%	38.71%

Since the war broke out payments are required at various checkpoints along transport routes; however, these are not included in the above prices. From Aden to Sana'a, these additional fees usually add up to YER 80,000-100,000 and from Hodeidah around YER 40,000.

PART 6: CONCLUSION & RECOMMENDATIONS



This examination of the Yemeni food pipeline has demonstrated how, at each stage in the process, challenges are being encountered that ultimately increase the final cost of staple goods reaching local shelves. There are, for the most part, sufficient food commodities in local markets, but the majority of Yemeni households lack the financial ability to meet their daily requirements. The devaluation of the riyal and the widespread loss of income sources have left Yemenis financially worse off than prior to the war, and although international prices dropped for certain staples coinciding with the onset of the war, the final retail costs of basic foods in Yemeni markets have increased. Among the most important reasons for this increase are the difficulties importers have in securing foreign currency to purchase goods; the clearance, screening, and unloading delays and associated cost increases in shipping; and the trucking of cargo to food distribution centers across Yemen, which increasingly entails the use of unsuitable roads and the proliferation of unofficial checkpoints.

The enormity of the humanitarian crisis in Yemen and the complexity of the actors on the ground make navigating the path forward a daunting task. However, as this report has highlighted, there are many stages along the food pipeline where delays and cost increases are being experienced, and this leaves several areas where the international community and Yemeni authorities can step up. Below is a list of key issues stakeholders are recommended to address in order to facilitate the import of food to Yemen and improve the ability of locals to purchase it, followed by a detailed explanation of each point. These recommendations apply to Yemeni authorities, the UN, international NGOs (INGOs), and donors.

6.1 STRENGTHEN PURCHASING POWER BY RESTORING INCOME AND AID SOURCES

- Resume public sector salary payments
- Prioritize cash transfers for humanitarian assistance
- Offer livelihood opportunities and need-based support

6.2 EXPAND FINANCIAL OPTIONS FOR YEMENI IMPORTERS AND TRADERS

- Ease access to foreign currency for importers
- Facilitate international transfers to suppliers
- Provide wholesalers and retailers improved access to finance

6.3 ELIMINATE OR REFINE TIME-CONSUMING AND COSTLY SHIPPING PROCEDURES

- Ensure UNVIM is able to operate according to its stated SOPs
- Remove Coalition-imposed limits on container numbers and transshipping options

6.4 IMPROVE THE CAPACITY OF THE MAIN PORTS TO HANDLE BASIC COMMODITIES

- Allow mobile cranes to be installed at Hodeidah port
- Repair Hodeidah port
- Expand the capacity of Aden port

6.5 IMPROVE THE TRANSPORT NETWORK INSIDE YEMEN

- Improve the physical condition of the most vital roads and bridges
- Unblock the flow of commercial and humanitarian goods to Taiz city
- Conduct a mapping of existing local markets to determine which have closed and to identify the communities most lacking in physical access to markets

6.1 STRENGTHEN PURCHASING POWER BY RESTORING INCOME AND AID SOURCES

GOVERNMENT

Resume public sector salary payments. With exceptions across sectors and governorates, civil service employees nationwide have largely gone unpaid for a full year since the relocation of the Central Bank of Yemen to Aden in September 2016. The payroll includes over 1.2 million civil and military personnel who support around 6.9 million dependents, meaning the lack of salary payments removes a direct income source to over a quarter of the country, with an even further reaching impact on the health and education system. The ongoing negotiations under the auspices of the UN Special Envoy include, as a central component, the collection of state revenue from around the country, including from the port of Hodeidah, to be disbursed to public employees nationwide. The international community can encourage the warring parties to reach an agreement on this issue by developing a mechanism that will collect state revenues, from taxes, customs, and oil sales, and have a well-defined facility to disburse payments to recipients. Progress on such a mechanism, while negotiations are ongoing, would help reassure the warring parties the process will be impartial, build diplomatic momentum, and speed up its implementation should negotiations be successful.

DONORS AND INGOS

Prioritize cash transfers for humanitarian assistance. For the most part, the alarming level of food insecurity is the result of poor purchasing power rather than an absence of goods. With this in mind, rather than distributing in-kind items to those in need, cash transfers should be used where possible in order to avoid distorting local market mechanisms. In May 2017, the Development Champions Forum, composed of Yemeni social and economic development experts, recommended that cash transfers be prioritized and that when in-kind assistance is deemed necessary, local manufacturers and suppliers should be used in order to sustain local job opportunities.¹

1- "Rethinking Yemen's Economy – Addressing Yemen's Most Critical Challenges." DeepRoot Consulting, Sana'a Center for Strategic Studies (SCSS), & Center for Applied Research in Partnership with the Orient (CARPO). June 5, 2017. <http://www.deeprootconsulting/single-post/2017/06/05/Rethinking-Yemens-Economy---Addressing-Yemens-Most-Critical-Challenges>.

