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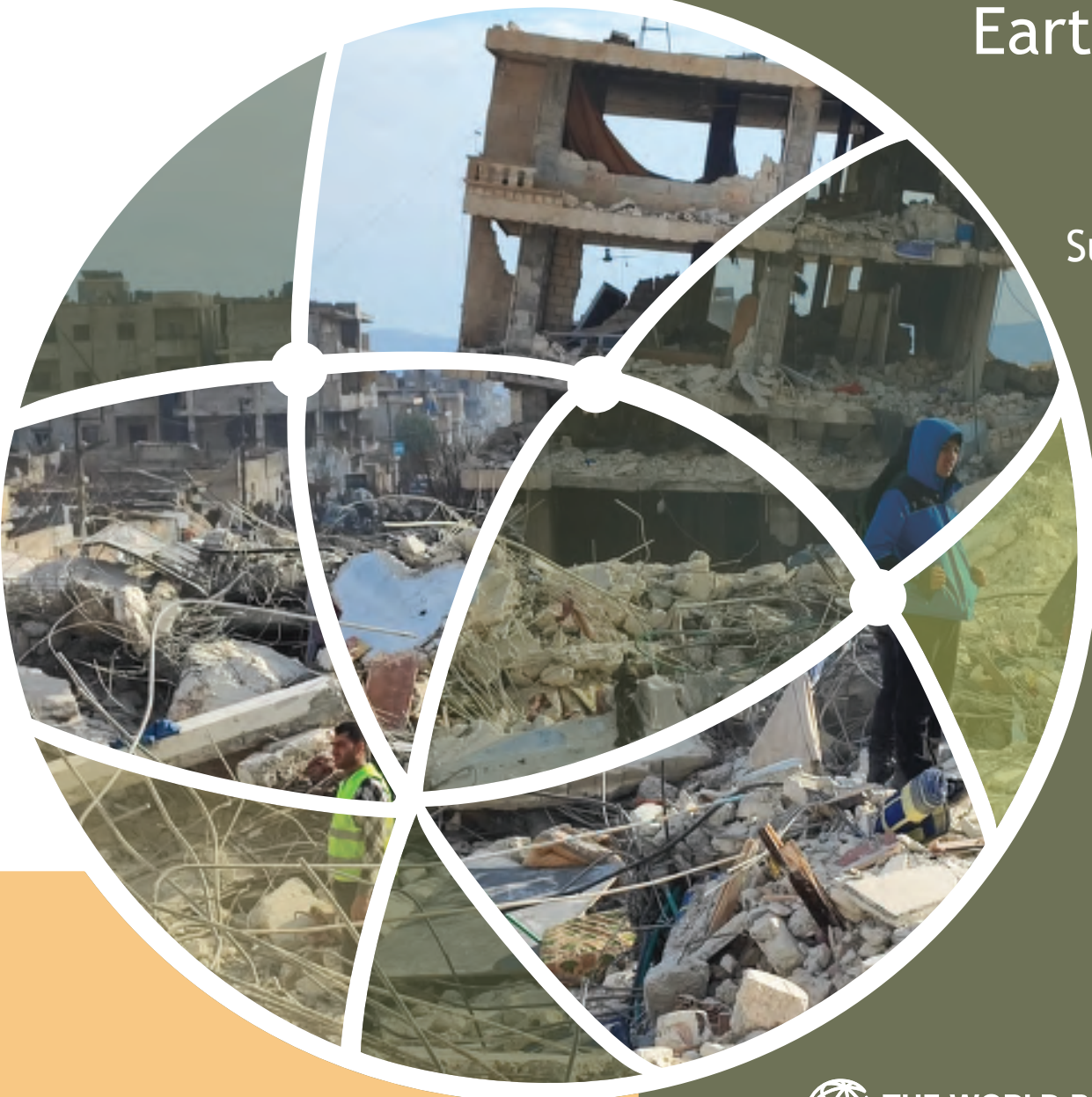
# SYRIA



# ECONOMIC MONITOR

The Economic  
Aftershocks of Large  
Earthquakes

Summer 2023



Public Disclosure Authorized

**THE WORLD BANK**  
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Middle East & North Africa



**DATA LAB**  
THE WORLD BANK



# Syria Economic Monitor

The Economic Aftershocks  
of Large Earthquakes

Summer 2023

Middle East and North Africa Region

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# LIST OF ABBREVIATIONS

AANES	Autonomous Administration of North and East Syria	MTI GP	Macroeconomics, Trade, and Investment Global Practice
ACLED	Armed Conflict Location Event Database	NDVI	Normalized Difference Vegetation Index
CBS	Central Bank of Syria	NGOs	Non-Governmental Organizations
CPI	Consumer Price Index	NLR	Nighttime Light Radiance
DMSP	Defense Meteorological Satellite Program	OCHA	Office for the Coordination of Humanitarian Affairs
EVI	Enhanced Vegetation Index	RDNA	Rapid Damage and Needs Assessment
FCV	Fragility, Conflict, and Violence	SDF	Syrian Democratic Forces
GDP	Gross Domestic Product	SIG	Syrian Interim Government
HNAP	Humanitarian Needs Assessment Program	SNA	Syrian National Army
HSOS	Humanitarian Situation Overview in Syria	SSG	Syrian Salvation Government
HTS	Hayat Tahrir al-Sham	SYP	Syrian Pound
IDPs	Internally Displaced Persons	UAE	United Arab Emirates
ISIS	Islamic State of Iraq and Syria	UN	United Nations
LAS	League of Arab States	US	United States
MFMod	Macroeconomic and Fiscal Model	US\$	United States Dollar
MODIS	Moderate-Resolution Imaging Spectroradiometer	VIIRS	Visible Infrared Imaging Radiometer Suite
		WFP	World Food Programme
		yoy	Year-on-year



# PREFACE

**T**he *Syria Economic Monitor* is a semi-annual report detailing recent economic developments in the Syrian Arab Republic and its near-term outlook. The *Syria Economic Monitor* is produced by the World Bank's Macroeconomics, Trade, and Investment Global Practice (MTI GP) in collaboration with the World Bank Data Lab. The report describes key features of Syria's macroeconomic policy and situates them in the context of its ongoing civil war. It also presents findings from recent World Bank analytical work on Syria. The *Syria Economic Monitor* is part of a broader effort by the MTI GP to better understand economic and social dynamics in countries affected by fragility, conflict, and violence (FCV), while reflecting the unique constraints involved in working in an FCV environment.

This third edition of the *Syria Economic Monitor* focuses on analyzing the economic impact of the earthquake and its projected impact on Syria's economic outlook. This edition of the *Syria Economic Monitor* was prepared by a team comprising Luan Zhao (Senior Economist, Task Team Leader), Peter Salisbury (Senior Consultant, Co-Editor), Albin Szakola (Consultant), Alejandra Quevedo Cardona (Consultant), Andres Chamorro (Geographer), Anthony Biswell (Consultant), Aref Alkrez (Consultant), Ayaz Parvez (Lead Disaster Risk Management Specialist), Benny Istanto (Consultant), Charl Jooste (Senior Economist), Enkhzaya Demid (Consultant), Stefanini

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The data cut-off date for this Syria Economic Monitor was June 16, 2023. The findings, interpre-

tations, and conclusions expressed in the *Syria Economic Monitor* are those of individual World Bank staff and do not necessarily reflect the views of the Executive Board of the World Bank or the governments they represent.

For more information about the World Bank's activities in Syria, or to download a digital copy of this report, please visit <https://www.worldbank.org/en/country/syria/overview#1>. For questions and comments on the content of this publication, please contact Eric Le Borgne ([eleborgne@worldbank.org](mailto:eleborgne@worldbank.org)), Norbert Matthias Fiess ([nfiess@worldbank.org](mailto:nfiess@worldbank.org)), and Luan Zhao ([lzhao1@worldbank.org](mailto:lzhao1@worldbank.org)). Media inquiries should be addressed to Zeina Khalil ([zelkhalil@worldbank.org](mailto:zelkhalil@worldbank.org)).



# EXECUTIVE SUMMARY

**T**welve years into a devastating civil war, a one-in-two-century earthquake devastated northwestern Syria. The 7.6 Richter scale shock was the deadliest in Syria after the one that hit Aleppo in 1822. A month after the February 2023 earthquake, the World Bank published a Syria Earthquake 2023 Rapid Damage and Needs Assessment (RDNA)<sup>1</sup> that provides a snapshot of the physical damages caused by the earthquake and the country's recovery needs. Our interest in this edition of the Syria Economic Monitor (SEM) is to track recent economic and social developments following the earthquake, and assess the economic outlook and surrounding risks.

Using novel data sources, this *Syria Economic Monitor* analyzes what happens to a conflict-affected economy in the months following a large natural disaster. The interactions of two such massive shocks (one natural and the other man-made) result in dynamics and outcomes that are, at times, quite different than those that would arise following a natural disaster of equal magnitude absent a conflict setting. But there is limited analysis of the (post-immediate earthquake) economic impact of a large natural disaster in the context of active and prolonged conflicts. A main reason for this lack of analysis is the paucity of data in conflict settings, an issue that we have partially addressed through the use of novel data sources, such as big data.<sup>2</sup>

To better understand these complex dynamics, this edition of the *Syria Economic Monitor* focuses on analyzing the economic impact of the earthquake and its projected impact on Syria's economic outlook. Beyond the specific Syria context, we believe this analysis could also help fill a gap in the understanding of the impact of large natural disasters in conflict-affected economies. This new body of evidence, in turn, would help revisit policy recommendations in such settings.

**The earthquake created large human losses and physical damages in the most contested areas of the country**

**The earthquake severely hit a part of Syria where a large share of its population and economic activity**

<sup>1</sup> World Bank. 2023. Syria Earthquake 2023 – Rapid Damage and Needs Assessment. Washington, D.C: World Bank Group. <http://documents.worldbank.org/curated/en/099093003162314369/P1721710e2b4a60b40a5940f0793f8a0d24>.

<sup>2</sup> These include remote data sources, including nighttime illumination, shipping-position data, traffic-congestion data, aviation statistics, mobile-phone location data, remote-sensing vegetation indices, and conflict-intensity data. The World Bank's Data Lab has compiled and made this data available on a website called "Support for World Bank Syria Economic Monitor: Using Alternative Data to Understand Changing Trends in Trade and Economic Activity" (LINK).

**were located.** The areas experienced strong or higher levels of impact from the earthquake hosted 6.6 million Syrians, representing around 31 percent of Syria's population and 17 percent of its Gross Domestic Product (GDP) in 2022, as estimated using nighttime illumination. Of the 6.6 million Syrians affected, 4.6 million (70 percent) live in areas outside of Syrian government control. The affected areas also housed approximately 3 million Internally Displaced Persons (IDPs), or 46 percent of all IDPs in Syria, resulting from the conflict, with a vast majority (94 percent) living in areas outside of Syrian government control.

**The earthquake also severely hit the part of Syria that was the most intensely contested among the belligerents of the more than decade-old civil war.** In the past three years, from 2020 to 2022, 35 percent of conflict-related deaths took place in areas that experienced strong or higher levels of impact from the earthquake. Of those incidents, 63 percent occurred in territory beyond the control of the Syrian government.

**The earthquake caused massive human suffering and damages.** Approximately 6,000 people were killed and another 12,000 were injured in Syria. Initial estimates indicate that the earthquake also displaced about 600,000 people, adding to the 6.8 million Syrians that were already internally displaced due to the war. In terms of physical impacts, the above-mentioned RDNA estimates the immediate and direct physical damages and losses<sup>3</sup> at approximately US\$5.2 billion, equivalent to about 10 percent of Syria's GDP.<sup>4</sup>

### The earthquake had significant socioeconomic impacts, exacerbating preexisting vulnerabilities

**The earthquake caused temporary but widespread economic and trade disruptions.** Data gathered for this *Syria Economic Monitor* tracking mobile device activity and nighttime illumination trends reveal a decline in mobility and a nationwide contraction in economic output in the aftermath of the disaster. Nighttime illumination data tracking gas flaring shows a contraction in oil production. Damage to roads and maritime facilities halted shipping and cargo arrivals for at least one week following the earthquake, as indicated by

shipping-position data. Besides, the destruction of roads connecting Antakya in Türkiye with the Bab al-Hawa, the only border crossing into Syria at the time, caused delays in delivering humanitarian assistance.

**The earthquake accelerated currency depreciation and consumer price inflation.** Following the earthquake, the Syrian pound (SYP) depreciated by 23 percent against the United States (US) dollar, reaching about SYP 8,800/US\$ in the parallel foreign exchange market in May 2023. Inflation rose by 11 percent between January and April 2023,<sup>5</sup> as reduced access to goods, heightened transportation costs, and increased demand following the influx of foreign aid put upward pressure on prices.

**The earthquake's impact on prices was not equally distributed.** Prices rose far more sharply in some regions than in others, reflecting the earthquake's varied and regionally specific effects and highlighting the fragmented nature of the Syrian economy due to the multiple areas of control. As the earthquake disrupted the supply of fuel from Türkiye, fuel prices rose significantly in earthquake-affected areas in the northwest, while the provision of subsidized heating diesel in less-affected government-held areas helped mitigate local fuel price increases. Rental costs rose even in areas that were only moderately affected by the earthquake, likely due to an influx of people from affected regions in the northwest. Food prices increased across the country, but the arrival of food aid eased price pressures in earthquake-affected areas.

**The preexisting vulnerability of Syrian households has left many ill-equipped to cope with the lingering economic impact of the earthquake.** Survey results indicate that the adoption of coping strategies like selling household items and productive

<sup>3</sup> Damage refers to the impact on the capital stock and is quantified as the replacement value of totally or partially destroyed physical assets. Losses represent disruptions in economic flows as a consequence of the damaged assets.

<sup>4</sup> This estimate does not include second-order economic effects, such as increased labor and materials costs—these, and other economic costs, are the focus of this *Syria Economic Monitor*.

<sup>5</sup> Consumer price inflation is proxied by the World Food Programme's (WFP) minimum food basket price index.

assets has increased since the earthquake. Access to health services and sanitation has further deteriorated in heavily affected areas since the earthquake. Reduced access to those essential services is likely to worsen the ongoing cholera outbreak and expose the population to elevated risks from other communicable diseases.

## Funding shortfall and humanitarian constraints impede response efforts

**Response efforts in Syria were delayed and lagged those in Türkiye.** According to maritime and cargo flight data, imports rose modestly starting in late February, likely reflecting an influx of humanitarian aid and imports to support post-disaster recovery. Meanwhile, increased levels of mobility and nighttime illumination signaled greater economic activity in March. However, recovery efforts in Syria lagged those in Türkiye, where activity near the earthquake epicenter increased sharply soon after the disaster, as evidenced by mobile device data.

