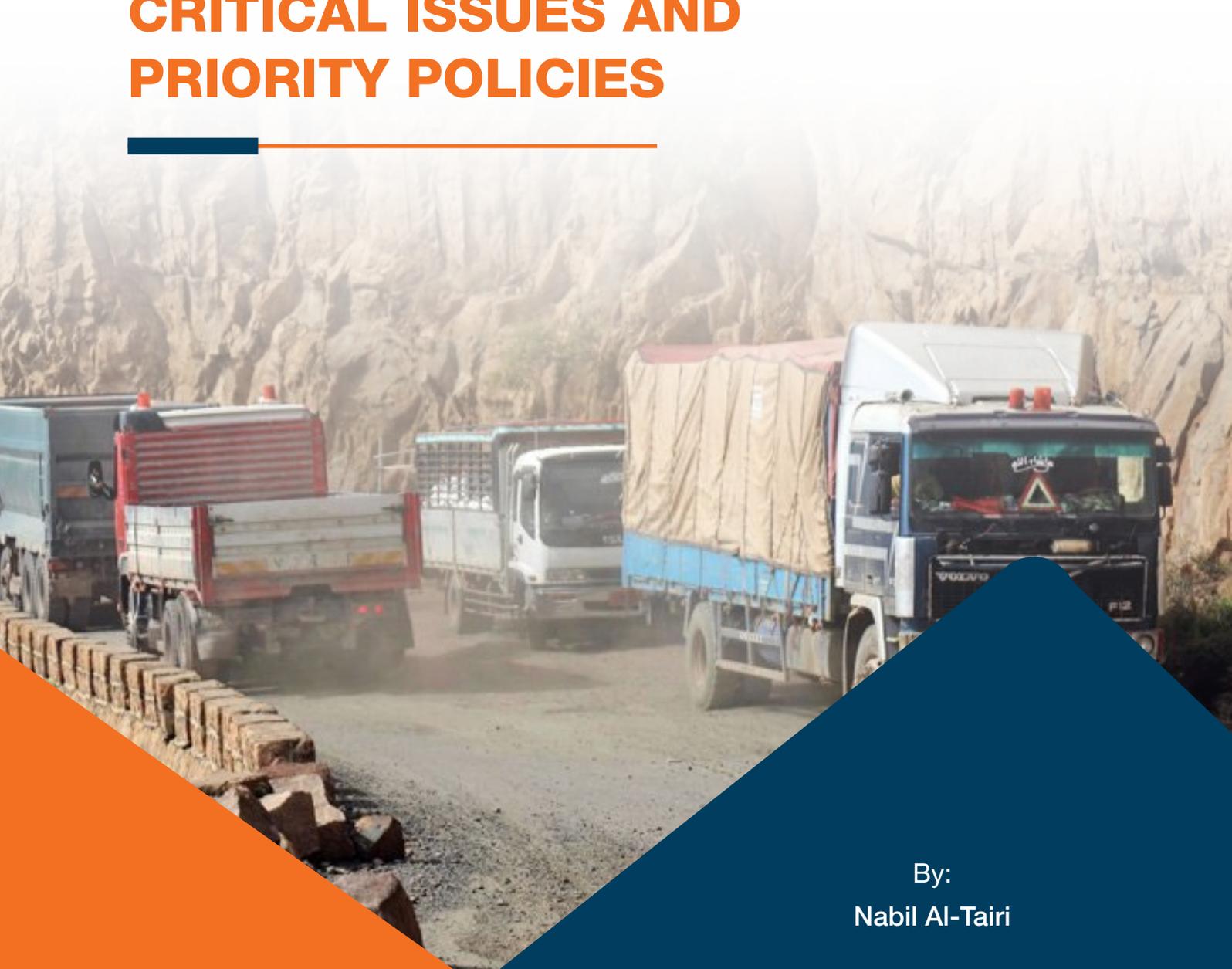




**RETHINKING**  
YEMEN'S ECONOMY

# THE ROAD TRANSPORT SECTOR IN YEMEN: CRITICAL ISSUES AND PRIORITY POLICIES

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By:  
**Nabil Al-Tairi**

March 2022

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This white paper was prepared for the Rethinking Yemen's Economy initiative by DeepRoot Consulting, in coordination with project partners Sana'a Center for Strategic Studies and CARPO – Center for Applied Research in Partnership with the Orient

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The only road between the Yemeni cities Taiz and Aden. After seven years of war, Yemen's roads are in a derelict state. (AFP)



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## LIST OF ABBREVIATIONS

AA	Ansar Allah
FAO	Food and Agriculture Organization of the UN
FFPMU	Foreign Funded Project Management Unit
GCRB	General Corporation of Roads and Bridges
GoY	Government of Yemen
GDP	Gross Domestic Product
IRG	Internationally Recognized Government
LTRA	Land Transport Regulatory Authority
MENA	Middle East and North Africa
MCHUP	Ministry of Construction, Housing and Urban Planning
MoI	Ministry of Interior
MoPIC	Ministry of Planning and International Cooperation
MoPWH	Ministry of Public Works and Highways
MoT	Ministry of Transportation
RMF	Road Maintenance Fund
RTS	Road Transport Sector
RAPCMO	Rural Access Program Central Management Office
WHO	World Health Organization
YR	Yemeni Rial

## EXECUTIVE SUMMARY

Yemen is predominantly a rural country, with over 70% of the population living in 140,000 settlements in impoverished rural areas. Road transportation is thus essential for the country's development and overall economic growth. With only about 3,744km of paved rural roads, representing approximately 6.4% of all roads in the country, Yemen's neglected road network poses significant development challenges. The current conflict, in its various forms, has complicated the movement of people and goods between governorates as well as into and out of Yemen. Road transportation costs have risen as much as 145% due to high fuel prices and the need to take alternative long-distance routes. Road infrastructure has also incurred heavy losses because of the conflict, estimated at \$1.3 billion, with the total length of damaged roads reaching about 6,000km along with more than 100 bridges. Road projects have been halted due to a lack of financing, which has exacerbated the sector's problems.

Among the most prominent institutional challenges are a lack of effective policies and legislation, rundown equipment and machinery, and personnel and human resources challenges. A shortage of financial resources, which limits the sector's operations, is the largest obstacle facing road transport authorities.

This white paper offers short-term, medium and long-term recommendations on alleviating the impacts of the war on the road transportation sector; infrastructure policies for rural and urban roads; policies for road maintenance and repairs that impact commercial traffic; and updating the institutional structure of road transportation.

In the short-term, efforts must be made to boost the sector's role in developing, implementing, and operating intelligent transportation systems for buses and freight trucks to guarantee the security and safety of passengers and streamline payments for cargo. It is also urgent that stalled road projects are resumed. Efforts must also include the restoration of operations at the weigh stations damaged by the war, application of traffic safety laws on roads between governorates to reduce accidents and enhancement of the institutional capacity of road transport institutions. Humanitarian and emergency aid should be directed toward rural roads to bolster these efforts.

In the medium to long term, authorities should establish inland ports at the main entrances to cities, which could help reduce traffic heavy loads on roads and the price of goods. Efforts should also include a strategic program to expand rural roads in Yemen, assess the current state of the road network, develop international land border ports and facilitate transit procedures. Plans should also be made to develop the legislative, regulatory and institutional framework of the sector to meet current needs and prevent conflicting interests and tasks.

# INTRODUCTION: AN OVERVIEW OF THE ROAD TRANSPORTATION SECTOR IN YEMEN

The road transportation sector (RTS) is the leading transportation sector in Yemen. Economic and social development primarily depends on road transportation, given the support it offers to the agriculture, manufacturing, mining, and trade sectors and the links it provides between localities. In addition, RTS plays a vital role in alleviating poverty and improving the standard of living by facilitating the delivery of goods and services to urban and rural markets, enabling rural producers to access these markets and providing access to education and health services across the country. The preparation of land transport Law 33 in 2003 and the establishment of the General Authority for Regulating Land Transport Affairs in 2008 were important steps in regulating and liberalizing the land transport market, although there are still some monopolistic practices in the goods transport and trucking market.<sup>[1]</sup>

The road sector in Yemen has undergone significant transformations in the past three decades. Many of these changes positively impacted the population and economic activity, as evidenced by the tangible improvement Yemen achieved in the logistics performance index, moving up in the global rankings from 112 in 2007 to 63 in 2012.<sup>[2]</sup> Moreover, paved roads, defined as roads that connect the main cities within governorates and connect governorates with each other but does not include internal paved roads within cities, reached 17,289km in 2014, up from 4,500km in 1990, equivalent to an increase of 284%.<sup>[3]</sup> However, the asphalt density of Yemen's roads still does not exceed 31km per 1,000km<sup>2</sup> of the country's area.<sup>[4]</sup> This is low compared to the average in the Middle East and North Africa (MENA) region, 70km per

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1) Ministry of Planning and International Cooperation, "Draft: The Fourth Five-Year Plan for Poverty Reduction 2011-2015," February 2011, p. 132. The Council of Ministers is about to adopt the plan in February 2011. (unpublished document).