Furthermore, the use of vouchers or e-vouchers for humanitarian assistance could be improved to include a wider network of small retailers in the humanitarian distribution chain, given that the existing voucher system limits their use to a small number of large outlets. In seeking to maximize the output of humanitarian assistance to Yemen, the international community can draw on the findings of the High Level Panel on Humanitarian Cash Transfers.² In addition to unconditional cash transfers, conditional cash transfers are also an important mechanism to help rebuild livelihoods and restore self-employment. This is especially pertinent for IDPs who have been forced to leave their professions and trades behind.

DONORS AND INGOS

Offer livelihood opportunities and need-based support. Providing employment opportunities in local communities, even on a short-term basis, will go a long way to bolstering the ability of families to purchase the food they require. An example of this is the World Bank's Emergency Crisis Response Project (ECRP), which is improving the livelihood of beneficiaries in targeted communities. In addition to income opportunities, targeted welfare payments are a vital means to ensure the most in-need Yemenis are receiving assistance. In an important step, a gradual resumption of Social Welfare Fund (SWF) payments began in August 2017. The quarterly payments, managed by UNICEF and delivered by Al-Amal bank with \$200 million provided by the World Bank, are planned to target 1.5 million families for a total 8 million beneficiaries.³ International stakeholders should ensure the SWF has continued technical support and funds and should study the beneficiary list periodically to ensure it captures the most impoverished rural residents and not relatively well-off beneficiaries.

6.2 EXPAND FINANCIAL OPTIONS FOR YEMENI IMPORTERS AND TRADERS

GOVERNMENT & DONORS

Ease access to foreign currency for importers. The foremost challenge importers have in securing food commodities to Yemen is meeting their foreign currency needs, which the Central Bank of Yemen stopped facilitating with its relocation to Aden in September 2016. Since then, importers have had to rely on purchasing foreign currency from the black market at exchange rates significantly higher than the official rate maintained by the CBY until it floated the riyal in August 2017. Importers often need to acquire several million USD per shipment, and multiple-day negotiations with exchange companies to secure foreign currency adds an additional challenge for importers. In order to help importers facilitate shipments to Yemen, the international community can support the creation of a mechanism to provide access to foreign currency.

² "Doing cash differently: How cash transfers can transform humanitarian aid." Report of the High Level Panel on Humanitarian Cash Transfers, Overseas Development Institute (ODI). September 2015. <https://www.odi.org/sites/odi.org.uk/files/odi-assets/publications-opinion-files/9828.pdf>.

³ Famine Early Warning Systems (FEWS) Network. "Large-scale food security Emergency (IPC Phase 4) continues in Yemen." Food Security Outlook Update, August 2017. <http://www.fews.net/east-africa/yemen/food-security-outlook-update/august-2017>.

Facilitate international transfers to suppliers. Importers face considerable difficulty transferring payments to international suppliers. Whereas import transactions prior to the conflict were conducted entirely through banks, there has been a trend toward using currency exchange companies to pay international suppliers. In order to pay for imports, both banks and exchange companies use the foreign currency fed into their international accounts by remittances and international NGO transfers. Traders are experiencing difficulties working with Yemenis banks due to tightened restrictions, and exchange companies are not always able to provide sufficient foreign currency. These difficulties can amount to importers having to pay higher fees for exchange company services, delays in food shipments as payments are secured, and associated risks due to the uncertainty of the process. Ensuring the continued relationship between the few international banks (including the Bank of Beirut in Frankfurt and Commerzbank AG) willing to act as correspondent banks with Yemeni financial institutions is one important way the international community can play a role to facilitate transfers.

Provide wholesalers and retailers improved access to finance. As a result of the conflict, importers and wholesalers no longer offer credit terms to their clients, instead requiring cash payments in advance. This has forced many wholesalers and retailers to reduce or stop their trade altogether because they cannot afford the advance payments, especially given the added cost increases and challenges presented by the ongoing war. Meanwhile, an estimated 59% of the population rely on credit from retailers to purchase essential foods, reducing the cash available to retailers to purchase from wholesalers, according to a WFP study in April 2017.⁴ To address this problem, international stakeholders could establish a facility that provides access to credit for retailers and wholesalers.