**Inadequate funding limited response efforts.** Damascus allocated a modest emergency fund of US\$7 million (less than 0.1 percent of GDP). Limited fiscal resources have also constrained the response of authorities in non-regime-held areas. By May 2023, the United Nations (UN) has received roughly US\$1 billion in funding under its Syria Earthquake Flash Appeal and Syria Humanitarian Response Plan. Despite the US\$7.1 billion in grants pledged this year at the Brussels conferences, the risk of a significant shortfall persists, given that previous rounds allocated only about a third for programming inside Syria. Overall, by May 2023, funding still falls considerably short of the US\$7.9 billion in reconstruction and recovery needs estimated by the World Bank.

**Internal divisions and a lack of authorized border crossings hindered humanitarian response efforts.** Between February and May 2023, the monthly average of aid trucks traveling from Türkiye to Syria remained about 5 percent lower than the monthly average observed in 2022. Despite the resumption of humanitarian aid, nighttime illumination data show no significant increase in activity at the Syria-Türkiye border crossings authorized for aid delivery after the earthquake.

## Earthquake undermines Syria's economic outlook

**Real GDP is projected to contract by 5.5 percent in 2023, surpassing the pre-earthquake estimate of 3.2 percent.** The economy may contract further if reconstruction efforts fail to meet expectations. This risk is heightened by a lack of public resources, low levels of private investment, and a combination of physical obstacles and security challenges that prevent humanitarian assistance from reaching some of the affected areas.

**Syria's enduring conflict is likely to exacerbate the earthquake's long-term socioeconomic impact, and vice versa.** People living in fragility, conflict, and violence (FCV)-afflicted contexts like Syria's are among the most vulnerable to natural disasters when they occur. These contexts not only undermine disaster preparedness but also pose significant physical barriers, hindering access to disaster-affected areas and the provision of recovery support. Conflicts and earthquakes both destroy fixed capital and degrade human capital. This produces large, sustained negative effects on productivity in the longer run. Continued monitoring of key economic indicators may provide insight into how conflict and natural disasters interact to influence economic outcomes.





# الملخص التنفيذي

## تسبب الزلزال في خسائر بشرية وأضرار مادية كبيرة في أكثر المناطق المتنازع عليها في البلاد

ضرب الزلزال بشدة جزءاً من سوريا يضم نسبة كبيرة من السكان والنشاط الاقتصادي. تأوي المناطق التي تضررت بشدة من الزلزال 6.6 مليون سوري، يمثلون حوالي 31 بالمائة من سكان سوريا و 17 بالمائة من ناتجها المحلي الإجمالي في عام 2022، حسب التقديرات باستخدام الأضواء الليلية. ومن بين الـ 6.6 مليون سوري المتضرر، يعيش 4.6 مليون شخص (70 بالمائة) في مناطق خارجة عن سيطرة الحكومة السورية. وتأوي المناطق المتضررة أيضاً حوالي 3 ملايين شخص من النازحين داخلياً، أو 46 بالمائة من إجمالي النازحين داخلياً في سوريا نتيجة للنزاع، حيث تعيش الغالبية العظمى (94 بالمائة) في مناطق خارجة عن سيطرة الحكومة السورية.

و ضرب الزلزال بشدة أيضاً أكثر المناطق المتنازع عليها بشدة بين الأطراف المتحاربة في الحرب الأهلية المستمرة منذ أكثر من عقد من الزمان. ففي السنوات الثلاث الماضية، من عام 2020 إلى عام 2022، وقع 35 بالمائة من الوفيات المرتبطة بالنزاع في المناطق التي تضررت بدرجة عالية من الزلزال. وسُجلت 63 بالمائة ن تلك الحوادث، في مناطق خارجة عن سيطرة الحكومة السورية.

تسبب الزلزال في معاناة إنسانية هائلة وأضرار جسيمة. لقي حوالي 6,000 شخص حتفهم وأصيب 12,000 آخرون في سوريا. وتشير التقديرات الأولية إلى أن الزلزال أدى أيضاً إلى نزوح حوالي 600,000 شخص، إضافة إلى الـ 6.8 مليون نازح سوري داخل سوريا أصلاً بسبب الحرب. أما فيما يتعلق بالآثار المادية، فتشير تقديرات تقرير التقييم السريع للأضرار والاحتياجات المذكور أعلاه إلى أن الأضرار والخسائر المادية الفورية والمباشرة بلغت 5.2 مليار دولار أمريكي تقريباً، أي ما يعادل حوالي 10 بالمائة من الناتج المحلي الإجمالي لسوريا .

فما تشهد سوريا العام الثاني عشر من حرب أهلية مدمرة، أقي زلزال لم يقع مثله منذ قرنين على تدمير شمال غرب البلاد. كانت الصدمة التي خلفها الزلزال الذي بلغت قوته 7.6 درجات على مقياس ريختر هي الأكثر دموية في سوريا بعد الزلزال الذي ضرب حلب في عام 1822. وبعد مضي شهر على زلزال شباط/فبراير 2023، أصدر البنك الدولي تقريراً بعنوان التقييم السريع للأضرار والاحتياجات الناتجة عن الزلزال في سوريا لعام 2023 الذي قدم لمحة سريعة عن الأضرار المادية الناجمة عن الزلزال واحتياجات التعافي في البلاد. ينصب اهتمامنا في هذا العدد من مرصد الاقتصاد السوري على تتبع التطورات الاقتصادية والاجتماعية الأخيرة في أعقاب الزلزال، وتقييم التوقعات الاقتصادية والمخاطر المحيطة.

باستخدام مصادر جديدة للبيانات، يقوم مرصد الاقتصاد السوري هذا بتحليل ما يشهده اقتصاد متضرر أصلاً من النزاع خلال الأشهر التي تلي كارثة طبيعية كبيرة. تؤدي تفاعلات هاتين الصدمتين الهائلتين (إحدهما طبيعية والأخرى من صنع الإنسان) إلى ديناميكيات ونتائج تكون، في بعض الأحيان، مختلفة تماماً عن تلك التي قد تنشأ في أعقاب كارثة طبيعية ذات حجم مماثل في بيئة لا تشهد أي نزاع. هناك تحليل محدود للأثر الاقتصادي (المباشر بعد الزلزال) لكارثة طبيعية كبيرة في سياق النزاعات النشطة والممتدة. ويكمن السبب الرئيسي لهذا النقص في التحليل في ندرة البيانات المتوفرة في بيئات تشهد نزاعاً، وهي مشكلة قمنا بمعالجتها جزئياً من خلال استخدام مصادر جديدة للبيانات، مثل البيانات الضخمة (Big Data).

من أجل فهم هذه الديناميكيات المعقدة بشكل أفضل، يركز هذا العدد من مرصد الاقتصاد السوري على تحليل الأثر الاقتصادي الناجم عن الزلزال وأثره المتوقع على التوقعات الاقتصادية لسوريا. وإلى جانب السياق المحدد لسوريا، فإننا نعتقد أن هذا التحليل يمكن أن يساعد أيضاً في سد الفجوة في فهم أثر الكوارث الطبيعية الكبيرة في الاقتصادات المتضررة من النزاعات. من شأن هذه المجموعة الجديدة من الأدلة، بدورها، أن تساعد في إعادة النظر في التوصيات السياساتية في بيئات مماثلة.

## كان للزلزال آثار اجتماعية واقتصادية كبيرة، مما أدى إلى تفاقم أوجه الضعف السائدة مسبقاً

تسبب الزلزال في اضطرابات اقتصادية وتجارية مؤقتة ولكنها واسعة النطاق. تكشف البيانات التي تم جمعها لأغراض هذا العدد من مرصد الاقتصاد السوري من خلال تتبع نشاط الأجهزة المحمولة واتجاهات الأضواء الليلية الخاص عن انخفاض في حركة النقل وانكماش في الناتج الاقتصادي على مستوى البلاد في أعقاب الكارثة. تظهر بيانات الأضواء الليلية التي ترصد حرق الغاز انكماشاً في إنتاج النفط. وتسببت الأضرار التي لحقت بالطرق والمرفاق البحرية في توقف عمليات الشحن ووصول البضائع لمدة أسبوع على الأقل عقب الزلزال، وفق ما تظهره بيانات مواقع الشحن. إلى جانب ذلك، تسبب تدمير الطرق التي تربط أنطاكية في تركيا بمعبر باب الهوى، وهو المعبر الحدودي الوحيد إلى سوريا في ذلك الوقت، في تأخير إيصال المساعدات الإنسانية. أدى الزلزال إلى تسريع وتيرة انخفاض قيمة العملة وتضخم أسعار المستهلكين. في أعقاب الزلزال، انخفضت قيمة الليرة السورية بنسبة 23 بالمائة مقابل الدولار الأمريكي، لتصل إلى حوالي 8,800 ليرة سورية/دولار أمريكي في سوق صرف العملات الأجنبية الموازي في أيار/مايو 2023. وارتفع التضخم بنسبة 11 بالمائة بين شهري كانون الثاني/يناير ونيسان/أبريل 2023، حيث أدى انخفاض الوصول إلى السلع، وارتفاع تكاليف النقل، وزيادة الطلب في أعقاب تدفق المساعدات الخارجية، إلى زيادة الضغط على الأسعار.

لم يكن أثر الزلزال على الأسعار متساوياً. ارتفعت الأسعار بشكل حاد في بعض المناطق أكثر من غيرها، مما يعكس تأثيرات الزلزال المتنوعة والخاصة في مناطق مختلفة ويزر الطبيعة المجزأة للاقتصاد السوري بسبب مناطق السيطرة المتعددة. فيما عطل الزلزال إمدادات الوقود من تركيا، ارتفعت أسعار الوقود بشكل كبير في المناطق المتضررة من الزلزال في الشمال الغربي، في حين ساعد توفير وقود الديزل المدعوم لأغراض التدفئة في المناطق الأقل تضرراً التي تسيطر عليها الحكومة في التخفيف من ارتفاع أسعار الوقود المحلية. وارتفعت الإيجارات حتى في المناطق التي تضررت بدرجة متوسطة جراء الزلزال، على الأرجح بسبب تدفق السكان من المناطق المتضررة في الشمال الغربي. كما ارتفعت أسعار المواد الغذائية في جميع أنحاء البلاد، غير أن وصول المساعدات الغذائية خفف من الضغوط على الأسعار في المناطق المتضررة من الزلزال.

تسبب الضعف أو الهشاشة الذي تعاني منه الأسر السورية أصلاً في جعل الكثير منها غير مهياً للتكيف مع الآثار الاقتصادية طويلة الأمد للزلزال. تشير نتائج مسوحات إلى أن اعتماد استراتيجيات تكيف مثل بيع الأدوات المنزلية والأصول الإنتاجية قد زاد منذ وقوع الزلزال. وازداد تدهور الوصول إلى الخدمات الصحية والصرف الصحي في المناطق المتضررة بشدة منذ وقوع الزلزال. ومن المرجح أن يؤدي انخفاض الوصول إلى تلك الخدمات الأساسية إلى تفاقم تفشي وباء الكوليرا المستمر وتعريض السكان للمخاطر المتزايدة للأمراض المعدية الأخرى.

## يتسبب النقص في التمويل والقيود المفروضة على وصول المساعدات الإنسانية في إعاقة جهود الاستجابة

تأخرت جهود الاستجابة في سوريا وتخلفت عن جهود الاستجابة في تركيا. وفقاً للبيانات البحرية وبيانات رحلات الشحن الجوية، ارتفعت الواردات

بشكل متواضع ابتداءً من أواخر شهر شباط/فبراير، مما يعكس على الأرجح تدفق المساعدات الإنسانية والواردات لدعم عملية التعافي بعد الكارثة. في الوقت نفسه، أشارت زيادة مستويات حركة النقل والأضواء الليلية إلى زيادة النشاط الاقتصادي في شهر آذار/مارس. مع ذلك، تخلفت جهود التعافي في سوريا عن جهود التعافي في تركيا، حيث زاد النشاط بالقرب من مركز الزلزال بشكل حاد بعد الكارثة بفترة وجيزة، كما يتضح من بيانات الأجهزة المحمولة.

**عدم كفاية التمويل حد من جهود الاستجابة.** خصصت دمشق صندوق طوارئ متواضع مخصص يبلغ 7 ملايين دولار أمريكي (أقل من 0.1 بالمائة من الناتج المحلي الإجمالي). وأدت محدودية الموارد المالية إلى تقييد استجابة السلطات في المناطق غير الخاضعة لسيطرة النظام. بحلول شهر أيار/مايو 2023، تلقت الأمم المتحدة حوالي مليار دولار أمريكي كتمويل في إطار النداء العاجل الخاص بزلزال سوريا وخطة الاستجابة الإنسانية في سوريا. على الرغم من المنح التي تم التمسك بها هذا العام في مؤتمر بروكسل والبالغ 7.1 مليار دولار أمريكي، إلا أن خطر حدوث عجز كبير لا يزال قائماً، بالنظر إلى أن الجولات السابقة خصصت حوالي الثلث فقط للبرامج داخل سوريا. بشكل عام، بتاريخ شهر أيار/مايو 2023، كان حجم التمويل لا يزال أقل بكثير من احتياجات إعادة الإعمار والتعافي البالغة 7.9 مليار دولار أمريكي حسب تقديرات البنك الدولي.

**أدت الانقسامات الداخلية وعدم وجود معابر حدودية معتمدة إلى إعاقة جهود الاستجابة الإنسانية.** بين شهري شباط/فبراير وأيار/مايو 2023، ظل المتوسط الشهري لحركة شاحنات المساعدات من تركيا إلى سوريا أقل بنحو 5 بالمائة من المتوسط الشهري الذي تم رسده في عام 2022. وعلى الرغم من استئناف المساعدات الإنسانية، لا تظهر بيانات الأضواء الليلية زيادة كبيرة في النشاط عبر المعابر الحدودية المعتمدة بين سوريا وتركيا لإيصال المساعدات بعد الزلزال.

## الزلزال يقوض التوقعات الاقتصادية لسوريا

من المتوقع أن ينكمش إجمالي الناتج المحلي الحقيقي بنسبة 5.5 بالمائة في عام 2023، متجاوزاً تقديرات ما قبل الزلزال البالغة 3.2 بالمائة. وقد يشهد الاقتصاد المزيد من الانكماش إذا فشلت جهود إعادة الإعمار في تلبية التوقعات. يتفاقم هذا الخطر بسبب نقص الموارد العامة، وانخفاض مستويات الاستثمارات الخاصة، ومزيج من العقبات المادية والتحديات الأمنية التي تحول دون وصول المساعدات الإنسانية إلى بعض المناطق المتضررة.