2) United Nations, Economic and Social Commission for Western Asia (ESCWA), Committee on Transport and Logistics in the Arab Region, Logistics Performance Index, Beirut, December 20-21, 2017, Table 2: Ranking and totals of ESCWA member countries in 2007, 2012 and 2016.

3) (A) Ministry of Planning and International Cooperation, "Draft: The Fourth Five-Year Plan for Development," op. cit., p. 128; (B) Central Statistical Organization, "2015 Statistical Yearbook, Chapter 12: Transport and Travel, Table 2: Lengths of paved roads by governorate (in kilometers): 2013-15." [http://www.cso-yemen.com/publication/yearbook2015/Transport\\_Travel.xls](http://www.cso-yemen.com/publication/yearbook2015/Transport_Travel.xls) (Accessed February 12, 2021). These data refer to all governorates. (Main source: Ministry of Public Works and Roads).

4) The density of paved roads index is calculated by the total length of paved roads in the country (km) divided by the country's area (km<sup>2</sup>).

1000km<sup>2</sup>.<sup>[5]</sup> The density of paved roads available for Yemen's population amounts to just 0.666km/1000 people, which is very low compared to the global standard of 496km/1000 people.<sup>[6]</sup>

Over the years, the backlog of maintenance works has contributed to an inadequate road network, which poses significant road safety hazards. Yemen has a high rate of recorded road accidents, reaching nearly 9,000 in 2013, resulting in 2,494 deaths and 12,622 injuries (actual figures are likely much higher).<sup>[7]</sup> During the years 2018 and 2019, the total number of recorded accidents was approximately 11,405, resulting in 2,653 deaths and 16,403 injuries.<sup>[8]</sup>

The Global Status of Road Safety 2015 report, issued by the World Health Organization (WHO), stated that Yemen's road traffic death rate reached 21.5 deaths per 100,000.<sup>[9]</sup> Among the main factors contributing to unsafe roads were: 1) poor road conditions and the absence of safety features in their design; 2) reckless driving; and 3) ineffective implementation of laws and traffic regulations. Factors prevalent among drivers that contributed to unsafe roads were speeding, the use of communication devices (mobile phones) and not wearing seat belts. Many safety precautions were also not applied, such as periodic vehicle maintenance.

Other road safety hazards include the overloading of trucks, cars, and heavy machinery, which also causes damage to road infrastructure. These practices lead to additional maintenance costs. While Law No.

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- 5) Nabil Mohammed Al-Tiri, "Directing Infrastructure Spending and its Economic and Social Effects, Current Situation and Available Alternatives (AR)," Economic Observatory for Studies and Consultations (EOSC) Sana'a, Thursday, August 21, 2014, the first symposium on improving budget performance and ensuring social justice in cooperation with the German Friedrich-Ebert Foundation. p4. <https://www.eosc-yemen.org/images/DownloadCenter/ActivitiesFileS/EnhanceBudget/Nabil%20Paper.pdf> (Accessed April 1, 2021).
  - 6) Mohammad Fashlan Halloul, "Quantitative Analysis of the Efficiency of the Paved Roads Network in Al-Qadisiyah Governorate (AR)," Research published in Al-Qadisiyah Journal, University of Al-Qadisiyah, Department of Geography, Ministry of Education and Scientific Research, Iraq, May 12, 2018. p. 3. <http://qu.edu.iq/repository/wp-content/uploads/2019/04/%D8%A7%D9%84%D8%A8%D8%AD%D8%AB-%D8%A7%D9%84%D8%A3%D9%88%D9%84.pdf> (Accessed April 1, 2021).
  - 7) Central Statistics Organization, "Statistical Yearbook 2013, Chapter 12: Transport and Travel, Table 6: Vehicle Accidents Recorded by Type of Accident, Injuries and Deaths and Human Damage in the Governorates of the Republic: 2011-2013." [http://www.cso-yemen.com/publication/yearbook2013/Transport\\_Travel.xls](http://www.cso-yemen.com/publication/yearbook2013/Transport_Travel.xls) (Accessed February 4, 2021), (Main source: General Traffic Department, Ministry of Interior).
  - 8) Central Statistics Organization, "Statistical Yearbook 2019, Chapter 12: Transportation and Travel, Table 6: Vehicle Accidents Recorded by Type of Accident, Injuries and Deaths and Human Damage." (Unpublished data).
  - 9) World Health Organization, Regional Office for the Eastern Mediterranean, "Global Status Report on Road Safety 2015," Cairo, 2017, p. 254. <https://apps.who.int/iris/handle/10665/260163> (Accessed August 5, 2021).

23 of 1994 regulates the maximum weight and overall dimensions of all goods-transporting vehicles in the country, its weak implementation has led to damage to paved roads.<sup>[10]</sup>

The axle load of transport vehicles has been one of the main issues in road maintenance. The Road Maintenance Fund (RMF) planned to establish new weigh stations on Yemen’s road network in several areas, including the Al-Abr and Mukalla areas in Hadramawt governorate, the Al-Anad district in Lahj governorate and the Al-Alam district in Abyan governorate. However, these plans have been put on hold since the beginning of the ongoing conflict. The issue has received increasing attention. The Council of Ministers’ Decision No. 15 of 2019 addressed weigh stations and the total dimensions of fixed and mobile transport vehicles throughout the country. The Cabinet has ordered the formation of a committee to manage weigh bridges in all governorates<sup>[11]</sup> and discussed a legal mechanism to determine land transport loads in Al- Hudaydah governorate.<sup>[12]</sup>

## The Main Indicators of the Sector

Between 2010 and 2014, 942km of new asphalt/paved roads were built in Yemen, an increase of 6%. But between 2015 and 2019, only 30 new kilometers were built.<sup>[13]</sup> Tables 1 to 3 review some of the main statistical indicators for the sector.

**Table 1: Indicators of the total length of paved roads (in kilometers) 2010-2019**

Year	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Length	16,347	16,704	16,811	17,080	17,289	17,300	17,311	17,315	17,321	17,330

10) Ministry of Legal Affairs, “Official Gazette No. (20/4) for the year 1994 (AR).” For more information on the law, see [http://hrlibrary.umn.edu/arabic/Yemeni\\_Laws/Yemeni\\_Laws45.pdf](http://hrlibrary.umn.edu/arabic/Yemeni_Laws/Yemeni_Laws45.pdf) (Accessed February 4, 2021). It should be noted that through this law, the Roads Maintenance Fund works with the Ministry of Public Works and Highways, the Ministry of Transport and the Ministry of Interior to monitor and enforce the law.

11) Aden Lang, “The formation of a committee to count weigh stations in all governorates and implement Cabinet Resolution No. 15 (AR),” March 13, 2019. <https://www.adenlng.info/news/113504/> (Accessed February 5, 2019).

12) Yemen Press Agency, “Implementing the Mechanism of the Law of Determining Land Transport Loads in Al-Hodeidah Governorate” (press release), September 1, 2019, <http://www.yagency.net/192909> (Accessed February 5, 2021).

13) Central Statistical Organization, “Statistical Yearbook 2011– 2019. Chapter 12, Table 2.

**Table 2: Statistical indicators of international land transport in Yemen for the years 2014 and 2018<sup>[14]</sup>**

Statement	2014 <sup>[15]</sup>	2018 <sup>[16]</sup>	Change since 2014
Number of international land transportation companies	16	18	(+) 13%
Number of registered buses	697	605	(-) 13%
Number of arriving international trips	5,989	4,733	(-) 21%
Number of arriving passengers on international trips	217,870	189,336	(-)13%
Number of departing international trips	7,493	4,166	(-) 44%
Number of departing passengers on international trips	272,918	166,631	(-) 39%
Loaded truck movement (heavy and small truck) <sup>[17]</sup>	330,131	214,892	(-) 35%

**Table 3: Kilometers of asphalt road by governorates as of 2018<sup>[18]</sup>**

Governorate	Length	Relative distribution
Ibb	1,124	6.5%
Abyan	536	3.1%
Sana'a	1,921	11.1%
Al-Baydha	659	3.8%
Taiz	1,202	6.9%
Al-Jawf	417	2.4%
Hajjah	751	4.3%
Al-Hudaydah	1,184	6.8%
Hadramawt	2,867	16.5%
Dhamar	911	5.3%

14) Central Bureau of Statistics, MoT and General Authority for Regulating Land Transport Affairs (The data are drawn from all governorates in Yemen).