Relatedly, the same WFP study found that 51% of the population has borrowed money in order to purchase essential food. With support from the international community, Microfinance Institutions (MFIs), which have achieved notable results over the past decade in providing poor Yemenis with access to finance, could expand consumable loans to low-income recipients in need of small sums of cash to meet their immediate needs.

6.3 ELIMINATE OR REFINES TIME-CONSUMING AND COSTLY SHIPPING PROCEDURES

Ensure UNVIM is able to operate according to its stated SOPs. The UN Verification and Inspection Mechanism has proven effective, and ongoing concerns over weapons smuggling to the Houthi/Saleh alliance warrant its continuity. UNVIM's average time to issue clearance is 36.5 hours, and the mechanism itself does not introduce unreasonable delays. However, this

⁴ World Food Programme. "State of Food Insecurity in Yemen based on the Emergency Food Security and Nutrition Assessment (EFS-NA)." April 2017. <https://www.wfp.org/content/yemen-state-food-insecurity-emergency-food-security-nutrition-assessment-april-2017>.

efficiency is undermined by the Coalition's de-facto authority to issue the final clearance, as a result of its control over Yemeni waters. Inspection practices by the Coalition that are additional to the UNVIM process introduce considerable unpredictability to the import process, and suppliers say that not only is this time-consuming but costly due to charges incurred while awaiting inspection and clearance. Therefore, UNVIM should be empowered to have the ultimate authority to issue clearance to commercial and humanitarian ships into Yemeni waters.

COALITION

Remove coalition-imposed limits on container numbers and transshipping options. Limiting transshipments to King Abdullah port in Saudi Arabia is resulting in lengthy delays. It is unclear why the option to transship at ports in Djibouti, the UAE, and Oman has been removed, as these ports were used prior to the conflict and throughout 2016. These ports should again be opened for transshipments. Another restriction imposed after the conflict began is the limit on the number of containers allowed per vessel travelling to Hodeidah port. Whereas Hodeidah port received vessels carrying up to 1,700 containers prior to the conflict – a limit based on the logistical requirements of the port – the Coalition has imposed a limit of 700 containers. This marks a 59% drop in the number of containers permitted per ship, which has increased costs for shipping lines.

6.4 IMPROVE THE CAPACITY OF THE MAIN PORTS TO HANDLE BASIC COMMODITIES

COALITION

Allow mobile cranes to be installed at Hodeidah port. Four large cranes procured by the WFP with USAID funds were sent to Hodeidah in January 2017 to help replace the 5 gantry cranes destroyed by airstrikes early in the war, but clearance for the ship transporting the cranes was revoked and they have been sitting in storage in the UAE ever since.⁵ Due to the crucial importance of Hodeidah port for bringing in basic food commodities, stakeholders should urge the relevant authorities to allow the cranes to be installed at the port. The larger issue of control over Hodeidah port is central to the ongoing peace process, and the issue concerning the cranes has become intertwined in that process. In August, the Saudi mission to the UN said in a statement that the Coalition “reaffirms its readiness to facilitate the immediate installation of cranes at the port of Hodeidah, in line with the Secretary General’s Special Envoy Ismail Ould Cheikh Ahmed’s latest proposals.”⁶ This makes their installation dependent on the success of the larger negotiations, and this may serve to dilute responsibility on both sides and delay action. In addition to supporting the UN Special Envoy’s efforts, the international community should treat the installation of the cranes as a purely humanitarian matter and urge this measure be carried out unconditionally.

5 Ryan, Missy. “U.S. plan to help Yemenis obtain humanitarian aid falters, amid growing food crisis.” Washington Post, March 15, 2017. https://www.washingtonpost.com/news/checkpoint/wp/2017/03/15/u-s-plan-to-help-yemenis-obtain-humanitarian-aid-falters-amid-growing-food-crisis/?utm_term=.45e390cd34ae.

6 The National (UAE). “Saudi Arabia installing cranes at three Yemen ports to boost aid delivery.” August 18, 2017. <https://www.thenational.ae/world/mena/saudi-arabia-installing-cranes-at-three-yemen-ports-to-boost-aid-delivery-1.620835>.