**من المرجح أن يؤدي النزاع المستمر في سوريا إلى تفاقم الآثار الاجتماعية والاقتصادية طويلة المدى للزلزال، والعكس صحيح.** فالكثيرون الذين يعيشون في ظروف هشة تعاني من النزاعات والعنف مثل سوريا هم من بين الفئات الأكثر عرضة للكوارث الطبيعية عند وقوعها. ولا تقوض هذه الظروف مدى الجهوزية للتعامل مع الكوارث فحسب؛ بل تشكل أيضاً حواجز مادية كبيرة وتعيق الوصول إلى المناطق المتضررة من الكوارث وتقديم الدعم لعملية التعافي. تؤدي النزاعات والزلزلات على السواء إلى تدمير رأس المال الثابت وإضعاف رأس المال البشري. ينتج عن ذلك آثار سلبية كبيرة ومستدامة على الإنتاجية على المدى الطويل. يمكن أن يوفر الرصد المستمر للمؤشرات الاقتصادية الرئيسية فكرة متعمقة حول كيفية تفاعل النزاعات والكوارث الطبيعية وتأثيرها على النتائج الاقتصادية.

# THE EARTHQUAKE

**In February 2023, a series of earthquakes inflicted enormous damage across northern and western Syria.** An earthquake measuring 7.6 on the Richter scale struck Syria and neighboring Türkiye on February 6. It was followed by significant aftershocks and a second, smaller (6.3 Richter scale) earthquake on February 20. The February 6 earthquake was the country's deadliest seismic event since an earthquake caused extensive damage to large parts of Aleppo and surrounding areas in 1822.

**The earthquake inflicted a substantial human toll on the Syrian side of the border with Türkiye.** Approximately 6,000 people were killed, and another 12,000 were injured. Notably, nearly 80 percent of the fatalities were recorded in areas outside of government control.<sup>6</sup>

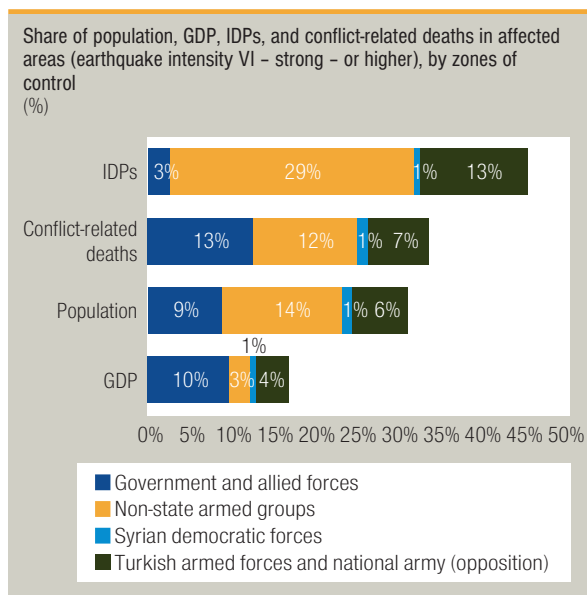
**The earthquake struck an economy and population battered by more than a decade-long civil war.** Since the early 2010s, the conflict has resulted in large-scale casualties, forced displacement, the destruction of physical capital, and the breakdown of economic networks and value chains. Economic output is now estimated at half the pre-conflict level recorded in 2010. Due to the dramatic decline in per

capita GDP, the World Bank reclassified Syria as a low-income country in 2016. When the earthquake struck, more than half of Syria's pre-conflict population had already been displaced, including 6.8 million IDPs and 6.7 million refugees abroad.

**These earthquakes' impact was greatest in areas that account for a large share of Syria's population and economic activity.** Some 6.6 million Syrians live in areas that experienced strong or higher levels of impact from the earthquake, which also accounted for around 31 percent of Syria's population and 17 percent of its GDP in 2022, as estimated using nighttime illumination. Of the 6.6 million Syrians affected, 4.6 million (70 percent) live in areas outside of Syrian government control. The affected areas also housed approximately 3 million IDPs, or 46 percent of all IDPs in Syria, resulting from the conflict, with a vast majority (94 percent) living in areas outside of Syrian government control (Figure 1 and Figure 2).

<sup>6</sup> As of February 21, 2023, 1,414 deaths and 2,357 injuries were reported in government-controlled areas. The UN Health Cluster reported 4,400 deaths and 8,100 injuries in Northwest Syria in areas outside of government control.

**FIGURE 1 • The Earthquake Created Large Human Losses and Physical Damages in the Most Conflict-Affected Areas of the Country**



Source: Satellite images from the US Commerce Department's Visible Infrared Imaging Radiometer Suite (VIIRS); USGS ShakeMap; Humanitarian Needs Assessment Program (HNAP) population and IDP data as of August 2022; Armed Conflict Location Event Database (ACLED); World Bank staff estimates.

Note: (a) Nighttime illumination, as shown in the chart, are a proxy for GDP in 2022. (b) Earthquake intensity is based on the USGS shakemap version 17, released on April 14, 2023. (c) The data on conflict-related deaths represents those recorded in the ACLED database from 2020 to 2022.

**These areas are also among those most intensely contested during Syria's 12-year-old civil war.** In the past three years, from 2020 to 2022, 35 percent of conflict-related deaths took place in areas that experienced strong or higher levels of impact from the earthquake. Of those incidents, 63 percent occurred in territory outside the control of the Syrian government.

**The country's infrastructure and buildings, already weakened by years of war, underinvestment, and neglect, were especially vulnerable to the earthquake.** The RDNA, a well-established World Bank assessment tool, provides a snapshot of the economic damage caused by the earthquake and the country's recovery needs. It estimates total earthquake damages for Syria at \$5.2 billion, around 10 percent of Syria's GDP, and recovery needs at \$7.9 billion. Its findings are outlined in the Special Focus section at the end of this report.

**This edition of the *Syria Economic Monitor* digs deeper into the earthquake's immediate and**

**long-term direct and indirect economic impacts.**<sup>7,8</sup>

This analysis was completed in the months following the earthquake. Assessing and responding to the earthquake's impact would have been challenging even if Syria were not in the midst of a 12-year-old civil war. People living in FCV-afflicted contexts like Syria's are among the most vulnerable to natural disasters, and their needs are among the hardest to attend to when disaster strikes.<sup>9</sup> FCV contexts degrade disaster preparedness and often pose significant barriers to accessing disaster-affected areas. They also pose significant barriers to good analysis of disaster impacts because of a paucity of baseline and post-disaster data gathering capacity.<sup>10</sup> Syria, for example, is territorially divided, has witnessed a withering away of institutions, and its data-gathering capacity is among the lowest in the world. In 2020, Syria ranked

<sup>7</sup> As part of its efforts to better understand the inner workings of FCV economies in, the World Bank has been publishing a semi-annual report, the Syria Economic Monitor, since Spring 2022. See World Bank, 2022. Syria Economic Monitor: Lost generation of Syrians. Washington, D.C: World Bank Group. <http://documents.worldbank.org/curated/en/099335506102250271/IDU06190a00a0d128048450a4660ae3b937ae4bd>. World Bank, 2023. Syria Economic Monitor: Syria's Economy in Ruins after a Decade-long War. Washington, D.C: World Bank Group. <http://documents.worldbank.org/curated/en/099720503172334463/IDU08b76f71b0bfa8045db09e8007c3df330e5fe>.

<sup>8</sup> Since the onset of the conflict in Syria, the World Bank has conducted several analytical works that aimed at better understanding the economic and social impact of the Syrian conflict. These are The Toll of War, issued in 2017, which documented the economic and social impact of the conflict inside Syria, The Mobility of Displaced Syrians, issued in 2019, which analyzed the spontaneous returns of Syrian refugees to determine the key factors that influenced their decisions, and The Fallout of War, issued in 2020, which examined the human, physical, social, and economic destruction from the conflict in Syria on the country's neighbors in the Mashreq region.

<sup>9</sup> Peters, Katie, and Mirianna Budimir. 2016. "When disasters and conflict collide Facts and figures". Overseas Development Institute, May 2016. [https://cdn.odi.org/media/documents/When\\_disasters\\_and\\_conflicts\\_collide\\_facts\\_and\\_figures.pdf](https://cdn.odi.org/media/documents/When_disasters_and_conflicts_collide_facts_and_figures.pdf)

<sup>10</sup> Guidance for PDNA in Conflict Situations, UNDP, 2011.

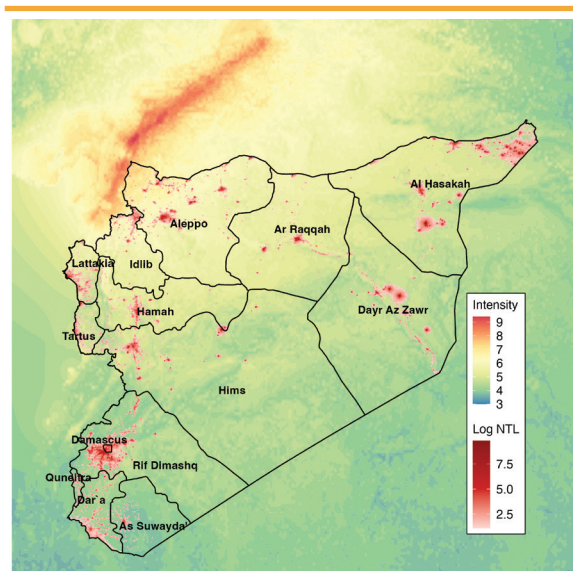
last among the 146 countries included in the World Bank's Statistical Capacity Index.

To overcome these impediments, the *Syria Economic Monitor* makes use of novel data sources and in-depth, granular analysis of local supply chains. It includes analysis of satellite imagery and remotely sensed infrared nighttime lights and crop yield data; open-source conflict and fatality data; mobile device activity; maritime and air cargo activity; locally gathered pricing data including granular fuel price data; humanitarian surveys; and other data.<sup>11</sup> Using statistical and qualitative methods, it explores cross-border trade and smuggling trends, determinants of fuel price and inflation, and trends in access to humanitarian assistance. It also provides a detailed picture of an economy recalibrating after a major disaster.

Beyond the specific Syria context, this analysis helps fill a gap in the understanding of the impact of large natural disasters in conflict-affected economies. While the RDNA is an important tool used globally by the World Bank in the aftermath of natural disasters, it is rarely deployed in long-term conflict settings. There is limited economic analysis of the post-earthquake economic impact of a large natural disaster in the context of an active and prolonged conflict. The body of evidence outlined in this edition of the *Monitor* could assist in the development of policy recommendations in such settings.

The rest of the report is structured as follows. Chapter II traces the recent trends of the conflict. Chapter III analyzes recent economic and policy developments in Syria, including the government initiatives and international aid programs marshaled in response to the earthquake. Chapter IV provides

FIGURE 2 • The Earthquake Hit Economically Important Areas of Northwestern Syria



Source: Satellite images from the US Commerce Department's VIIRS and the US Department of Defense's Defense Meteorological Satellite Program (DMSP); USGS ShakeMap; World Bank staff estimates.

Note: (a) Nighttime illumination in 2022, as shown in the chart, are a proxy for economic activities. (b) Earthquake intensity is based on the USGS shakemap version 17, released on April 14, 2023.

an updated economic outlook for Syria, drawing on a range of traditional and nontraditional data sources. Finally, the Special Focus Section presents key findings from the Syria Earthquake 2023 RDNA.

<sup>11</sup> The World Bank's Data Lab has compiled and made this data available on a website called "Support for World Bank Syria Economic Monitor: Using Alternative Data to Understand Changing Trends in Trade and Economic Activity" (LINK).



# THE CONFLICT

**A** ceasefire brokered in 2020 halted major hostilities in Syria's civil war, but insecurity and violence remain pervasive across much of the country. While armed clashes and bombings have become less common in recent years, Syria suffered the 10<sup>th</sup> highest number of conflict-related fatalities worldwide in 2022.<sup>12</sup> Conflict events were concentrated along front lines dividing government-controlled territory from opposition-controlled areas in northwest Syria.

**Conflict events and casualties temporarily declined in the wake of the disaster but quickly returned to previous levels (Figure 3).** Media reports indicate that since February 2023, Islamic State of Iraq and Syria (ISIS) attacks have increased in the northeast, primarily targeting the Syrian Democratic Forces (SDF) aligned with the Autonomous Administration of North and East Syria (AANES).<sup>13</sup> Media reports also claim that tensions have escalated

in the north between Türkiye, its Syrian National Army (SNA) allies, and Hayat Tahrir al-Sham (HTS) since March 2023.<sup>14</sup> Additionally, Israel increased airstrikes in response to reported Iranian military expansion in Syria,<sup>15</sup> particularly in the south, further exacerbating the instability caused by socioeconomic pressures and criminal activity.

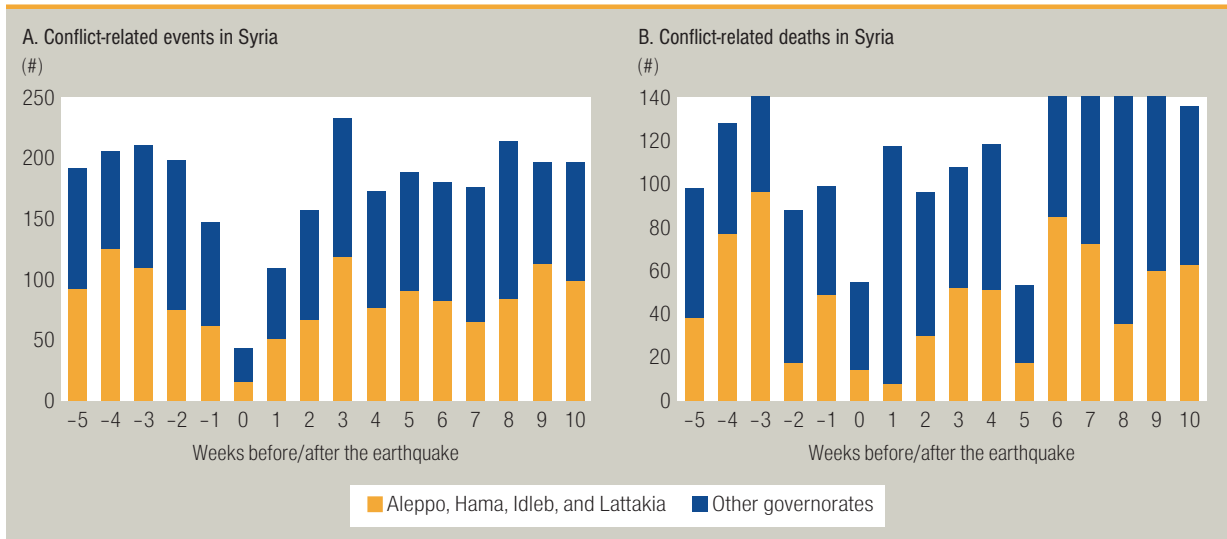
<sup>12</sup> Armed Conflict Location Event Database (ACLED). 2022. <https://acleddata.com/>.

<sup>13</sup> Crisis Analysis – Syria. 2023. “February '23 Monthly Report.” <https://ca-syr.org/periodical/february-2023-monthly-report>.

<sup>14</sup> ETANA Syria. 2023. “Syria Military Brief: North-West Syria – 06 April 2023.” <https://etanasyria.org/syria-military-brief-north-west-syria-06-april-2023/>.