15) Central Statistical Organization, "Statistical Yearbook 2015, Chapter 12: Transport and Travel. Table 30: The total number of buses owned and registered with the facility, the number of trips and passengers by departure and arrival, and by international road transport companies / agencies for the years 2014 and 2015. (Main source of data: General Authority for Regulating Land Transport Affairs" [http://www.cso-yemen.com/publiction/yearbook2015/Transport\\_Travel.xls](http://www.cso-yemen.com/publiction/yearbook2015/Transport_Travel.xls) (Accessed February 12, 2021).

16) Central Statistical Organization, "Statistical Yearbook 2018, Chapter 12: Transport and Travel. Table 30: The total number of buses owned and registered with the facility, the number of trips and passengers by departure and arrival and by international road transport companies / agencies for the years 2017 and 2018." (Unpublished data).

17) Ministry of Transport, General Authority for Regulating Land Transport, "the summary of the movement of cargo trucks for the year 2014 and 2018". The data represents the movement of entry and exit of trucks between governorates. (unpublished data).

18) Central Statistical Organization, Statistical Yearbook, 2018, Chapter 12, Table 2. The lengths of asphalt roads by governorates (in kilometers) during the period 2016-2018.

Governorate	Length	Relative distribution
Shabwa	1,087	6.3%
Sa'ada	548	3.2%
Aden	211	1.2%
Lahj	606	3.5%
Marib	444	2.6%
Al-Mahweet	403	2.3%
Al-Mahra	960	5.5%
Amran	1,012	5.8%
Al-Dhale	242	1.4%
Raymah	236	1.4%
<b>Total</b>	<b>17,321</b>	<b>100%</b>

Unpaved roads represent a large portion of Yemen's total road network, at 70.2%. This constitutes a significant challenge for road development in the future. The breakdown of the country's road network is shown in Table 4.

**Table 4: Road types in Yemen as of the end of 2019**

Type of roads	Length in km	% of paved roads	% of the road network
International roads*	3,744	21.6%	6.4%
Main roads*	5,668	32.7%	9.7%
Secondary roads*	4,174	24.1%	7.2%
Rural roads*	3,744	21.6%	6.4%
Total paved roads*	17,330	—	29.8%
Total unpaved roads	40,870	—	70.2%
<b>The road network</b>	<b>58,200</b>	<b>100%</b>	<b>100%</b>

Sources: \* MoPWH, 2020. (Unpublished data)

19) World Bank, "Project information document, Pre-assessment stage, Corridor Highway Project (P145361) (AR)," February 24, 2014, Report No. PIDA3157 p. 2. <http://documents.worldbank.org/curated/fr/545861468346158860/PIDA31570ARABI00Box382170B00PUBLIC0.doc> (Accessed June 22, 2021).

## International Land Ports

Yemen has six formal international border crossings: Al-Wadea in Hadramawt governorate, Haradh in Hajjah governorate, Shahan and Sarfeet in Al-Mahra governorate, and Boqaa and Olab in Sa'ada governorate. These land ports play a vital role in the movement of passengers and cargo and are essential for trade, tourism and attracting investment. Consequently, the performance level, operational efficiency and infrastructure development of these land ports directly affect economic growth.

## Roads Infrastructure: Unlocking Rural Development

Yemen's population is predominantly rural, with 71.1% of the total population and 59.2% of the country's poor living in rural areas as of 2017 and 2014, respectively.<sup>[20]</sup> Rural residents are distributed over 140,000 villages and settlements scattered across the country, which makes it difficult to provide basic services reliably and at a reasonable cost.<sup>[21]</sup> Agriculture is a significant sector of the Yemeni economy, contributing to about 19.5% of the GDP in 2012. It is also the primary source of income for 73% of the population, either directly (33%) or indirectly, through services and industries related to the agricultural industry.<sup>[22]</sup> Road transport in rural areas is one of the most critical constraints to Yemen's economic growth and to poverty reduction efforts. Rural road networks fall well short of serving rural populations. Only 3,744km of rural roads are paved, representing only 6.4% of the total road network and 21.6% of paved roads.<sup>[23]</sup> Most unpaved rural roads are dirt tracks in deplorable condition, making travel tedious, slow and expensive. These roads do not provide rural communities with reliable access to services and markets, and are inaccessible

20) (A) Central Statistical Organization, "Statistical Yearbook 2017, Chapter 3: Population, Table, Main Demographic Indicators of Population," <http://www.cso-yemen.com/publication/yearbook2017/population.xls> (Accessed February 7, 2021). The table estimates the rural population at 20 million people or 71.2%, and the urban population at 8.1 million people or 28.9% of the total population in the year 2017. (B) Central Statistical Organization, "Statistical Yearbook 2017, Chapter 4: Poverty Line Indicators in Yemen, Table 3: Headcount poverty rate in Yemen." [http://www.cso-yemen.com/publication/yearbook2017/Indicators\\_of\\_Poverty\\_Line.xls](http://www.cso-yemen.com/publication/yearbook2017/Indicators_of_Poverty_Line.xls) (Accessed February 7, 2021). The latter data were drawn from the 2014 Household Budget Survey. Poverty rates have increased significantly since then.

21) World Bank, "Road Asset Management Project Information Document (P125135), Report No.: PIDA353 (AR)," December 14, 2012, pg 4. <http://documents1.worldbank.org/curated/en/722641468182056133/PIDA3530ARABIC0Box382142B00PUBLIC0.docx> (Accessed February 7, 2021).

22) World Bank, "Yemen Smallholder Agricultural Productivity Enhancement Project Information Document (P148747) (AR)," March 2015. <http://documents1.worldbank.org/curated/en/904741468188675303/PIDA160450ARAB0Box391418B00PUBLIC0.docx> (Accessed April 3, 2021).

23) See Table 4.

during the rainy season. On average, only a quarter of rural households live within 2km of a paved road.<sup>[24]</sup> Families lack easy access to local markets to buy food and necessities, with the closest market between 6km and 20km away for 40% of rural households and more than 20km for another 20%.<sup>[25]</sup>

The lack of roads in rural communities also negatively affects students' education, especially among female students. According to a Yemen situation report by UNICEF in October 2014, 87% of children in rural communities are not in school. Road conditions and travel time play an essential role in both enrolling children and keeping them in schools. Parents are less likely to send their children to school if they have to travel long distances, or fear that terrible road conditions could endanger their lives, which is often the case, as many of Yemen's roads traverse rugged terrain.<sup>[26]</sup>

Rough roads are also a challenge for delivery of health services, which further complicates the situation for Yemeni rural households. In some rural areas which lack roads, pregnant women have to travel on the backs of donkeys or are carried on wooden planks by men from their families to reach the closest health center.<sup>[27]</sup> Often, roads are impassable, which lead to tragic accidents and significant loss of life. Many have died on an arduous journey to the hospital because traveling a few kilometers can sometimes take hours.<sup>[28]</sup> Doctors without Borders (MSF) indicates that distance is a barrier to medical care. Between 2016 and 2018, the number of deaths in MSF-affiliated Hawban hospital in Taiz and Abs hospital in Hajjah governorate included 36 mothers and 1,529 children—1,018 of whom were newborns.<sup>[29]</sup> This was due to a number of factors, including difficulties in reaching health facilities

24) World Bank Group, "Transport Sector in Yemen: Yemen Policy Note (4): Comprehensive Service Delivery (AR)," April 24 2017. <http://documents1.worldbank.org/curated/en/387711508411653054/pdf/120532-REPLACEMENT-ARABIC-Yemen-Transport-Policy-Note-Input-to-PN-4-Final.pdf> (Accessed February 2, 2021).

25) UN Food and Agriculture Organization, Integrated Food Security Phase Classification "IPC Analysis – Summary of Results (AR)," March 1, 2017, p. 3. [http://agricultureyemen.com/PDF/ipc\\_yem\\_3\\_2017\\_en.pdf](http://agricultureyemen.com/PDF/ipc_yem_3_2017_en.pdf) (Accessed February 11, 2021).

26) UNICEF, "Yemen Country Report on Out-of-School Children (AR)," October 2014, pp. 64-65. [https://www.unicef.org/mena/media/6681/file/yemen%20Country%20Report%20on%20OOSC\\_AR.pdf](https://www.unicef.org/mena/media/6681/file/yemen%20Country%20Report%20on%20OOSC_AR.pdf) (Accessed February 9, 2021).

27) UNDP, "Paving Yemen's treacherous roads: A life-saving path towards economic recovery and social stability". July 08, 2020. [https://www.ye.undp.org/content/yemen/en/home/presscenter/articles/2020/paving-yemen\\_s-treacherous-roads--a-life-saving-path-towards-eco.html](https://www.ye.undp.org/content/yemen/en/home/presscenter/articles/2020/paving-yemen_s-treacherous-roads--a-life-saving-path-towards-eco.html) (accessed February 20, 2022).

28) Ibid.

29) Doctors Without Borders, "Mothers and Babies Left to Die in Yemen Without Access to Medical Care," April 24, 2019. <https://www.msf.org/mothers-and-children-left-die-yemen-without-access-medical-care> (Accessed February 10, 2021).