Repair Hodeidah port. In addition to the installation of the four mobile cranes, which have already been procured and could be implemented quickly with little additional costs, the crucial longer-term issue is the rehabilitation of Hodeidah port. According to the Red Sea Ports Corporation, the total cost of the damage to Hodeidah port is \$70 million, \$50 million of which is the cost to replace the five gantry cranes damaged by airstrikes. Compared to the 1-2 days maximum it used to take shipping agents to unload their ships before the conflict, due to the destruction of the cranes it now takes 8 to 10 days. Repairing the facilities at Hodeidah port would be one of the most effective ways to improve the food pipeline given the volume of imports received in Hodeidah. However, its centrality to the political negotiations and the continued possibility of a military operation to retake the port from Houthi/Saleh control makes the feasibility of conducting repairs at this stage in the conflict unclear.

Expand the capacity of Aden port. In contrast to Hodeidah port, where solutions to certain import obstacles are readily available, for Aden port it is less apparent what can be done to allow for a greater quantity of imports and reduced shipping costs. A careful study should be conducted to analyze the needs at Aden port and identify where and how capacity can be increased. Furthermore, the subsequent steps from the port to different food distribution centers should be examined to identify current or potential bottlenecks in the road network.

6.5 IMPROVE THE TRANSPORT NETWORK INSIDE YEMEN

Improve the physical condition of the most vital roads and bridges. Damage to the road and bridge network resulting directly from the conflict and indirectly from the reduced capacity of the Ministry of Public Works and Highways (MoPWH) has increased the time and costs of travel along many key routes. It has also introduced dangers to the transporters who use unsuitable routes in order to avoid conflict areas or simply due to the lack of alternative options. The MoPWH estimated in early 2017 that the costs of reconstruction and urgent maintenance are over \$900 million. Taking into account the routes most advantageous to the food pipeline in Yemen, it is recommended that Naqeel Al-Dhalea on the Aden-Lahj-Al-Dhalea-Yareem-Dhamar-Sana'a route be prioritized for repair, as well as two bridges along the Hodeidah-Manakhah-Sana'a route: the Al-Darjah bridge and the Al-Qasabah bridge. This would result in a notable reduction in the bottlenecks being experienced for transport from port cities.

Unblock the flow of commercial and humanitarian goods to Taiz city, including medicine. The clearest impediment to the food pipeline within Yemen is the near-total blockade the Houthi/Saleh alliance has imposed on the city of Taiz, which has been under siege for two years. Taiz is experiencing some of the worst levels of food insecurity nationwide, and 75% of the almost 3.2 million

residents of the governorate are considered food insecure.⁷ With the urging of civil society actors from Taiz, UN Envoy Ould Cheikh brought this issue to the UN Security Council in mid-August. After discussing the components of his proposals that include the management of Hodeidah port, state revenue collection, salary distribution, and re-opening Sana'a airport, he said "there should also be immediate steps to re-open roads to and from Taiz for humanitarian and commercial supplies... The denial of access to basic supplies for the people of Taiz has gone on too long."⁸ This marked a positive step and an avenue for the international community to mount pressure on the Houthi/Saleh alliance to open access to Taiz for humanitarian reasons. However, in his statement to the Security Council in October, the Special Envoy did not mention the Taiz issue along with the other components of his ongoing proposals.⁹ The issue of the blockade of Taiz should not be approached from a political perspective but rather as a humanitarian crisis that needs to be addressed immediately, and the Security Council along with international stakeholders should advocate accordingly for supply routes to and from the city to be opened up.



Conduct a mapping of existing local markets to determine which have closed and identify the communities most lacking in physical access to markets. Near the end of the food pipeline are the local markets which, as previously explained, over 70% of rural residents rely on to meet their food requirements. International stakeholders could sponsor a study to determine the status of local markets, firstly to determine which ones have been destroyed or shut down, and secondly to find which communities would be most advantaged by new markets. Researchers could build on a database¹⁰ maintained by the Ministry of Agriculture and Irrigation, which lists 122 major markets across the country but does not track their current status.

7 Yemen Food Security Information System (FSIS) Development Programme. "Yemen: Projected Acute Food Insecurity Situation - March-July 2017." Integrated Food Security Phase Classification (IPC), March 14, 2017. http://fscluster.org/sites/default/files/documents/ipc_yemen_2017_acute_food_insecurity_analysis_communication_brief_final_draft_-14-03-2017.pdf.

8 Ismail Ould Cheikh Ahmed. "Briefing by the special envoy of the Secretary-General to Yemen." United Nations in Yemen. August 18, 2017. <http://ye.one.un.org/content/unct/yemen/en/home/news-centre/news/briefing-special-envoy-secretary-general-yemen-2017-08-18.html>.