<sup>15</sup> Crisis Analysis – Syria. 2023. “April '23 Monthly Report.” <https://ca-syr.org/periodical/april-2023-monthly-report>.

**FIGURE 3** • Conflict Events and Casualties Temporarily Declined after the Earthquake, then Quickly Returned to Previous Levels



Source: ACLED; World Bank staff estimates.



# RECENT ECONOMIC DEVELOPMENTS

## The Syrian economy was already fragile before the earthquake

**Syria faced a series of compounding crises even before the earthquake struck.** Severe droughts, damage to irrigation infrastructure, and an increase in input costs since 2021 had limited agricultural production. The country's wartime economic crisis was exacerbated by economic instability in neighboring Lebanon and Türkiye, coupled with tighter U.S. sanctions. More than a decade of war had severely degraded Syria's healthcare system, weakening the country's response to a cholera outbreak in mid-2022. Imports supply about half of oil consumption and about one-third of cereal consumption, and elevated commodity prices in the wake of the war on Ukraine weakened Syria's external position and fueled inflation.<sup>16</sup> In 2022, the Syrian pound depreciated by about 76 percent against the U.S. dollar in the parallel foreign-exchange market, triggering a surge in inflation, and average prices for essential foods rose by 93 percent.<sup>17</sup>

## The dire economic situation deteriorated further after the earthquake

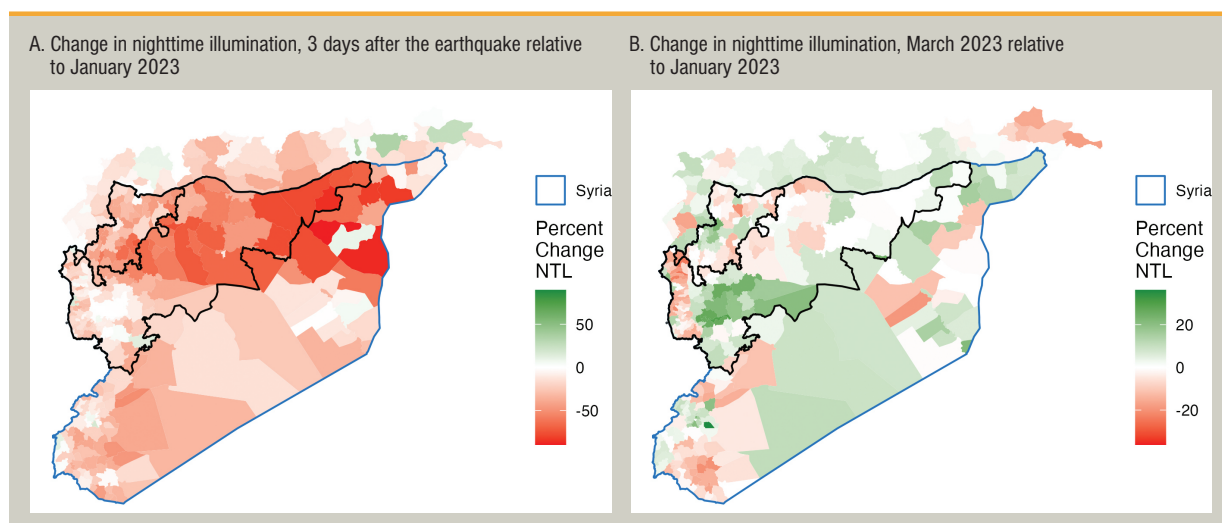
### The earthquake disrupted economic activity

**High-frequency alternative data show a brief nationwide decline in economic activity immediately after the earthquake.** An analysis of nighttime illumination, which serves as a proxy for economic output in the absence of formal production data, reveals

<sup>16</sup> See World Bank, 2023. Syria Economic Monitor: Syria's Economy in Ruins after a Decade-long War. Washington, D.C: World Bank Group. <http://documents.worldbank.org/curated/en/099720503172334463/IDU08b76f71b0bfa8045db09e8007c3df330e5fe>.

<sup>17</sup> WFP. 2022. "WFP Syria Market Price Watch Bulletin, December 2022". ReliefWeb, December 31, 2022. <https://reliefweb.int/report/syrian-arab-republic/wfp-syria-market-price-watch-bulletin-december-2022>.

**FIGURE 4 • Physical Damage Slowed Economic Activity Immediately after the Earthquake, while Relief Efforts Drove an Uneven Recovery**



*Source:* Satellite images from the US Commerce Department's VIIRS; USGS ShakeMap; World Bank staff estimates.  
*Note:* The two black lines show locations where the earthquake shaking was (a) strong/very strong/severe - earthquake intensity of VI or above and (b) moderate - earthquake intensity of V. Earthquake shaking is based on the USGS shakemap version 17, released on April 14, 2023.

a substantial drop in activity in the days following the earthquake. As expected, strongly affected regions in the north and west experienced the biggest decline in output (Figure 4A). The earthquake damaged road infrastructure at the Bab al-Hawa border crossing, the sole formal link between Syria and Türkiye, which slowed economic activity and delayed the arrival of critical humanitarian assistance for several days. Data on the movement of internet-connected mobile devices also show a pronounced decline in output, particularly in the worst-affected regions (Figure 5A). Economic activity, however, also declined in areas less affected by the earthquake, possibly due to the psychological impact and uncertainty caused by the disaster.

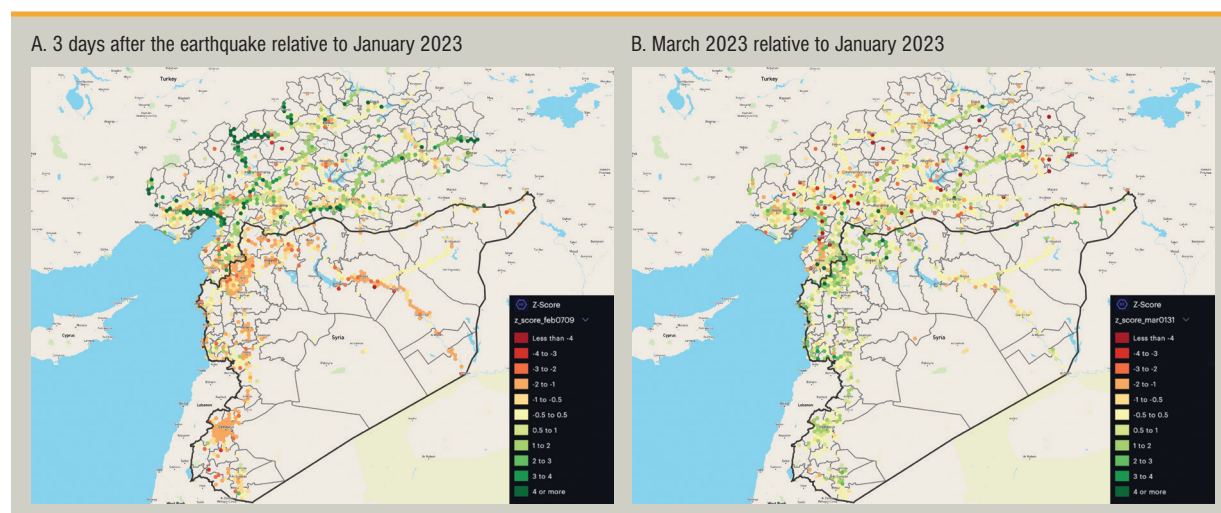
**Economic activity increased in March, likely due to delayed recovery efforts.** Nighttime illumination increased in key areas of the earthquake-affected regions, likely reflecting rescue and recovery efforts. However, illumination declined in other areas, suggesting a mixed pattern of recovery (Figure 4B). Mobile-device data show an overall increase in activity in March, especially in the earthquake-affected regions (Figure 5B).

**Mobile-device data also indicate that response efforts in Syria lagged those in Türkiye.** Data from close to the earthquake epicenter in Tür-

kiye show a noticeable surge in activity both in February and March, reflecting the extensive rescue and relief efforts that immediately followed the earthquake (Figure 5A). A similar surge in activity did not occur in Syria until March (Figure 5B). These data align with anecdotal evidence and financial reporting suggesting that recovery efforts in Syria were slower and weaker than those in Türkiye.

**The earthquake damaged infrastructure and caused a decline in oil production.** Syria's major oil production facilities are concentrated in the central and eastern regions and sustained minimal damage from the earthquake. However, the coastal Baniyas refinery, which processes most of the country's imported Iranian crude oil and accounts for about two-thirds of domestic fuel production, halted operations for several days. This interruption, coupled with electricity outages, caused a temporary decline in oil production (Figure 6A). Meanwhile, damage to public infrastructure disrupted logistics and supply chains, increasing the costs of oil production and distribution. One month after the earthquake, some facilities in the northeast—a key center of oil production—continued to operate below pre-earthquake levels, while production at other facilities had increased (Figure 6B).

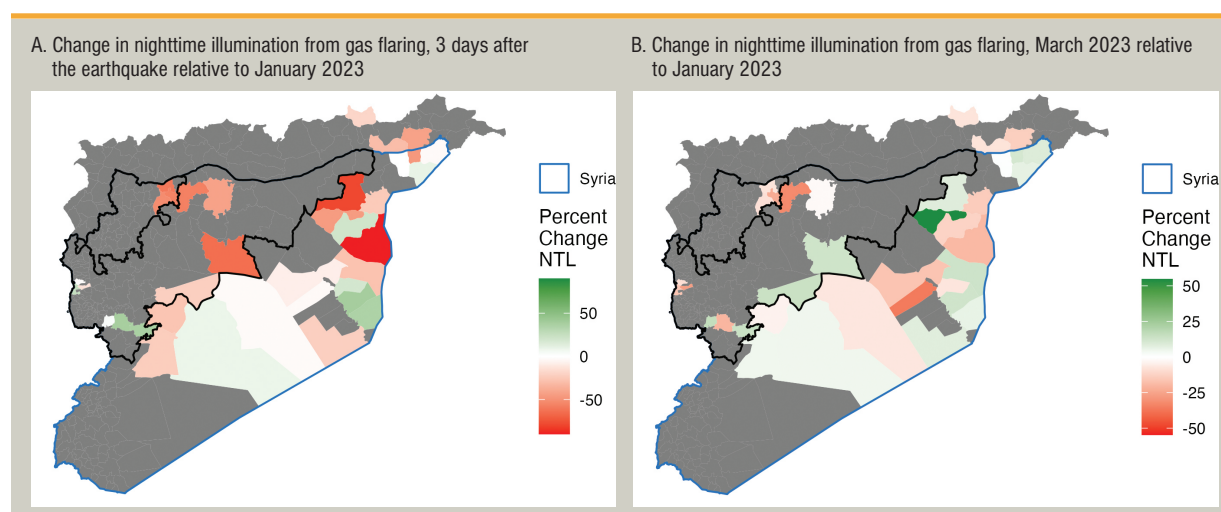
**FIGURE 5** • Mobile-Device Data Show a Nationwide Decrease in Activity Just after the Earthquake, Followed by a Surge in Activity in Northwestern Syria a Month Later



Source: Veraset Movement, <https://www.veraset.com>; World Bank staff estimates.

Note: The assessment of economic activity level involved analyzing the device count from a longitudinal panel of mobility data in each tile at each time period. Z-scores were calculated for specific time periods compared to the January 2023 baseline, providing a statistical measure of the deviation from the mean and allowing for the evaluation of economic activity levels in terms of standard deviations. A lower z-score signifies reduced movement, which is typically associated with decreased economic activity.

**FIGURE 6** • The Earthquake Damaged Infrastructure and Adversely Affected Oil Production



Source: Satellite images from the US Commerce Department's VIIRS; World Bank staff estimates.

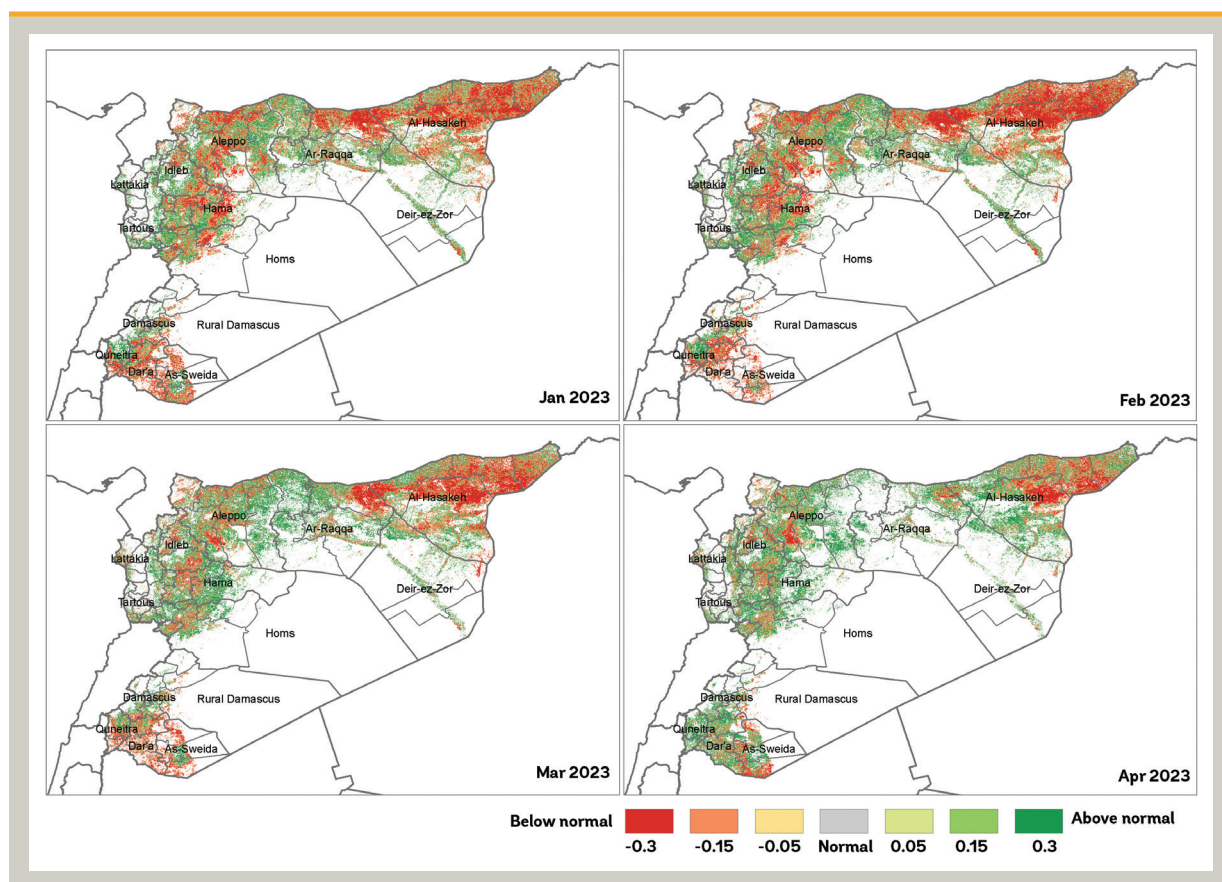
Note: Nighttime illumination from gas flaring is commonly used as a proxy for oil production. The gray areas are locations without any gas-flaring sites. The two black lines show locations where the earthquake shaking was (a) strong/very strong/severe - earthquake intensity of VI or above and (b) moderate - earthquake intensity of V. Earthquake shaking is based on the USGS shakemap version 17, released on April 14, 2023.