The road situation severely limits growth and development opportunities of rural communities. Life has become significantly more difficult for communities with the disruption of agricultural production, markets, transportation and distribution since Yemen entered into war more than six years ago, difficulties compounded by the spread of the coronavirus pandemic. A study by the World Bank suggests that rural road improvements could have a significant and tangible impact, projecting that the price of basic goods would drop 20%, and individual transport costs to health centers, schools and markets would decrease between 25-33%, with traveling time reduced by 65-70%.<sup>[30]</sup>

## Organisational Structure of RTS

The organizational structure of RTS consists of three ministries: the Ministry of Transportation (MoT) and its affiliates the General Authority for Regulatory Land Transport Affairs and the Local Land Transport Corporation; the Ministry of Public Works and Highways (MoPWH) and its affiliated entities, the General Corporation of Roads and Bridges, the RMF, Rural Access Program Central Management Office, and Foreign Funded Project Management Unit; and the Ministry of the Interior's (MoI) General Traffic Department. The MoT and MoI are the two government agencies managing the transport sector. The MoT sets policies for the sector, while MoI is tasked with inspections and vehicle licensing. The MoPWH is responsible for developing and maintaining the entire road network in Yemen and supervising road infrastructure.<sup>[31]</sup>

The main issues and problems that the sector's institutions faced before the current conflict can be summed up as follows:

1. Obsolete legislation and policies managing RTS; the laws are not up to date with the rapid and successive developments in the field of road and land transport. Road transport legislation and regulations have not been amended or updated since 1994, which constitutes one of the main obstacles to developing the sector and meeting users' needs. Consequently, this has affected the infrastructure of road transport:
  - a. Weak application of and failure to amend Law No. 23 of 1994, concerned with the weights and overall dimensions of transport vehicles, its executive regulations and Law No. 22 of 1995 concerning the RMF.

30) World Bank Group, "The Transport Sector in Yemen: Yemen Policy Note No. (4)," op. cit., p. 6.

31) The United Nations Human Settlements Program in Yemen (UN-Habitat) and UNESCO, "Aden: City Profile (AR)," 2020, p. 80. [https://unhabitat.org/sites/default/files/2020/11/aden\\_city.pdf](https://unhabitat.org/sites/default/files/2020/11/aden_city.pdf) (Accessed February 2021).

- b. Obsolete regulation and organizational structure of the MoPWH, which was originally established in 1995 as the Ministry of Construction, Housing and Urban Planning (MCHUP). The same regulations and structures setup in 1995 are still in place.
  - c. Lack of job descriptions and absence of organizational structure and regulations in several road transport institutions, such as the General Corporation for Roads and Bridges and the Land Transport Authority.
  - d. The multiplicity of supervisory bodies over the RTS duplicate responsibilities and constitute an obstacle to services and activities.
2. RTS suffers from inadequate expenditure policies and a lack of necessary funds. The current conflict has worsened the situation, as evidenced by the following:
  - a. Weakness and the lack of adoption of budgets that meet actual needs for operating expenses to provide spare parts and maintenance of equipment and cover training and rehabilitation costs.
  - b. Scarcity of road construction and maintenance budget allocations.
  - c. Salaries, which are already low, are often unpaid, and employees' incentives to work are weak.
3. Institutional weaknesses are mainly due to the lack of strategic plans for developing the RTS, inadequate staff training and the absence of work regulations and appropriate job descriptions. There are few advanced systems and technologies in operation.
4. There is only minimal focus on rural roads. Implemented projects are small and organized at the community level.

# REPERCUSSIONS OF THE WAR ON RTS

The war in Yemen has created a plethora of obstacles and complications to road travel. According to the Civilian Impact Monitoring Project report in October 2020, armed violence restricted the access of 2 million households to domestic and international transport infrastructure.<sup>[32]</sup> As indicated in table 2, there were significant reductions in road passenger arrivals (-13%) and departures (-39%) in 2018 compared to 2014. Trips by heavy and small loaded transport trucks during the same period dropped 35%.<sup>[33]</sup> Further repercussions of the war on the RTS are as follows:

## Infrastructure Damage

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The road and bridge sectors have incurred damage throughout the country during the ongoing conflict. The results of a March 2019 report by the Sana'a-based MoPWH showed that the damage to the road network affected 46 main roads and 99 bridges in Shabwa, Al-Dhale, Sa'ada, Taiz, Aden, Sana'a, Al-Hudaydah, Dhamar, Al-Bayda, Lahj, Hajjah and Amran.<sup>[34]</sup> The Ministry of Planning and International Cooperation (MoPIC) in the internationally recognized government (IRG) estimates that about 6,000km of roads have been destroyed during the conflict.<sup>[35]</sup> A technical report by the RMF in September 2019 found that about half of the main roads linking Yemeni cities require maintenance.<sup>[36]</sup>

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32) Yemen Civil Impact Monitoring Project, "Thematic Report: The Impact of Armed Violence on Yemen's Transportation Infrastructure," October 2020, p. 1, [https://civilianimpactmonitoring.org/onewebmedia/20201020\\_CIMP%20Thematic%2004\\_Transport.pdf](https://civilianimpactmonitoring.org/onewebmedia/20201020_CIMP%20Thematic%2004_Transport.pdf) (Accessed January 31, 2021).

33) See Table 2.

34) Saba Net, the website of the Yemeni news agency Saba, Sana'a, "About 823 billion Rials, the losses of the road bandits during the four years of the aggression," March 31, 2019, <https://www.saba.ye/ar/news531308.htm> (accessed: 5 August 2021). It should be noted that the report summarized during the preparation of studies, designs and tests for the targeted sites the direct material losses resulting from the following: the destruction of roads and bridges, the work of removing and crushing the destroyed parts, the costs of transporting and transporting waste and the rehabilitation and construction of the destroyed bridges and targeted roads.

35) MoPIC, "Priorities for Reconstruction and Economic Recovery: Urgent Priorities, op. cit., pg. 32, Table 5: Damage costs and recovery needs for the works and transport sector".

36) MoPWH, RMF, Technical Report (AR), September 2019. [https://drive.google.com/file/d/1AdXmf\\_VoprX3ZoWVeW13H\\_ODBMebiWIu/view](https://drive.google.com/file/d/1AdXmf_VoprX3ZoWVeW13H_ODBMebiWIu/view) (Accessed February 04, 2021). In light of these findings the report indicates that IRG decided to establish the Roads Maintenance Fund in the temporary capital of Aden to start maintenance work on the roads under the modern Yemeni state.

In this context, the Yemen Dynamic Needs Assessment: Phase 3 (DNA), released by the World Bank, indicates that the conflict has severely impacted intra-city roads in all 16 cities that were assessed.<sup>[37]</sup> Many major roads were partially damaged or completely destroyed, rendering them unusable or only capable of running limited operations. Overall, 29% of the total intra-urban road network was damaged or destroyed.<sup>[38]</sup> Damage levels were highest in Al-Hazm city in Al-Jawf governorate, at 70%, followed by the cities of Sa'ada and Taiz, where more than half the roads have been damaged due to conflict.

The World Bank report states that immediately after the end of the conflict in Yemen, there will be a pressing need for the rehabilitation and maintenance of at least 5,000 to 6,000km of high-priority rural roads.<sup>[39]</sup> According to estimates by the MoPWH in Sana'a, the cost of restoring, repairing and rebuilding the roads and bridges destroyed by the war between 2015 and 2018 is approximately \$1.45 billion.<sup>[40]</sup> The MoPIC report estimated the costs of road damage in 16 cities<sup>[41]</sup> at about \$1.35 billion.<sup>[42]</sup> The World Bank puts the cost of emergency road maintenance works at about \$120 million for the first year. The estimated cost of the rehabilitation and reconstruction of roads and bridges is about \$635 million.<sup>[43]</sup>

These are only preliminary estimates. Calculating the total cost requires an accurate field evaluation to determine the full extent of damages, which is not currently possible. The suspension of periodic and routine maintenance work throughout Yemen due to the war, and the scarcity of available funds to resume these activities, also adds to the direct costs.

37) World Bank Group, "Yemen Dynamic Needs Assessment: Phase Three" (DNA 2020), 2020, p. 129, <https://reliefweb.int/sites/reliefweb.int/files/resources/Yemen-Dynamic-Needs-Assessment-Phase-3-2020-Update%20%281%29.pdf> (Accessed on February 12, 2021).

38) Ibid.

39) Ibid.

40) Saba Net, the website of the Yemeni news agency Saba, Sana'a, "About 823 billion Rials, the losses of the road sector during the four years of the aggression," *ibid.*

41) It should be noted that the 16 cities that were included in the World Bank's third phase assessment are: Al Dhale', Aden, Al Hazm, Amran, Bayhan Dhamar, Hodeidah Al Khokha, Lahj, Lawdar, Marib City, Mocha, Radaa' Saada, Sana'a, Taiz. While the 16 cities were not identified in the Reconstruction and Economic Recovery Priorities: Urgent Priorities plan issued by the Ministry of Planning and International Cooperation but indicated reliance on the damage assessment results and identification of needs carried out by the World Bank.