9 Ismail Ould Cheikh Ahmed. "Briefing of the UN Special Envoy for Yemen at the Open Session of the Security Council." UNSC, October 10, 2017. <https://ossgy.unmissions.org/briefing-un-special-envoy-yemen-open-session-security-council>.

10 The database [AR] can be found at the following link: <http://gdmart.org/index.php/ar/%D8%A7%D9%84%D8%A3%D8%B3%D9%88%D8%A7%D9%82>.

BIBLIOGRAPHY

- Center for Applied Research in Partnership with the Orient (CARPO), DeepRoot Consulting, & Sanaa Center for Strategic Studies (SCSS). "Rethinking Yemen's Economy – Addressing Yemen's Most Critical Challenges," June 5, 2017. <http://www.deeproot.consulting/single-post/2017/06/05/Rethinking-Yemens-Economy---Addressing-Yemens-Most-Critical-Challenges>.
- Food and Agriculture Organization. "Country Briefs: Yemen." GIEWS - Global Information and Early Warning System, Reference Date: 12-April-2017. <http://www.fao.org/giews/countrybrief/country.jsp?code=YEM>.
- Food Security Technical Secretariat (FSTS). "Monthly Market Monitoring Bulletin," Issue 24, July 2017. [http://www.fsts-gov.com/imgs/EFRLP%20\(FSIS\)%20-FSTS%20Market%20Monitoring%20Bulletin%20-%20July%202017\(1\)_1.pdf](http://www.fsts-gov.com/imgs/EFRLP%20(FSIS)%20-FSTS%20Market%20Monitoring%20Bulletin%20-%20July%202017(1)_1.pdf).
- Logistics Cluster. "Hodeidah Contingency Plan – March 2017." March 14, 2017. <http://www.logcluster.org/document/hodeidah-contingency-plan-march-2017>.
- McGoldrick, Jamie. "Statement by the Humanitarian Coordinator in Yemen, Jamie McGoldrick, on the Impact of the Conflict and the Ongoing Food Crisis." UN OCHA, February 21, 2017. https://www.humanitarianresponse.info/system/files/documents/files/hc_statement_western_coast_food_crisis_-_english.pdf.
- O'Brien, Stephen. "Under-Secretary-General For Humanitarian Affairs and Emergency Relief Coordinator, Stephen O'Brien Statement to Security Council Arria-Formula Meeting on Yemen." UN OCHA, August 21, 2017. <https://goo.gl/SEpV4T>.
- Othman, Maher. "State Institutions During Conflict: Yemen Customs Authority." DeepRoot Consulting. October 2016. http://docs.wixstatic.com/ugd/df2b40_44cb4dacab5e456eb5c1b1a8803f7f42.pdf.
- Overseas Development Institute (ODI). "Doing cash differently: How cash transfers can transform humanitarian aid." Report of the High Level Panel on Humanitarian Cash Transfers, September 2015. <https://www.odi.org/sites/odi.org.uk/files/odi-assets/publications-opinion-files/9828.pdf>.
- World Food Programme. "Comprehensive Food Security Survey 2012: The State of Food Security and Nutrition in Yemen." 2012. http://documents.wfp.org/stellent/groups/public/documents/ena/wfp247832.pdf?_ga=1.262912651.687705134.1486911247.
- World Food Programme. "Emergency Operation Yemen 201068: Immediate, Integrated and Sustained Response to Avert Famine in Yemen" 2017. <http://www1.wfp.org/operations/201068-immediate-integrated-and-sustained-response-avert-famine-yemen>.
- World Food Programme. "State of Food Insecurity in Yemen based on the Emergency Food Security and Nutrition Assessment (EFSNA)." April 2017. <https://www.wfp.org/content/yemen-state-food-insecurity-emergency-food-security-nutrition-assessment-april-2017>.
- World Food Programme. "Yemen Market Watch Report," Issue No. 16, August 2017. https://docs.wfp.org/api/documents/WFP-0000022394/download/?_ga=2.265942924.2077222959.1505452818-733716788.1499375971.
- Yemen Customs Authority. Annual Report, 2013. Not published online.
- Yemen Food Security Information System (FSIS) Development Programme. "Yemen: Projected Acute Food Insecurity Situation - March-July 2017." Integrated Food Security Phase Classification (IPC), March 14, 2017. http://fscluster.org/sites/default/files/documents/ipc_yemen_2017_acute_food_insecurity_analysis_communication_brief_final_draft_-14-03-2017.pdf.