**The earthquake had a moderate impact on agricultural output.** The earthquake's direct effect on crop production was limited, partly because it happened during the winter season, during a down period in the crop cycle.<sup>18</sup> Local reports indicated damage to water infrastructure in Hama and Lattakia governorates, as

well as the Afrin dam in the northwest. Key-informant surveys indicate that the earthquake damaged agricultural

<sup>18</sup> EBRD. 2023. "Regional Economic Prospects." <https://www.ebrd.com/what-we-do/economic-research-and-data/data/forecasts-macro-data-transition-indicators.html>.

**FIGURE 7 • Remotely Sensed Vegetation Indices Suggest that the Earthquake Had a Minimal Direct Impact on Crop Yields**



Source: Moderate-Resolution Imaging Spectroradiometer (MODIS), Vegetation Indices; World Bank staff estimates.  
 Note: EVI standardized anomaly is a dimensionless measure that accounts for variations in the mean and standard deviation of the time series data, allowing for a more robust comparison of anomalies across different time periods. The map only shows the crop yield conditions at croplands.

equipment and reduced access to agricultural inputs and water in the affected areas.<sup>19</sup> However, the Enhanced Vegetation Index (EVI), a reliable proxy for crop yield, showed no substantial changes in earthquake-affected areas throughout the first four months of 2023 (Figure 7). Rather, the EVI revealed a notable increase in crop yields during the first five months of 2023 compared to the same period in 2022, when output had been close to its historical low. Overall, crop yields in 2023 were broadly stable and consistent with the average yields observed since the onset of the Syrian conflict (Figure 8).

### The earthquake worsened Syria’s trade balance

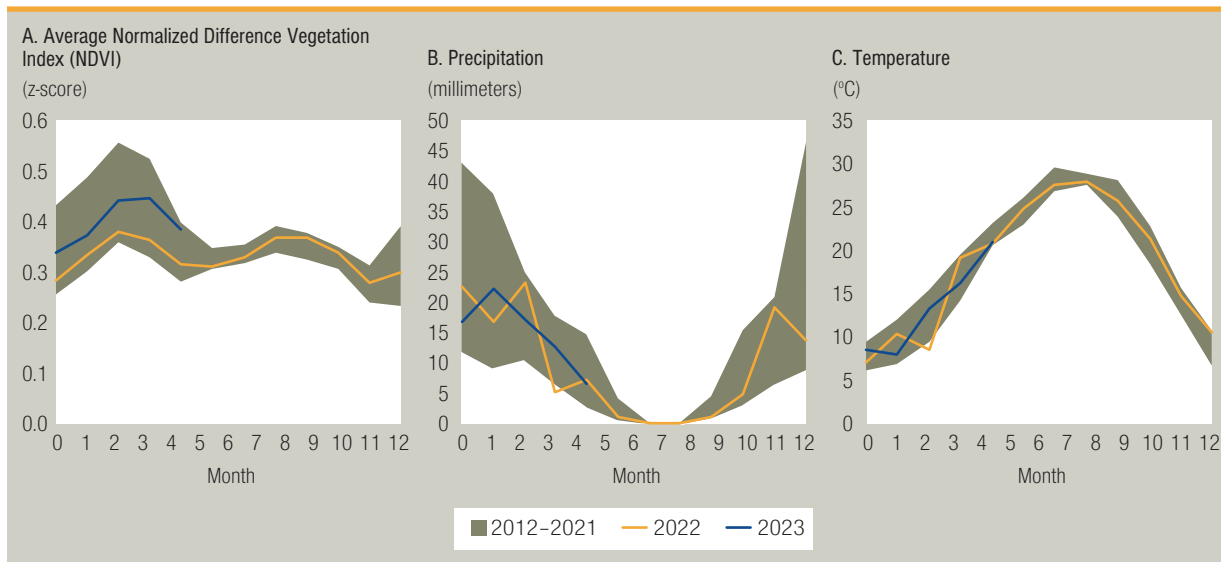
**The earthquake caused a temporary decline in maritime trade.**<sup>20</sup> Estimates based on shipping-

position data suggest that shipping operations halted completely for one week following the earthquake. While Syria’s main ports did not suffer significant direct

<sup>19</sup> FAO. 2023. “Syrian Arab Republic – Post-earthquake rapid needs assessment on agricultural livelihoods and production in the northwest – Data in Emergencies Impact report, April 2023.” Rome, Italy. <https://doi.org/10.4060/cc5764en>.

<sup>20</sup> In the absence of official trade statistics, this analysis uses shipping-position data to monitor recent trade activity. Over 80 percent of global merchandise trade by volume is carried by the international shipping industry (United Nations Conference on Trade and Development, 2018). Cargo ships are equipped with a device that periodically emits signals containing essential information about the vessel’s location, speed, draught, and other relevant data.

**FIGURE 8** • Remotely Sensed Vegetation Indices Show Stable Crop Yields in 2023, with Output Consistent with Previous Years



Source: Anomaly Hotspots of Agricultural Production, Joint Research Centre, European Commission; NDVI from MODIS, processed by authors in Google Earth Engine; World Bank staff estimates. Note: NDVI is a satellite-derived proxy of vegetation status, which represents agricultural production to some extent. The standardized anomaly Z-score of the NDVI indicates how many standard deviations the NDVI is from its historical average. The average NDVI is calculated from MODIS images that overlap the agricultural growing season in Syria.

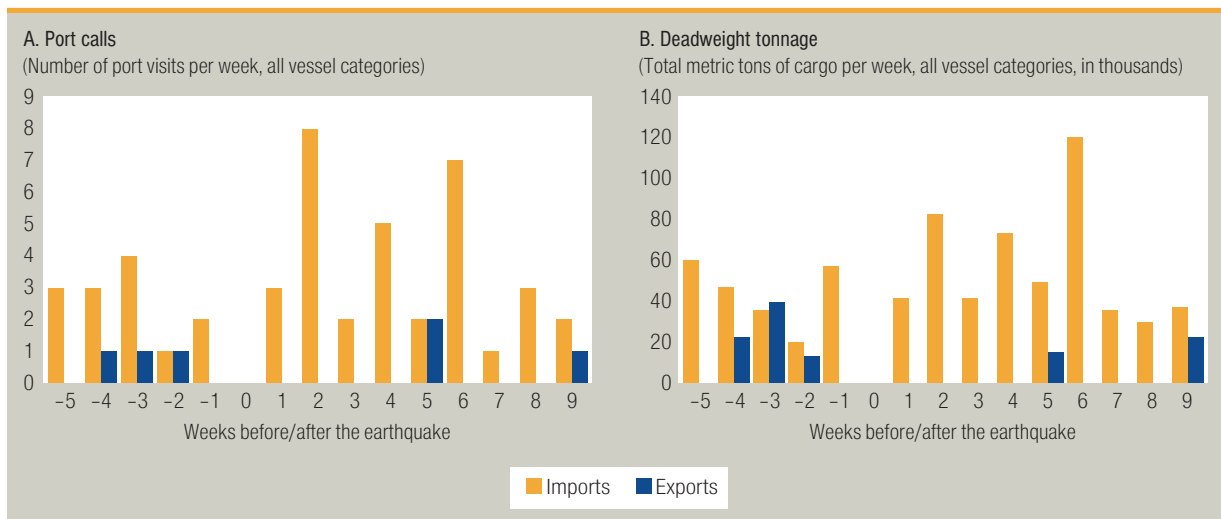
damage, the extensive destruction of roads in major port cities such as Tartous and Lattakia likely contributed to the disruption of trade activities. In addition, damaged port infrastructure in Iskenderun and the temporary interruption of operations at Ceyhan Port in Türkiye<sup>21</sup> could further hinder trade activity in Syria.<sup>22</sup>

**Maritime data indicate a significant uptick in import volume in the weeks after the earth-**

<sup>21</sup> Birch, Andrew, and Jessica Leyland. 2023. "The economic and operational impacts in Syria-Turkey earthquake zones." S&P Global Market Intelligence, February 27, 2023. <https://www.spglobal.com/marketintelligence/en/mi/research-analysis/the-economic-and-operational-impacts-in-syriaturkey-earthquake.html>

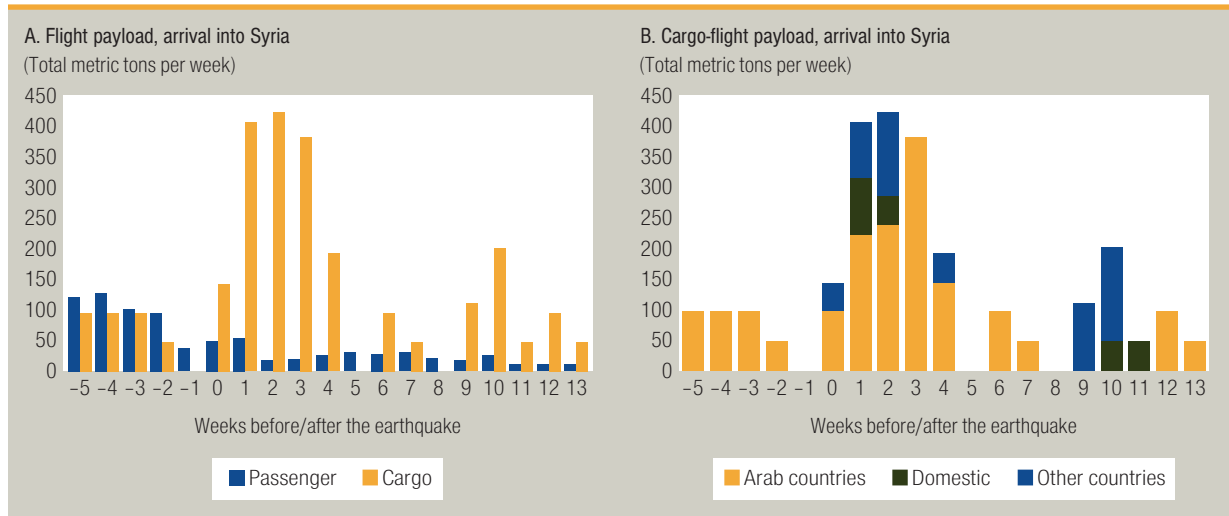
<sup>22</sup> In 2021, according to the UN's COMTRADE database, Türkiye is the top destination of Syria's exports and second largest source of Syria's imports.

**FIGURE 9** • Shipping Activity Came to a Halt after the Earthquake, then Resumed as Aid and Recovery Imports Rose, though Exports Remained Very Low



Source: UN Comtrade Monitor <https://comtrade.un.org/data/ais>; World Bank staff estimates.

**FIGURE 10 • Cargo-Flight Arrivals Spiked in the Weeks Following the Earthquake, while Passenger-Flight Arrivals Declined**



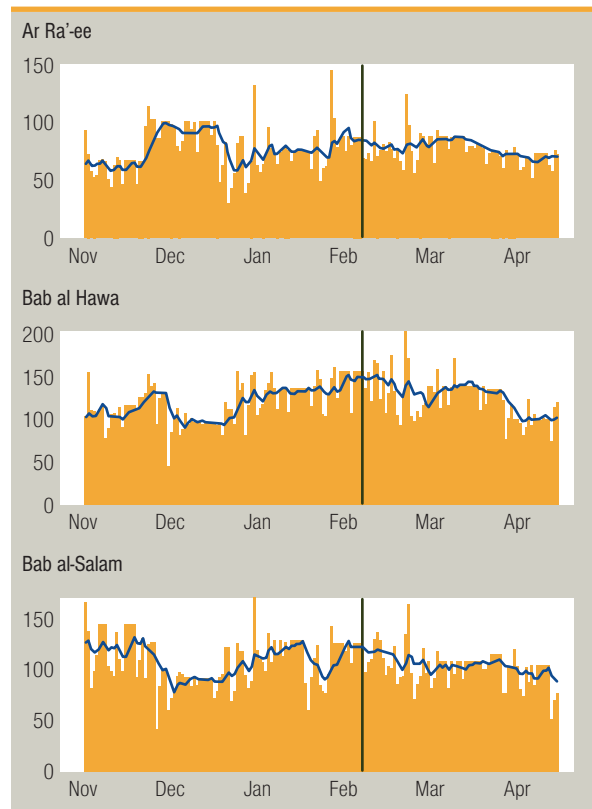
Source: World Bank Global Aviation Dashboard, <http://aviation.worldbank.org>; World Bank staff estimates.  
Note: Payload is the combined weight of passengers, cargo, and baggage.

quake, likely reflecting an influx of humanitarian aid and imports to support post-disaster recovery (Figure 9A and Figure 9B). Policy actions by the Central Bank of Syria (CBS) may also have boosted import volumes. Decision 336 on March 14 temporarily allowed traders and importers to purchase imported raw materials directly using their own foreign-currency holdings rather than the official funding mechanisms managed by the CBS. Due to the disruptive effects of the conflict and the imposition of international sanctions, exports from Syria remain at extremely low levels.

**Cargo-flight arrivals increased dramatically in the weeks after the earthquake, as emergency humanitarian aid poured into the country (Figure 10A).** Prior to the earthquake, most cargo destined for Syria originated in Arab countries, including some transshipped cargo from western countries. In the three weeks following the earthquake, the arrival of humanitarian assistance and rescue teams drove a surge in cargo arrivals (Figure 10B), but most incoming cargo still originated from Arab countries. The number of domestic flights also increased, likely due to the transportation of aid from Damascus to the affected regions.