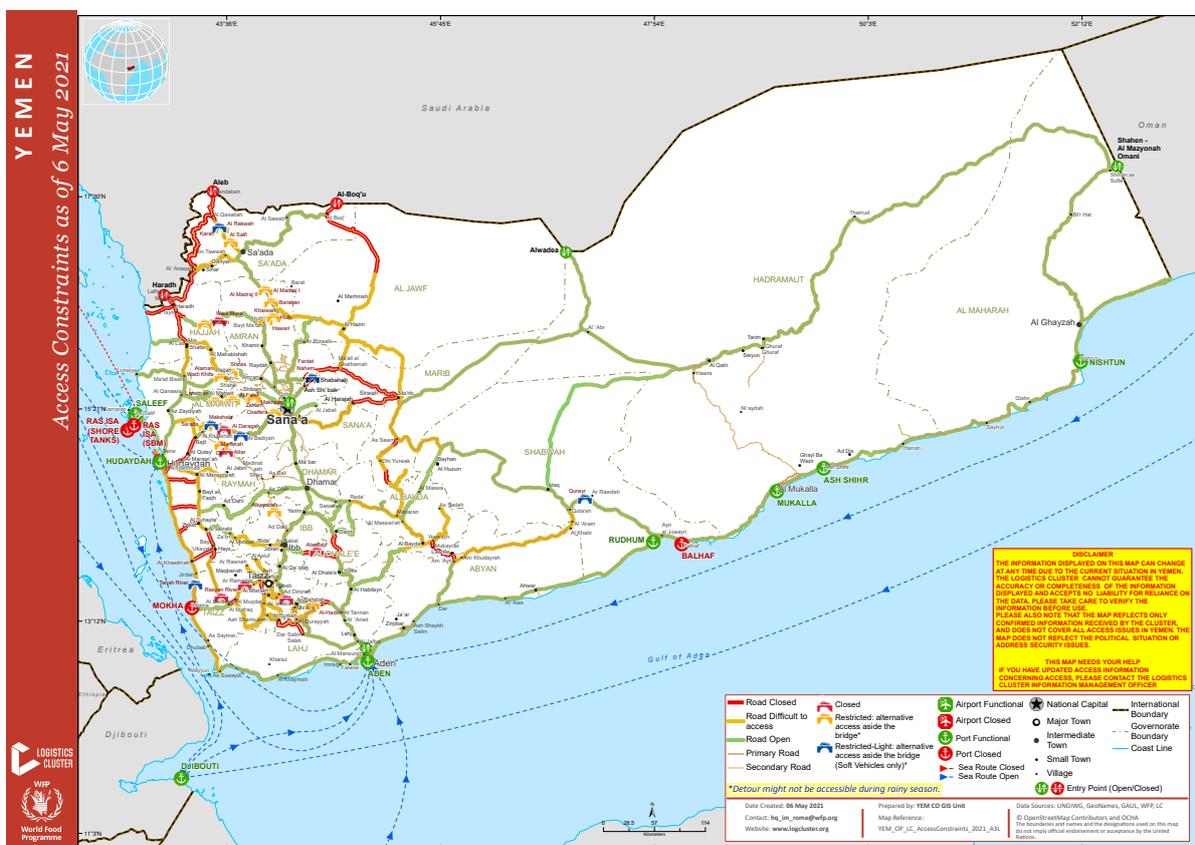
42) MOPIC, "Priorities for Reconstruction and Economic Recovery: Urgent Priorities," *op. cit.*, p32, Table 5: Damage costs and recovery needs for the works and transport sector. The cost of recovery and reconstruction needs in 16 cities for two years (2019 and 2020) is estimated at \$1,2 billion. Recovery and reconstruction needs in 16 cities between 2019 and 2023 are estimated at \$2 billion, including land, air, sea and road transport. details: Ministry of Planning and International Cooperation, "The Plan of Priorities for Reconstruction and Economic Recovery: Urgent Priorities," the aforementioned reference p. 44.

43) World Bank Group, "Towards a Plan for Yemen's Recovery and Reconstruction (Draft for Discussion), October 2017, p. 26, Table 4-2: Transportation – Estimated Costs of Maintenance, Rehabilitation, and Reconstruction (in millions of US dollars)."

## Road Closures Between Governorates

One of the main obstacles to road transport is the closure of roads between governorates. Passenger routes and trade routes have changed significantly during the war, due to road closures, damages and forced diversions, increasing transport costs and journey times. The following map shows the current status of roads between the governorates, according to the UN’s Logistics Cluster in Yemen.<sup>[44]</sup>

**Figure 1: Map of roads in Yemen, May 6, 2021**



*Red: Road Closed; Yellow: Road Difficult to Access; Green: Road Open.*

Figure 1 summarizes the impact of the war on the movement of passengers and goods through Yemen’s road network. Ground battles have led to the closure of the 173km-main road linking Sana’a and Marib. It would normally take about three hours to traverse this route. The alternative route, Sana’a-Dhamar-Al-Bayda-Marib, is 418km long and takes about nine hours to complete. The closure of the two shortest

44) World Food Program, Logistics Cluster, “Access Constraints”, May 2021: [https://cdn.logcluster.org/public/2021-06/YEM\\_LC\\_OP\\_AccessConstraints\\_A3L\\_20210506.pdf](https://cdn.logcluster.org/public/2021-06/YEM_LC_OP_AccessConstraints_A3L_20210506.pdf) (Accessed on: June 21, 2021).

highway routes between Sana'a and Aden has forced Yemenis to use longer, alternative routes that were not built for heavy trucks and passenger buses. This has reduced commercial and passenger traffic and caused significant delays for trucks carrying humanitarian aid. Aid convoys now require over 60 hours to make the trip, which is four to ten times longer than it used to be.<sup>[45]</sup> The closure of the Al-Hawban-Taiz road has led to the use of alternative roads, fraught with risks for passenger and cargo transportation. The 10km trip, which previously took ten minutes and cost YR100,<sup>[46]</sup> now takes between 5 to 8 hours, and may cost up to YR15,000, almost the equivalent to a journey from Sana'a to Taiz.<sup>[47]</sup> In total, approximately 928km of roads, or about 6% of the total road network, remain partially closed, inaccessible or completely closed.<sup>[48]</sup>

## Widespread Checkpoints

Traveling between governorates poses numerous risks as conflict continues. Many travelers suffer from harassment and attacks, including patients going to the Aden and Sayoun airports for treatment abroad, pilgrims passing through the Wadea border crossing to undertake the Hajj or Umrah. They are held for long hours during which they experience abuses from authorities at checkpoints.<sup>[49]</sup> For example, the UN concluded that the establishment of a new checkpoint at the entrance of Zinjibar city in Abyan governorate in early 2020 impeded the movement of residents hailing from northern Yemen.<sup>[50]</sup>

45) OCHA, "Humanitarian Development Report in Yemen, May 7-20, 2019, No. 8, p. 1: The closure of the shortest routes through Qataba district in November 2018 were due to the fighting in Damt district," <https://reliefweb.int/sites/reliefweb.int/files/resources/issue%208%20EN.pdf> (Accessed February 17, 2021).

46) Salah Al-Jundi, "The road to Al-Hawban in Taiz...suffering burdens travelers and disturbs their lives (AR)," Al-Ayyam newspaper, October 1, 2017. <https://www.alayyam.info/news/75B4HPH4-KWMXYG> (Accessed June 17, 2021).

47) Safeyya Mahdi, "Yemen: the daily path of death after the closure of the Al-Hawban-Taiz port (AR)," October 6, 2019. <https://daraj.com/22435/#> (Accessed June 17, 2021).

48) World Bank Group, "Yemen Dynamic Needs Assessment: Phase Three," 2020 update, p. 154. <https://documents1.worldbank.org/curated/en/490981607970828629/pdf/Yemen-Dynamic-Needs-Assessment-Phase-3-2020-Update.pdf> (Accessed February 12, 2021).

49) Aisha Al-Warraq, "Yemen's Travel Saga: Unexpected Airport Traffic and Perilous Roads (AR)," Sana'a Center for Strategic Studies, November 10, 2019. <https://sanaacenter.org/ar/publications-all/analysis-en/8377> (Accessed February 1, 2021).

50) The United Nations Human Settlements Program in Yemen (UN-Habitat) and the United Nations Educational, Scientific and Cultural Organization (UNESCO), "Zinjibar: Urban Profile (AR)," 2020, p. 79. [https://unhabitat.org/sites/default/files/2020/11/zinjibar\\_arabic\\_profile.pdf](https://unhabitat.org/sites/default/files/2020/11/zinjibar_arabic_profile.pdf) (Accessed February 17, 2021).