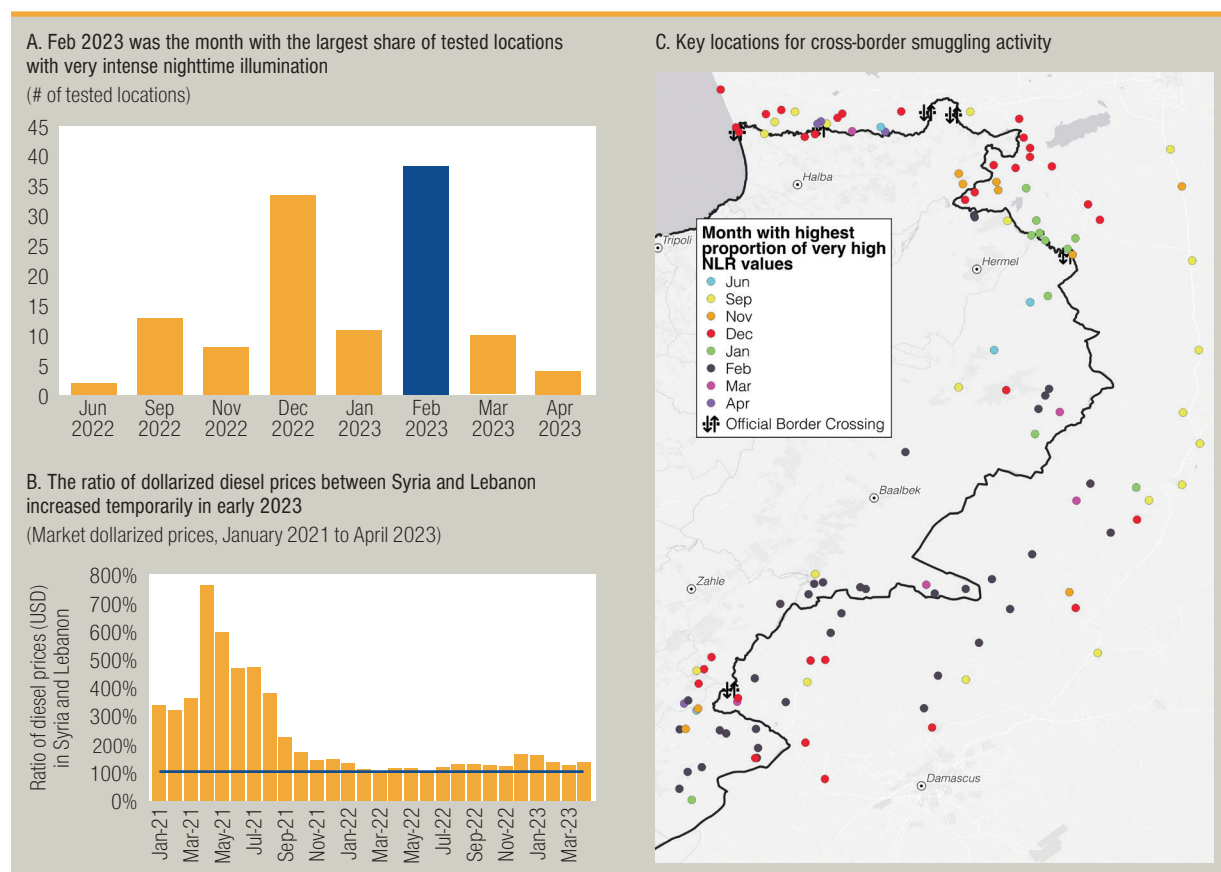
**Nighttime illumination data show no significant increase in activity at the Syria-Türkiye border crossings authorized for aid delivery after the earthquake.** The destruction of roads connect-

**FIGURE 11 • After the Earthquake, No Increase in Activity Was Observed at the Syria-Türkiye Border Crossings Approved for Aid Delivery**



Source: Satellite images from the US Commerce Department's VIIRS; World Bank staff estimates.

**FIGURE 12** • Smuggling Activity between Lebanon and Syria Temporarily Surged in Response to Widespread Supply Shortages Following the Earthquake



Source: Syrian Pound Today; Dollar to Lebanese Lira Today; Satellite images from the US Commerce Department's VIIRS; Tahaleel's analysis.  
 Note: Very intensive Nighttime Light Radiance (NLR) values represent those are equal to or greater than ten times the median value for the time series.

ing Antakya to the Bab al-Hawa border crossing delayed the flow of humanitarian assistance from Türkiye to northwest Syria in the first few days after the earthquake. Despite the resumption of humanitarian aid, nighttime illumination around the Bab al-Hawa crossing suggests overall trade activity declined after the earthquake. Likewise, the reopening of the border crossings at Bab al-Salam and Al Ra'ee in the Aleppo governorate for aid delivery did not lead to an increase in overall trade activity at those points (Figure 11).

**Smuggling activity between Lebanon and Syria temporarily surged due to widespread supply shortages following the earthquake.** Nighttime illumination data can track activity at known smuggling sites along the Lebanon-Syria border. Activity at these sites had already increased in early 2023 amid mounting fuel shortages and rising prices on the parallel market. Cross-border activity increased further in the

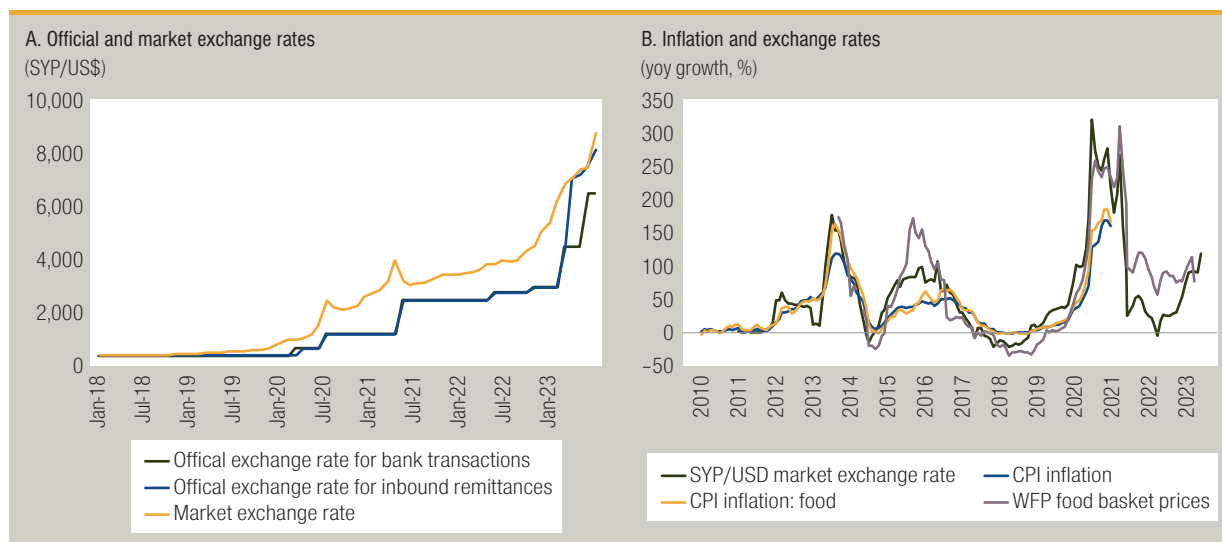
weeks after the earthquake (Figure 12A), as Syrian fuel prices substantially exceeded dollarized prices in the Lebanese market (Figure 12B). However, the government's distribution of strategic fuel reserves, combined with a surge in Iranian oil shipments in the weeks after the earthquake, caused fuel prices to decline in March.<sup>23</sup> As arbitrage opportunities dwindled, cross-border activity quickly returned to normal levels (Figure 12C).

### Currency depreciation and price increases both accelerated after the earthquake

**Following the earthquake, the Syrian pound depreciated 23 percent against the US dollar in the**

<sup>23</sup> The Syria Report. 2023. "Iranian Oil Shipments Remained High in Q1 2023." April 4, 2023. <https://syria-report.com/iranian-oil-shipments-remained-high-in-q1-2023/>.

**FIGURE 13 • After the Earthquake, the Exchange Rate Depreciated while Prices Rose**



Source: Syrian Pound Today, <https://sp-today.com/en/>; WFP Syria Price Database; Central Bureau of Statistics, Syria; World Bank staff estimates.

**parallel foreign exchange market, reaching about SYP 8,800/US\$ in May 2023.** Deteriorating economic conditions in Syria, the strengthening of the US dollar, and the spillover effects of currency devaluation in neighboring Lebanon and Türkiye drove the depreciation. In response, the CBS implemented devaluation measures aimed at narrowing the gap between the official and parallel-market exchange rates. These measures included a regular devaluation of the exchange rate for inbound remittances, which was designed to capture earthquake-related donations by bringing the official rate closer to the parallel rate. By the end of May, the official exchange rate for inbound remittances had reached SYP 8,200/US\$. The CBS also devalued the exchange rate it uses in transactions with private banks and financial institutions in early April, setting it at SYP 6,532/US\$. This marked the second devaluation of 2023 (Figure 13A and Figure 13B).

**Estimates based on prices for essential foods indicate that consumer price inflation rose by 11 percent in April 2023.**<sup>24</sup> Shortages of goods, rising transportation costs, and the heightened overall demand following the inflow of foreign aid all contributed to rising prices. Although currency depreciation also boosted inflation, the aggressive devaluation of the official exchange rates is unlikely to have significantly increased inflationary pressures on its own. Empirical analysis suggests that since October of 2019, inflation has been primarily influenced by

changes in the parallel-market exchange rate rather than the official rate (Box 1).

### Price changes varied considerably across regions

**Significant regional variations in market prices and movements were already evident before the earthquake.** Both before and after the earthquake, food and fuel prices were lowest in AANES-controlled areas, where most of the country's food and energy are produced. Prices were highest in government-controlled areas before the earthquake (Figure 15A and Figure 15B). Prices in SNA-controlled Aleppo and Syrian Salvation Government (SSG)-controlled Idlib occupied the middle ground.

**Disparities in goods prices increased following the earthquake.** By April 2023, the gap between the maximum and minimum food-basket costs across control zones had reached 42 percent, up from 36 percent the year before. Persistent price disparities resulted from inadequate connectivity, trade restrictions, and security concerns along major domestic trade routes (Figure 16A). Following the earthquake, significant disparities in food costs were also observed across governorates (Figure 16B).

<sup>24</sup> Consumer price inflation is proxied by the WFP's minimum food basket price index.



## BOX 1: RECOGNIZING REALITY: IS INFLATION DRIVEN BY CHANGES IN SYRIA'S OFFICIAL EXCHANGE RATE OR IN ITS PARALLEL-MARKET RATE?

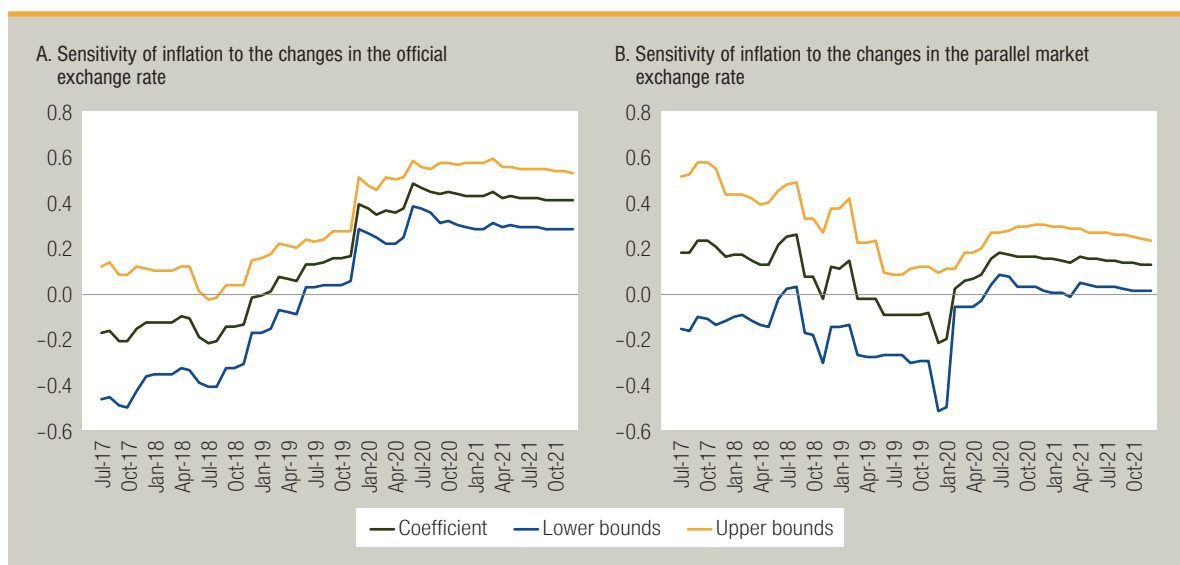
Countries experiencing currency crises often maintain dual or multiple exchange-rate regimes. In such situations, empirical evidence suggests that price levels tend to “recognize reality” by aligning with the parallel exchange rate rather than the official rate.<sup>a</sup> The parallel foreign exchange market that has operated in Syria since the start of the conflict provides an opportunity to test the “recognizing reality” hypothesis.

**An exchange rate pass-through regression can assess the statistical relationship between inflation and the official and parallel exchange rates.**

This technique treats the official and parallel exchange rates as independent variables to establish their respective influences on inflation. The regression formula is:  $p_t - p_{t-1} = \alpha + \beta_1 \Delta erp_t + \beta_2 \Delta ero_t + \epsilon_t$ , where  $\Delta erp_t$  and  $\Delta ero_t$  denote, respectively, changes in the parallel and official exchange rates. The coefficient  $\beta_1$  shows the response of inflation to the change in the parallel market exchange rate, while the coefficient  $\beta_2$  measures the response of inflation to the change in the official exchange rate.<sup>b</sup>

**The results show that the parallel market has been the biggest determinant of inflation in Syria since late 2019.** From October 2019 to November 2021, the sensitivity of inflation to the parallel-market exchange rate increased markedly and remained high, whereas the sensitivity of inflation to the official exchange rate approached zero (Figure 14). This stands in contrast to the pre-2018 period, when the official exchange rate was the better predictor of inflation. Assessing the state-dependent response of inflation confirms that changes in the parallel-market exchange rate have been the main driver of inflation since October 2019.<sup>c</sup>

**FIGURE 14 • Inflation in Syria Reflects Changes in the Parallel, rather than the Official, Exchange Rate**



Source: Central Bureau of Statistics, Syria; World Bank staff estimates.

Note: The graphs provide rolling thirty-month window estimates and 95% confidence intervals of the sensitivity of inflation to the changes in the parallel and official exchange rates using standard exchange rate pass-through regressions à la Carrière-Swallow et al. (2023) and Gopinath, Itskhoki, and Rigobon (2010).

<sup>a</sup> According to Gray (2021), official exchange rates are often not market-clearing, resulting in prices in the economy reflecting the parallel exchange rate. However, Gray's study does not provide empirical evidence to support this hypothesis. Official exchange rates tend to be stronger than the parallel rate, causing demand to exceed supply and preventing the market from clearing at the official rate.

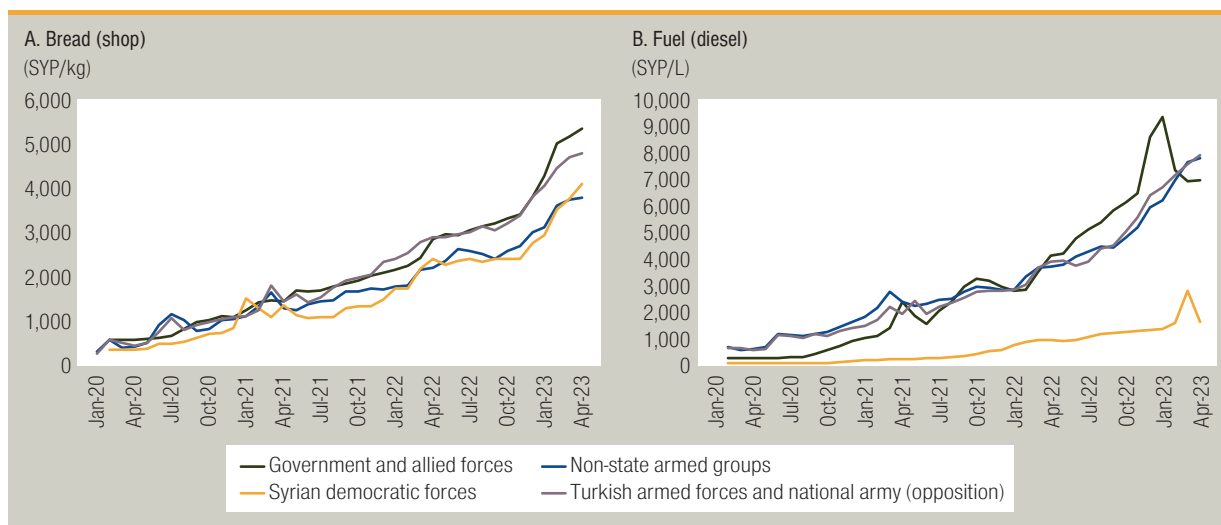
<sup>b</sup> Whereas the main goal of this analysis is to gauge the effects of the changes in the parallel and official market exchange rates on inflation in Syria, estimates of the ERPT for Syria are obtained in a technical note using two different econometric methodologies. The findings also suggest that the degree of exchange rate pass-through in Syria is larger than the average pass-through in lower and middle-income countries.

<sup>c</sup> Data on the Consumer Price Index (CPI) is not available after December 2021. Qualitatively and quantitatively similar results to those reported in the box are obtained when the WFP's food basket price is used as the price index in lieu of the CPI.

**After the earthquake, prices rose far more sharply in some regions than in others, reflecting the diverse, locally specific shocks caused by the earthquake and subsequent response efforts.**

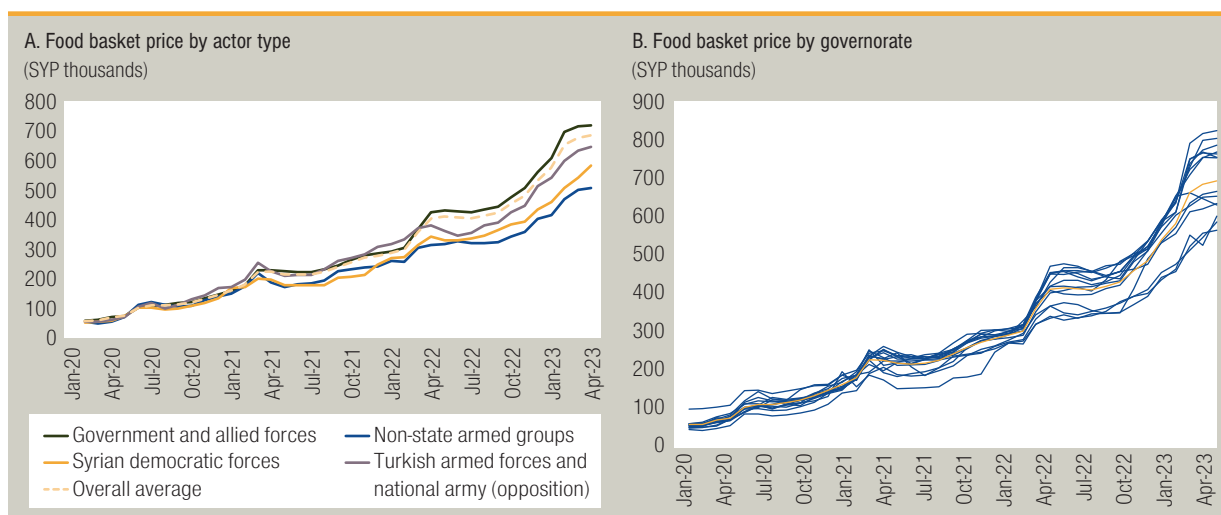
Fuel prices rose significantly in earthquake-affected areas in the northwest due to the disruption of supply chains from Türkiye, while the provision of subsidized heating diesel in less-affected government-held areas

**FIGURE 15 • Price Changes Varied Substantially Across Zones of Control**



Source: WFP Syria Price Database [https://dataviz.vam.wfp.org/economic\\_explorer/prices?adm0=238](https://dataviz.vam.wfp.org/economic_explorer/prices?adm0=238); World Bank staff estimates.  
 Note: The zones of control are based on Office for the Coordination of Humanitarian Affairs (OCHA) data as of July 10, 2022.

**FIGURE 16 • The Disparities in Prices of Goods Increased Following the Earthquake**



Source: WFP Syria Price Database [https://dataviz.vam.wfp.org/economic\\_explorer/prices?adm0=238](https://dataviz.vam.wfp.org/economic_explorer/prices?adm0=238); WFP Syria Market Price Watch Bulletin; World Bank staff estimates.  
 Note: (a) The standard food basket is a group of essential food commodities. In Syria, the food basket is set at a group of dry goods providing 2,060 kcal a day for a family of five during a month. The basket includes 37 kg of bread, 19 kg of rice, 19 kg of lentils, 5 kg of sugar, and 7 liters of vegetable oil. (b) The zones of control are based on OCHA data as of July 10, 2022.

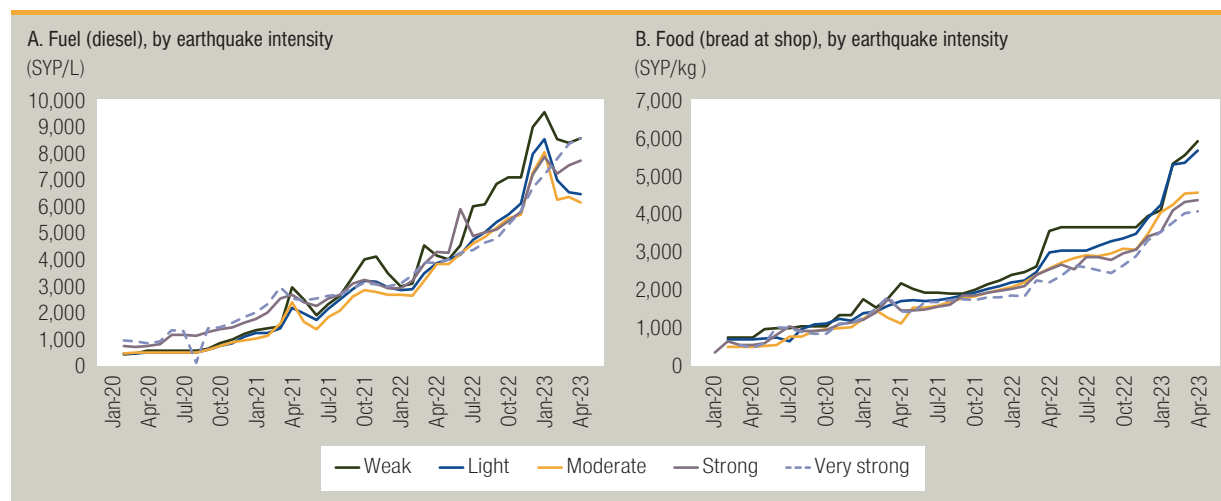
helped ease pressure on fuel prices (Figure 17A). Immediately after the earthquake, food prices surged nationwide.<sup>25</sup> However, prices began to decline soon after, possibly due to an increase in food aid to affected households (Figure 17B).

**Rents rose on average but fell in northwest Syria, possibly due to displacement and migration from affected areas.** Rents increased significantly in northeast Syria, where earthquake damage was minimal, which may indicate that an influx of earth-

quake-affected people from government-controlled areas and the northwest drove a surge in housing

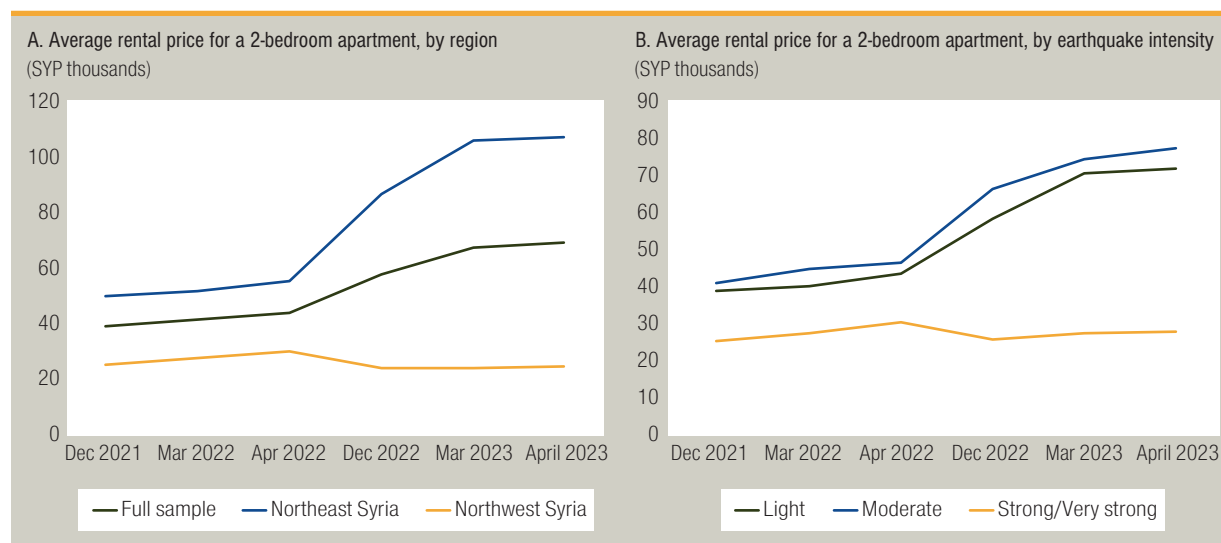
<sup>25</sup> According to the WFP, the nominal prices of key commodities in the food basket, comprised of bread, lentils, vegetable oil, sugar, and rice, increased by over 10 percent in almost all of the hard-hit governorates of Aleppo, Hama, Idleb, and Latakia two weeks after the earthquake. The prices of food and other essential commodities also rose in government-held areas that were not severely affected by the earthquake.

**FIGURE 17 • Variations in Price Changes Across Regions Widened after the Earthquake**



Source: WFP Syria Price Database [https://dataviz.vam.wfp.org/economic\\_explorer/prices?adm0=238](https://dataviz.vam.wfp.org/economic_explorer/prices?adm0=238); World Bank staff estimates.  
 Note: Earthquake shaking is based on the USGS shakemap version 17, released on April 14, 2023.

**FIGURE 18 • Following the Earthquake, Rents Rose Nationwide but Fell in Northwest Syria, Possibly due to Displacement from Disaster-Affected Areas**



Source: REACH Humanitarian Situation Overview in Syria (HSOS); World Bank staff estimates.  
 Note: (a) Survey data cover non-government-controlled areas of northwestern and northeastern Syria and are collected through key informant interviews at the community level. December 2022 data were used because they contain information on the northeastern and northwestern regions, whereas January 2023 data only includes information on northwestern Syria. (b) Earthquake shaking is based on the USGS shakemap version 17, released on April 14, 2023.

demand in the northeast (Figure 18A). Likewise, the decline in housing costs in the northwest was likely due to a drop in demand for rental units as large numbers of people relocated to other areas (Figure 18B). Humanitarian assistance and reconstruction programs have also provided some temporary shelters and other alternative housing options, further contributing to the decrease in rental prices in the northwest.

**Divergent prices and market patterns reflect Syria's deeply divided economy.** With the exception of the fuel and food trade between the Syrian government and the AANES, cross-border trade with neighboring states and regional powers such as Iran, Iraq, Lebanon, and Türkiye has become more important to the different zones of control than internal trade with other parts of Syria. Fuel prices

are a case in point, as divided territorial control and supply chains result in large price disparities (Box 2).

## The earthquake exacerbated Syria's severe preexisting challenges with household welfare

**Prior to the earthquake, the affected areas were already home to the largest concentration of IDPs resulting from the conflict.** By August 2022,

the affected areas housed approximately 3 million IDPs, or 46 percent of all IDPs in Syria (Table 3). In Idleb, nearly two-thirds of the local population was displaced. Most IDPs living in camps were in affected areas outside of government control.<sup>26</sup>

<sup>26</sup> In affected areas under government control, the large majority of IDPs live in residential areas, either accommodated in collective shelters, hosted by friends or relatives, or living in rented accommodations.

### BOX 2: EXPLAINING REGIONAL DISPARITIES IN FUEL PRICES ACROSS SYRIA

**Due to the fragmentation of the Syrian economy, domestic fuel prices vary dramatically across regions.** In 2022, diesel prices in Damascus were 3.8 to 8.2 times higher than those in the AANES-controlled city of Hasakeh. The AANES and associated SDF forces in the northeast control most of Syria's major oil fields, while the Syrian government retains control of the country's two major refineries. Fuel in the AANES is sourced via a barter and revenue-sharing agreement, under which the AANES supplies crude oil to the government in exchange for refined fuel products. Some fuel is also produced at informal refineries in AANES-controlled areas or sourced from neighboring Iraq. The government, meanwhile, mainly sources crude oil for its refineries from Iran, along with smaller volumes from AANES areas, while smugglers also periodically bring fuel across the border from Lebanon. In Aleppo and Idleb, most fuel is imported from Türkiye, though some lower-quality fuel is also transported from AANES-controlled areas, and there are reports of fuel smuggling from government-controlled areas.

**To examine the impact of different factors on diesel prices, World Bank staff performed a monthly multiple linear regression analysis using data from February 2020 to April 2023.** In this model, the natural logarithm of diesel prices in the local market is the dependent variable, while the natural logarithm of local wages, the distance to a major refinery, and dummy variables representing each control group serve as independent variables. The Sharpley value-decomposition method is used to measure the relative contributions of various factors. The regression equation is defined as follows:

$$\text{Log(diesel)} = \alpha + \beta_1 \text{Log(wage)} + \beta_2 \text{Distance} + \beta_3 \text{Government and allied forces} + \beta_4 \text{Non - state armed groups} + \beta_5 \text{Turkish - Controlled Forces} + \epsilon_t$$

The coefficient  $\beta_1$  indicates that a 1 percent increase in local wages leads to a  $\beta_1$  percent increase in diesel prices. The coefficient  $\beta_2$  indicates that each 1 km increase in the distance to a refinery is associated with a  $100 * \beta_2$  percent increase in diesel prices. The coefficient  $\beta_3 \sim \beta_5$  shows that diesel prices in areas controlled by the government and its allies, nonstate armed groups, and Turkish-aligned forces are  $100 * \beta_3$  percent  $\sim 100 * \beta_5$  percent higher than prices in areas controlled by the SDF.