## Institutional Division

The ongoing conflict has intensified the institutional divide between the IRG and Ansar Allah in various vital economic sectors, including the RTS. In addition to impaired skills and training development in the sector, the political divide has led to staff quitting as a result of delayed payments and low salaries, the lack of incentives and the disruption of efforts to enhance RTS services and the maintenance and development of its infrastructure.

Companies in the RTS have suffered financial losses from the institutional divide, which has also led to divergent policies, financial claims by the authorities in Sana'a and Aden, confiscation of assets and extortion at checkpoints. Competing policies have evolved in ways that negatively impact service providers and the quality of services delivered to users. The situation caused one company, Raha Transport Company, to terminate operations and lay off its staff on May 20, 2020. Road transport companies are caught between Ansar Allah authorities and the IRG, illustrated by the following:<sup>[51]</sup>

- Service providers are now required to pay high taxes imposed by all official and unofficial authorities in all governorates of Yemen, in addition to licensing fees and taxes levied by the two parties. The IRG considers itself the rightful authority to collect these fees as it is recognized internationally; whereas AA regards itself as the de facto government, with a legitimate claim to collect the fees from companies.
- Land transport companies' vehicles face complicated procedures at security checkpoints throughout the country. Hours-long delays at these checkpoints increase the operating costs of transport because security authorities haven't agreed on a unified policy.

51) Almasdar Online, "Yemen's Land Transport Companies Syndicate issued statement on ... 'Yemen's dying road transport sector' upon the closure of Raha Transport Company (AR)," May 28, 2020. <https://almasdaronline.com/author/6395> (Accessed June 21, 2021).

## Increase in Road Transportation Fees

Road transportation fees increased by 208% between December 2013 and the end of December 2020<sup>[52]</sup> due to a lack of security, road damages, informal payments at checkpoints and long detours.<sup>[53]</sup> The rise of fuel prices has also affected transportation fees. The price of diesel was estimated at 410YR per liter in December 2020, a rise of 173% compared to the pre-conflict price of 150 YR per liter.<sup>[54]</sup> Fuel prices have fluctuated wildly throughout the war, but have risen overall.

## Impediments to Road Projects

The conflict has resulted in the cessation of maintenance and repairs for highways and bridges, denying thousands of workers all over the country income-generating job opportunities.<sup>[55]</sup> According to the MoPWH report, the main problems facing road projects are as follows:<sup>[56]</sup>

1. Increased fuel prices, which represent the principal cost of road projects due to the usage of heavy equipment.
2. Increased prices of other materials like steel, cement, and spare parts due to the depreciation of the Yemeni rial.
3. Delays in settling payments owed to contractors.
4. Cessation of funding for projects by donors.
5. Inability to provide adequate funding to implement projects during specified timelines<sup>[57]</sup>

52) (A) Central Statistical Organization, "Consumer price index bulletin tables for 2013, monthly consumer price index table of Yemen for 2013 (AR)." [http://www.cso-yemen.com/publication/arkam\\_2012/2013/arkam\\_13\\_2013.xlsx](http://www.cso-yemen.com/publication/arkam_2012/2013/arkam_13_2013.xlsx) (Accessed June 22, 2021). (B) Central Statistical Organization, "Consumer price index bulletin tables for 2020," (Unpublished data).

53) World Bank Group, "Yemen Policy Note (3): Private sector readiness to contribute to reconstruction and recovery in Yemen (AR)," May 23, 2017. <http://documents1.worldbank.org/curated/en/502631508411670729/pdf/120538-REPLACEMENT-ARABIC-Yemen-PN-No-3-Edited-SS-Final.pdf> (Accessed February 15, 2021). The report noted that local land transportation fees increased in excess of sea freight charges to Yemen; for example, the cost of transporting goods from Aden to other governorates is estimated at \$2,800.

54) Food and Agriculture Organization of the United Nations (FAO), "Monthly market watch report, issue 65 (AR)," December 2020, page 2. [http://fstis-gov.com/sites/default/files/AO\\_FSTIS%20Market%20Monitoring%20Bulletin\\_Dec\\_20\\_Ar.pdf](http://fstis-gov.com/sites/default/files/AO_FSTIS%20Market%20Monitoring%20Bulletin_Dec_20_Ar.pdf) (Accessed April 2, 2021).

55) World Bank Group, "Transport Sector in Yemen: Yemen Policy Note (4) (AR)," op. cit.

56) Ministry of Public Works and Highways, 2020/2021 project (Unpublished document).

57) According to the Cabinet's decision No. 30 of 2013, a mechanism was adopted to implement price solutions due to the increase in the prices of oil products while adopting several other decisions, including: 1) the need to limit and settle 199 stalled projects, 2) implementation of specific projects until reaching a specific implementation phase then ending its contracts, limiting, and awarding it in public procurements to settle its cases and continue its implementations according to contracts annexes published to correct costs that were included in the original contract.

The MoPWH stated that the ongoing conflict has halted many development projects, leading to the complete closure of some roads. This has led to the deterioration of the road network in addition to the war-related damages to the road and bridge network.<sup>[58]</sup> The MoPIC's recovery and priority plan of 2019 prioritized reconstruction projects and projects currently underway, and the assumption of stalled projects.<sup>[59]</sup> The report estimated that 286 projects require surveying and liquidation (i.e. cancelling the contract with the current contractors). The projects amount to about 14,000km of road and would have cost an estimated YR849 billion to complete.<sup>[60]</sup>

**Table 1: Status of IRG road projects<sup>[61]</sup>**

Projects in progress		Number of projects	Total length of projects (km)	Surveyed projects	Projects being surveyed	Remaining projects
1	Projects contracted for implementation through public procurement	41	732	5	7	29
2	Proposed projects that need improvements (direct assignment contracts)	30	1045.4	1	3	26
3	Road projects underway in accordance with previous contracts and annexes (direct assignment contracts)	181	8893.9	19	17	145
4	Stalled road projects + proposed projects to be surveyed and contracts terminated, listing remaining works in a new public tender	199	6005.4	46	67	86
<b>Total number of projects</b>		<b>451</b>	<b>16676.7</b>	<b>71</b>	<b>94</b>	<b>286</b>

58) Ministry of Public Works and Highways, Road Maintenance Fund (Aden), "Minister of Public Works and Highways speech (AR)," June 30, 2019, <http://rmf-yemen.org/NDetails.aspx?contid=4> (Accessed February 15, 2021).

59) MOPIC, "Reconstruction priorities and economic recovery plan: Urgent priorities (AR)," June 2019, pg. 27. (Accessed February 7, 2021). The priority policies and intervention plan of public finance considered settling stalled projects as the top priority.

60) MPWH, "Current Situation Analysis Report," December 2020, (unpublished report).

61) MoPWH, Road Sector, Ministry of Public Works program 2020/2021. (Unpublished document).

## Obstacles to Passenger and Goods Transportation Through International Land Ports

Land port disruptions have hindered Yemen's international overland trade and the movement of passengers, particularly with the closure of three key land ports in populated areas along Yemen's border with Saudi Arabia: Haradh (Tawal) in Hajjah; and Al-Boqaa and Olab in Sa'adah.

The total amount of traffic through land ports in Yemen decreased from more than 3.3 million people in 2014 to just 108,500 in 2017, a reduction of nearly 97%.<sup>[62]</sup> By 2017, all traffic from Saudi Arabia was funneled through the Al-Wadea border station, the only crossing still open. More than one million Yemeni workers, traders and pilgrims are currently in Saudi Arabia. Having only one open border crossing has caused significant problems for Yemeni travelers, including longer travel times, deterioration of the adjoining road crashes and overcrowding at the port entrance, which lacks the required infrastructure to accommodate these levels of traffic

**Table 6: Number of people traveling through Yemeni border crossings between 2014 and 2017**

Year	Yemenis		Arabs		Foreigners		Total	
	Departures	Arrivals	Departures	Arrivals	Departures	Arrivals	Departures	Arrivals
2014	1,403,886	878,522	494,974	505,625	14,426	13,773	1,913,286	1,397,920
2015	154,359	117,699	188,931	194,140	4,895	4,188	348,185	316,027
2016	52,656	39,890	730	679	677	496	54,063	41,065
2017	42,452	56,765	2,652	2,434	1,864	2,348	46,968	61,547

Land ports are essential to overland trade. The Haradh (Tawal) port in Hajjah governorate controlled over 50% of overland international trade traffic before the war.<sup>[63]</sup> but fighting led to its closure in May 2015 and it has remained closed except for irregular traffic movements. Traders are obligated to take alternative, longer routes to transport Yemeni exports to Saudi Arabia through Al-Wadea border crossing, which is 565km from Sana'a (seven to eight hours by car), and nearly twice the

62) (A) Central Statistical Organization, Statistical Yearbook 2014, Chapter 12: Transportation and Travel, Table 18: Arrivals and Departures from and to the Territories of the Republic of Yemen by Ports During the Period 2012-2014, [http://www.cso-yemen.com/publication/yearbook2014/Transport\\_Travel.xls](http://www.cso-yemen.com/publication/yearbook2014/Transport_Travel.xls) (accessed August 6, 2021). (B) Statistical Yearbook 2017, Chapter 12: Transportation and travel, arrivals and departures to and from the territory of the Republic of Yemen by ports during the period 2015-2017, [http://www.cso-yemen.com/publication/yearbook2017/Transport\\_Travel.xls](http://www.cso-yemen.com/publication/yearbook2017/Transport_Travel.xls) (date Accessed: August 6, 2021).

63) Central Statistical Organization, "Statistical Yearbook 2014, Chapter 24: Foreign Trade, Table 12 and Table 13," op. cit.

distance.<sup>[64]</sup> The Shahren Crossing is located along the Yemen-Oman border, in the far east of the country. Between 2014 and 2017, cargo flows through the two open border ports (Al-Wadea and Shahren) decreased due to complicated customs requirements.<sup>[65]</sup> Imports decreased 18%, exports and re-exports dropped 74% and 95%,<sup>[66]</sup> respectively, as shown in the table below.

**Table 7: Imports, Exports, and Re-exports through border ports for years 2014 and 2017**

Year	Imports	Exports	Re-exports
2014	294,097	62,693	29,080
2017	240,244	16,392	1,511
Changes since 2014	(-) 18%	(-) 74%	(-) 95%

Border crossings are a significant source of national income. The total number of tourists entering by land in 2014 was 821,000, 67.4% of the total.<sup>[67]</sup> Data from the Ministry of Tourism indicates that 76.1% of tourism comes through three ports: Haradh (Tawal), Boqaa and Olab (Sa'adah). This data is broken down in detail in the following table.

**Table 8: Tourists entering by land for 2014 and 2015**

Ports (Governorates)	2014	%	2015	%
Haradh (Tawal) (Hajjah)	501,615	61%	60,861	28%
Boqaa (Sa'adah)	96,873	12%	85,118	39%
Olab (Sa'adah)	26,251	3%	5,722	3%
Shahren (Al-Mahra)	13,593	2%	4,918	2%
Sarfeit (Al-Mahra)	58,688	7%	22,855	10%
Al-Wadea (Hadramawt)	123,976	15%	39,351	18%
<b>Total</b>	<b>820,996</b>	<b>100%</b>	<b>218,825</b>	<b>100%</b>

64) World Bank Group, "Yemen Policy Note (3): Private sector readiness to contribute to reconstruction and recovery in Yemen," op. cit., pg. 13.

65) OCHA, Humanitarian Developments in Yemen Report, op. cit., pg. 8.

66) (A) Central Statistical Organization, "Statistical Yearbook 2014, Chapter 24: Foreign Trade, Table 12: Imports by customs ports: 2014-2016, and Table 13: Exports and re-exports by customs ports: 2014-2016." [http://www.cso-yemen.com/publication/yearbook2014/Foreign\\_Trade.xls](http://www.cso-yemen.com/publication/yearbook2014/Foreign_Trade.xls) (Accessed February 8, 2021). (B) "Statistical Yearbook 2017, Chapter 24: Foreign Trade, Table 12: imports by customs ports in 2015-2017, and Table 13: exports and re-exports by customs ports in 2015-2017." [http://www.cso-yemen.com/publication/yearbook2017/Foreign\\_Trade.xlsx](http://www.cso-yemen.com/publication/yearbook2017/Foreign_Trade.xlsx) (Accessed February 8, 2021).

67) Central Statistical Organization, "Statistical Yearbook 2017, Chapter 18: Tourism, Table 7: Inbound tourism by regions and means of transportation for 2014-2015." <http://www.cso-yemen.com/publication/yearbook2017/Tourism.xls> (Accessed on June 22, 2021).

A study by the federation of Yemen Chambers of Commerce and Industry<sup>[68]</sup> suggests that borders stations may be more important to Yemen's economic growth prospects than air and seaports for several reasons, including:

1. Shorter time requirements for goods transport.
2. Lower costs of importing goods compared to air and seaports.
3. Fewer damages resulting from goods transport and discharge processes.
4. Land ports encourage private sector trade on both sides of the border.
5. Land ports facilitate tourism and transportation with neighboring countries.

However, land ports lack many basic requirements of development. Yemen's joint delegation of private sector and governmental authorities pointed out in a 2010 report the developmental challenges facing Yemen's land ports (using Al-Wadea as an example) including:<sup>[69]</sup>

- The facilities, services, work tools and equipment are still behind industry standards.
- Work is done in temporary buildings that lack equipment and cannot accommodate arriving and departing passengers.
- The ports still suffer from electric power outages, a lack of plumbing, and a scarcity of human, financial and technical capacity.
- Absence of offices for governmental bodies connected to trade (e.g., specifications and standards authority, health office or agriculture office).
- Poor security services.
- Some ports do not operate around the clock.
- Road problems, including a lack of regular maintenance and regulatory traffic signs and narrow streets.

68) Federation of Yemen Chambers of Commerce and Industry; Chamber of Commerce and Industry in Sana'a Municipality; Hadhramout Chamber of Commerce and Industry; The General Authority for Regulating Land Transport Affairs; Paper submitted to the workshop: "Quality of Service in Land Ports and their Role in Activating Tourism and Facilitating Transport and Trade, Al-Wadea Land Port," Sana'a, Movenpick Hotel, January 10-11, 2010.

69) Ibid.

# RECOMMENDED POLICIES TO ADDRESS THE IMPACTS OF WAR ON THE ROAD TRANSPORT SECTOR

## Urgent Policies

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**First:** Urgent efforts should be made to insulate RTS from the ongoing military and political conflicts that have caused extensive physical damages to the sector and prevented the delivery of efficient and effective services. Mediation efforts at local, sub-national and national levels should be supported to open vital roads, and mediators should work with security authorities to adopt a unified mechanism for inspections to prevent the duplication of work. An economic mediation track should be established to discuss the issue of duplicate taxation and exert pressure on the conflict parties to adopt temporary, coordinated taxation policies that ease the burden of increasing prices on citizens.

**Second:** Immediate solutions for stalled road projects:

- Formulate a plan to survey and liquidate previously contracted projects to help ensure proper rescheduling and organization of future projects based on funding plans.
- Provide feasibility studies for significant projects so they are ready for implementation when funding becomes available.
- Replace incompetent contractors according to procurement laws.

**Third:** Intelligent transportation systems should be developed and implemented for passenger buses and cargo trucks, such as the following:

- Electronic networking of mass transportation buses traveling between governorates to increase the efficiency and effectiveness of service delivery throughout Yemen. Require transportation companies to obtain formal licenses and install GPS devices to ensure the safety and security of passengers.
- Investigate the possibility of utilizing electronic payments for cargo trucks traveling between governorates to streamline payments and agreements on how these revenues can be shared between the parties in the short term.
- Implement electronic surveillance systems and intelligent transportation technology to address the unnecessary stopping of trucks for long periods at border crossings and checkpoints, allowing visibility at central command level and increasing accountability.

## Medium and Long-Term Policies and Programs (Post-Peace Agreement)

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- Establish land ports at the entrances to main cities to regulate passenger and cargo traffic decrease freight rates and provide temporary storage areas to facilitate control and inspection processes.<sup>[70]</sup>
- Improve inter-governorate and international transportation services by providing public passenger terminals, rest stations and maintenance centers, while enhancing control and inspection processes to achieve transportation quality assurance.
- Assign competent local contractors for the reconstruction of RTS and enhance their capacity to consult engineers.
- Prepare post-war plans and programs that aim to implement development programs for roads and bridges. Eliminating accumulated burdens on the road sector and turning them into future development programs should be a key component of these plans.

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70) The dry port is an equipped facility established inside the country away from the seaport. Dry ports are placed in areas adjacent to the industrial cities as well as consumption areas, to benefit from the savings of multimodal transport. Most countries of the world are keen to establish such ports. For more details: Wissam Mahmoud Darwish, "Assessment of Operational Integration between Dry Ports and Seaports in the Syrian Arab Republic", a paper submitted to obtain a Master's degree in Business Administration, Faculty of Economics, Tishreen University, Latakia, Syrian Arab Republic 9/29/2016. <http://nsr.sy/df509/pdf/7999.pdf> (accessed August 5, 2021).

# RECOMMENDED INFRASTRUCTURE POLICIES FOR RURAL AND URBAN ROADS

## Urgent Policies

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- Due to the importance of rural roads, a part of the urgent and humanitarian assistance should be directed toward the construction and repair of rural and community roads through various existing programs such as MoPWH's community roads program, the Social Fund for Development and the Public Works Project. The government and donors should ensure more access and opportunities for all disadvantaged rural areas, particularly in war-torn regions.
- Focus on supporting rural road maintenance that benefits the roads most used by sectors like agriculture, health and education, and which provides the most job opportunities and benefits for rural areas.
- Support and encourage community initiatives in rural areas to pave community roads in regions with mountains and rough terrain.
- Conduct road planning processes in a more inclusive way by engaging local authorities, the local private sector, and local specialists in agriculture, health and education.

## Medium and Long-Term Policies and Programs (Post-Peace Agreement)

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- Develop a strategic program to expand the scale of rural road projects. The program should be part of a plan that aims to decrease rural poverty, as such roads can increase and diversify farmers' income by connecting them to other markets.
- Prioritize rural road projects that connect agricultural, livestock- and fish-producing regions with consumer and manufacturing centers and ports for export.
- Connect touristic and archeological sites to the main road network to support tourism development.

# RECOMMENDED POLICIES FOR ROAD MAINTENANCE AND REPAIRS THAT IMPACT COMMERCIAL TRAFFIC

## Urgent Policies

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- Implement Law No. 23 of 1994, “Total weights and dimensions”, and its executive bylaws, to relaunch weight stations affected by the war and enhance stations in critical transportation governorates such as Aden, Taiz, Hudaydah and Hadramawt.
- Upgrade and update programs for weight measurement and to raise awareness about the hazards of overloading.
- Implement road safety measures on inter-governorate roads, raise awareness and promote road safety culture among various segments of society.
- Conduct studies and develop programs for operating mobile weighing stations (Axial load weighing stations or weight control stations, intended to reduce overloads) throughout the road network, upgrade and update weight measurement equipment and processes and design comprehensive awareness campaigns for road users about the impact of weight overload on the road network.
- Take steps to increase competition within the heavy land transport sector specialized in transporting goods. Thus, it will result in reducing the financial costs of transporting goods between governorates, combating any efforts to monopolize the sector, and encouraging the practice of transporting goods on land roads for individual trucks (heavy, medium, and light), refrigerated container transport trucks, and non-refrigerated, freight forwarding offices and facilities, and freight forwarding agencies.

## Medium and Long-Term Policies and Programs (Post-Peace Agreement)

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- Conduct an inclusive survey to identify the current status of the road network, concerning:
  - The damages and required costs of reconstruction of affected roads in coordination and collaboration with donors.
  - Road management systems and safety tools.
  - Services and standards necessary for future expansion plans and maintenance requirements.

- Develop a mechanism for the collection of Road Maintenance Fund fees at the designated rate mentioned in Law no 22/ 1995, which is 5% per liter of petrol and diesel sold within the country.
- Enhance international border stations by improving the infrastructure as well as providing equipment, means of work, facilities and services that are concerned with the movement of passengers. Finally, enhance international border stations by increasing the presence of government agencies' offices concerned with commercial exchange, in order to facilitate the movement of incoming and outgoing goods.

# RECOMMENDATIONS FOR UPDATING THE INSTITUTIONAL STRUCTURE OF ROAD TRANSPORTATION

## Urgent Policies

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- Develop the institutional capacity of road transport institutions.
- Develop human resources capacity, which will require:
  - Paying the salaries of RTS staff.
  - Raising wages and giving bonuses.
  - Providing training and qualification programs
- Provide the required funding for the maintenance and operation of RTS equipment and systems to improve readiness for reconstruction and decrease costs.

## Medium and Long-Term Policies and Programs (Post-Peace Agreement)

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- Develop a legislative, institutional and organizational framework for RTS based on recent developments. Priority should be given to the General Corporation of Roads and Bridges (GCRB) and the Land Transport Regulatory Authority (LTRA).
- The Road Maintenance Fund should advance payments to GCRB for maintenance of equipment and heavy vehicles and deduct those advancements from payments to the GCRB when implementing maintenance projects financed by the fund.

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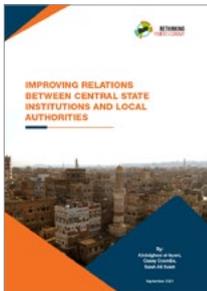
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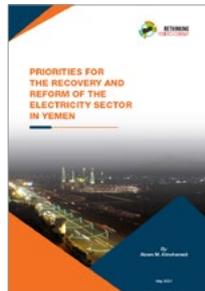
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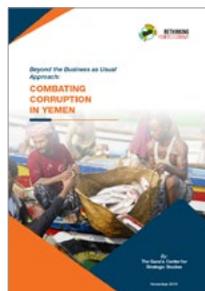
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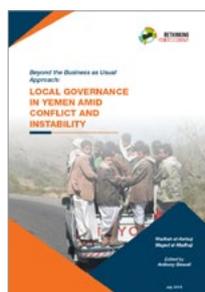
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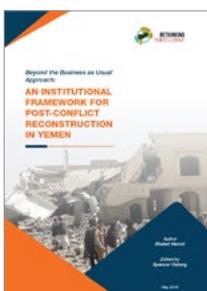
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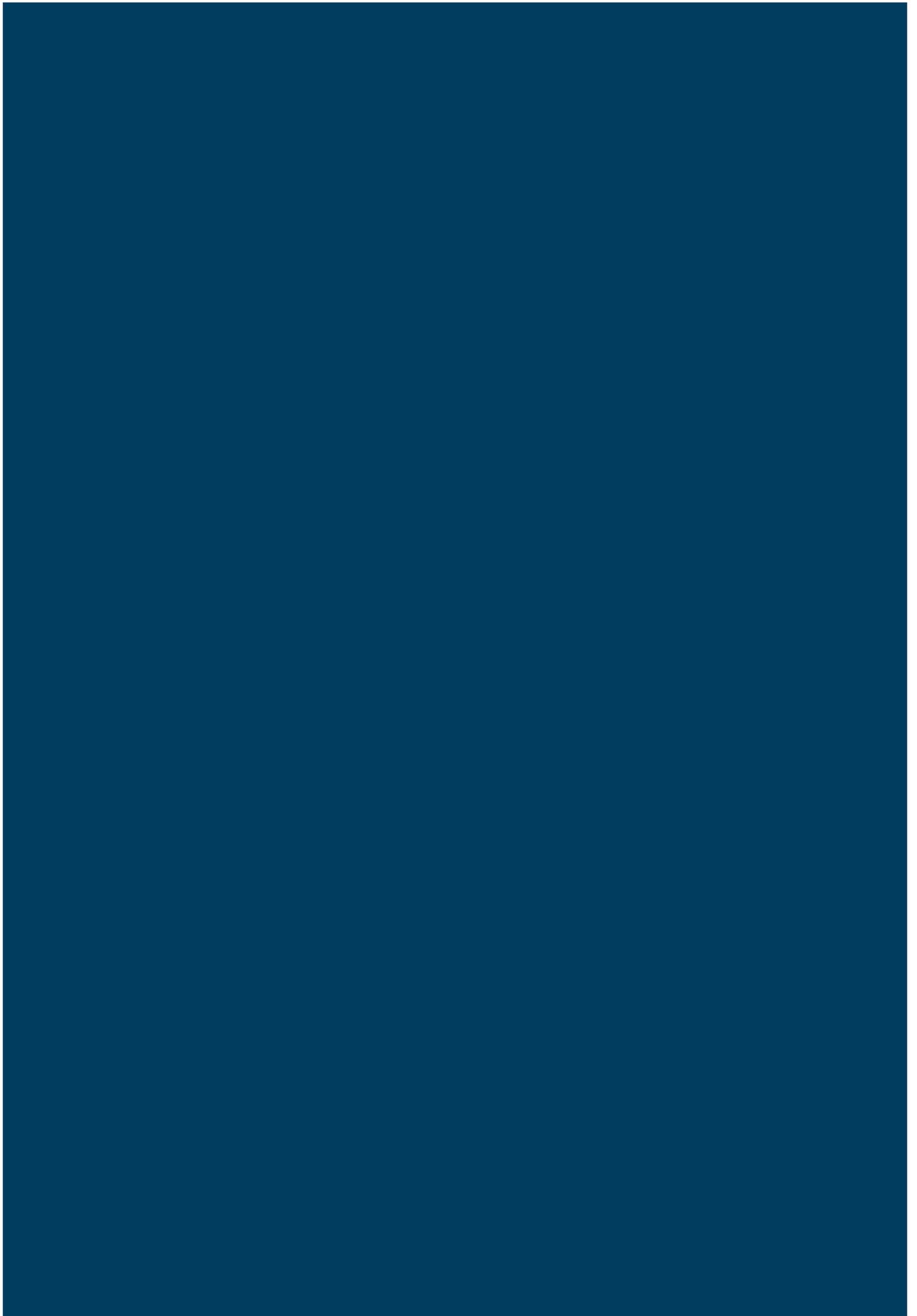
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