#### The analysis highlights how zones of control influence fuel prices.

Differences in the zone of control account for about 20 percent of the observed disparities in diesel prices (Table 1: Sharpley value decomposition of factors influencing diesel prices), likely due to the supply-chain dynamics described above. Market factors also play a prominent role in explaining disparities in diesel prices. Areas of Syria with higher daily wage rates, a proxy for local price standards, tend to have higher diesel prices. In addition, greater distances between local markets and oil refineries, a proxy for transportation costs, also correlate with higher diesel prices (Table 2).

#### Smuggling between the government- and AANES-controlled regions has narrowed but not eliminated the price differences.

Deir Ezzor, a node market in the Syrian government's fuel supply chain, is located just south of the AANES-controlled oil fields. Diesel prices in Deir Ezzor are consistently lower than those in other government-controlled areas (Figure 19A). As trading and smuggling activities intensified in northeast Syria, local fuel prices fell (Figure 19B). Lower diesel prices in Deir Ezzor markets corresponded to higher levels of nighttime illumination in Deir Ezzor and in other key towns along the government's fuel supply chain (Figure 19B).

**TABLE 1 • Sharpley Value Decomposition of Factors Influencing Diesel Prices**

Factor	Shapley value (estimate)	Share in %
Wage	0.594	78.3%
Distance from the refinery	0.027	3.5%
Zones of control	0.139	18.2%
TOTAL	0.760	100%

Source: WFP Syria Price Database [https://dataviz.vam.wfp.org/economic\\_explorer/prices?adm0=238](https://dataviz.vam.wfp.org/economic_explorer/prices?adm0=238); Satellite images from the US Commerce Department's VIIRS; World Bank staff estimates.

(continued on next page)

BOX 2: EXPLAINING REGIONAL DISPARITIES IN FUEL PRICES ACROSS SYRIA (continued)

TABLE 2: REGRESSION ANALYSIS OF DIESEL PRICE VARIATION ACROSS SYRIAN REGIONS

VARIABLES	(1) Log (diesel)	(2) Log (diesel)
Log (wage)	1.330*** (0.0217)	1.355*** (0.0169)
Distance from the refinery (km)		0.000743*** (0.000109)
Government and allied forces (SDF as based group)		1.577*** (0.0418)
Non-state armed groups (SDF as based group)		1.754*** (0.0561)
Turkish-Controlled Forces (SDF as based group)		1.396*** (0.0705)
Constant	-4.291*** (0.194)	-6.076*** (0.164)
Observations	2,568	2,568
R-squared	0.594	0.760

Note: Standard errors in parentheses.

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1

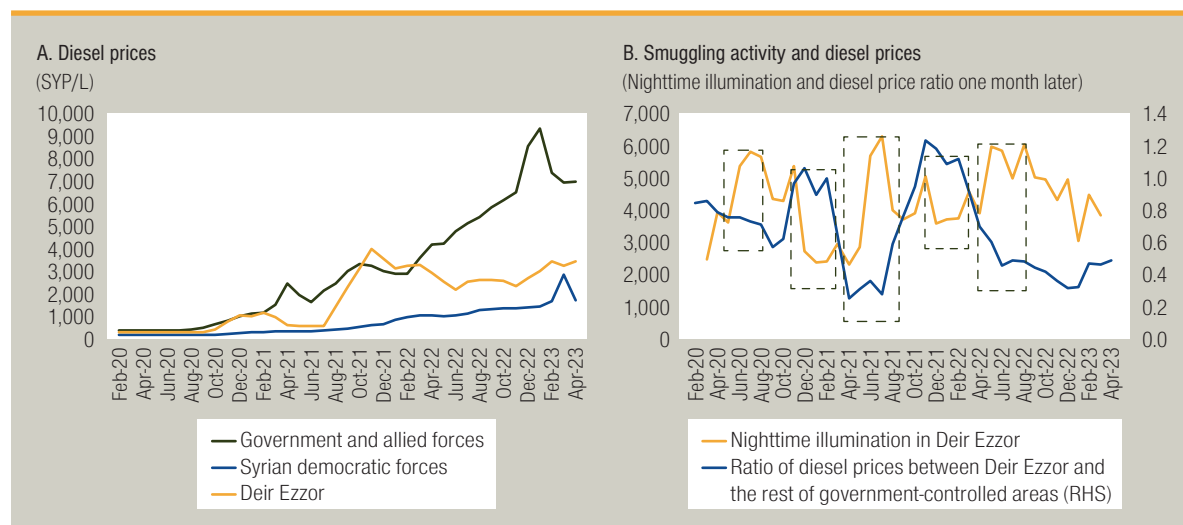
<sup>a</sup> Transportation costs were measured based on the distance between the Homs refinery<sup>1</sup> and the markets assessed by WFP using Google Maps.<sup>2</sup>

<sup>1</sup> Refined fuel is distributed from the Homs and Banias refineries and from Hasiyeh, but the distance from the Homs refinery was chosen for model parsimony because it is the central distribution point.

<sup>2</sup> Information on the distance and average slope of the route was gathered from Google Earth Pro. Actual distance to refineries may be much larger than Euclidian or shortest-route distance because of roadblocks and longer-than-necessary actual routes.

<sup>b</sup> The zones of control are based on OCHA data as of July 10, 2022.

FIGURE 19 • Increased Licit and Illicit Fuel Trading is Associated with Lower Prices Along the Fuel Supply Chain in Government-Controlled Areas



Source: WFP Syria Price Database [https://dataviz.vam.wfp.org/economic\\_explorer/prices?adm0=238](https://dataviz.vam.wfp.org/economic_explorer/prices?adm0=238); Satellite images from the US Commerce Department's VIIRS; World Bank staff estimates

Note: The zones of control are based on OCHA data as of July 10, 2022.

**TABLE 3 • Distribution of IDPs in Affected Areas by Housing Type**

Governorate	Non-Camp	Camp	Total IDPs	Share of IDPs in Total Population
Idleb	801,719	997,728	1,799,447	64.7
Aleppo	908,249	331,437	1,239,686	33.2
Hama	100	-	100	0.4
Lattakia	3,015	-	3,015	10.4
Total in affected areas	1,713,083	1,329,165	3,042,248	46.3
Total in Syria	5,199,119	1,437,045	6,636,164	31.5

Source: USGS ShakeMap version 17 and HNAP population data as of August 2022.

Note: Geographical mapping of population and intensity is performed at the community level (Admin 4).

The table shows the population of interests in communities where earthquake intensity ranked VI (strong) and above.

**Earthquake-induced displacement increased the number of IDPs in Syria by about 10 percent.**

Initial reports suggest that about 34,000 households were displaced in government-controlled areas,<sup>27</sup> while 86,500 households were displaced in northwestern Syria.<sup>28</sup> Assuming an average of five members per household, these figures suggest that about 600,000 people have been displaced as a direct consequence of the earthquake, adding to the 6.8 million people that had already been internally displaced by the war. In April 2023, survey respondents in 306 of 726 communities in northwest Syria reported residents having been displaced within their own community due to the earthquake (Figure 20).<sup>29</sup>

**Access to services deteriorated further in the earthquake's aftermath, particularly in the hardest-hit areas.**

Survey data suggests that significant disparities in access to basic services have emerged across regions.<sup>30</sup> While the communities most affected by the earthquake have relatively high rates of access to health services and sewage connections, both indicators have declined since the earthquake. Among the most-affected communities, the share that reported having access to health services fell from 54.1 percent in December 2022 to 50.7 percent in April 2023 (Figure 21A), while the share that reported being connected to a sewage network declined from 53.6 percent to 52.5 percent (Figure 21B). Reduced access to essential services like water, sanitation, and healthcare is likely to further worsen the ongoing cholera outbreak and expose the population to elevated risks from other communicable diseases. The disaster exacerbated house-

hold vulnerability, price inflation, and liquidity issues among financial service providers. While markets have largely remained operational and resilient, the share of strongly affected communities that reported having access to markets declined from 97.9 percent in December 2022 to 96.0 percent in April 2023 (Figure 21C).

**The earthquake has further undermined the already precarious welfare of households in affected areas, driving some to resort to coping strategies.**

Households based in these areas were already highly vulnerable and had limited capacity to cope with the earthquake's impact. In April 2023, survey respondents in most communities reported borrowing money (87.5 percent), purchasing goods on credit (76.3 percent), or sending children to work (60.7 percent) to bolster their income (Figure 22A). The adoption of coping strategies such as selling household items and productive assets has increased

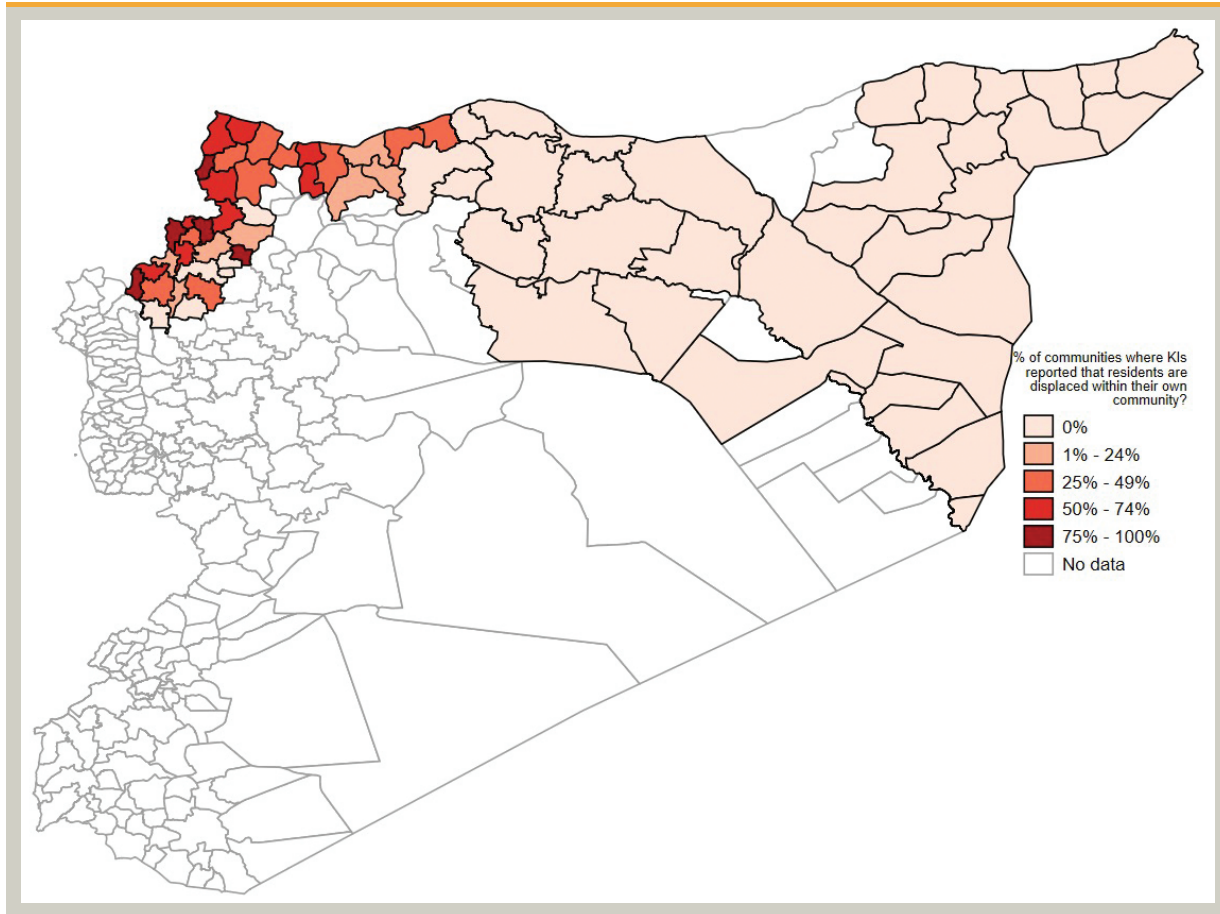
<sup>27</sup> DFS. 2023. "Syria Earthquake February 2023 Government-controlled areas, Bi-Weekly Highlights – 21/02/2023." ReliefWeb, February 21, 2023. <https://reliefweb.int/report/syrian-arab-republic/syria-earthquake-february-2023-government-controlled-areas-bi-weekly-highlights-21022023>.

<sup>28</sup> CCCM Cluster. 2023. "Earthquake Displacement Updates – North West Syria (17 February, 2023)." ReliefWeb, February 17, 2023. <https://reliefweb.int/map/syrian-arab-republic/earthquake-displacement-updates-north-west-syria-17-february-2023>.

<sup>29</sup> REACH HSOS. 2023. <https://www.reach-initiative.org/where-we-work/syria/>.

<sup>30</sup> REACH HSOS. 2023. <https://www.reach-initiative.org/where-we-work/syria/>.

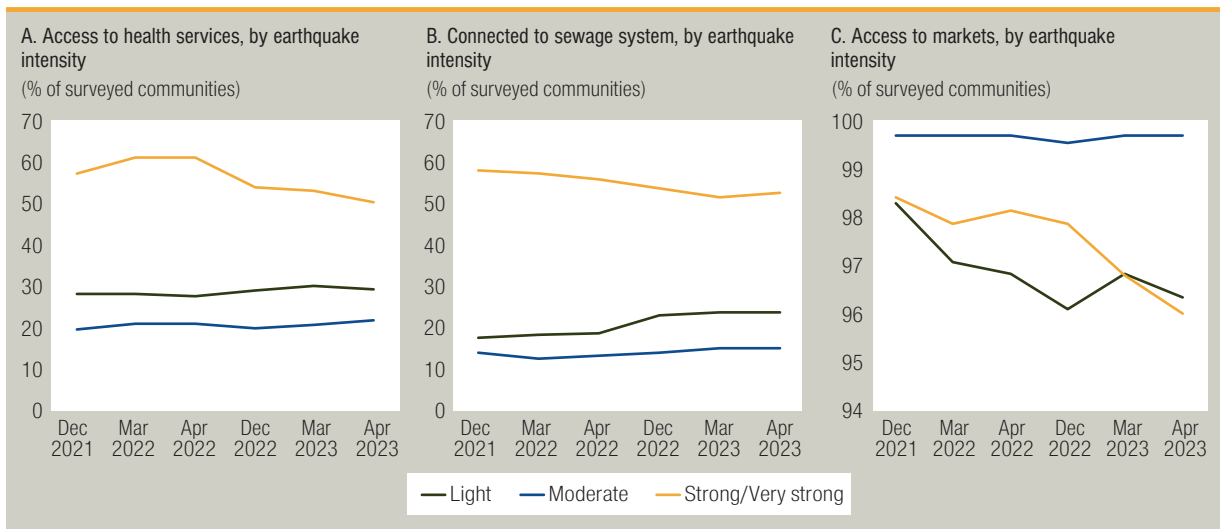
**FIGURE 20 • The Earthquake Displaced Large Numbers of People within their Own Communities**



Source: REACH HSOS, World Bank staff estimates.

Note: Data for "IDPs displaced by earthquake" is from the April 2023 HSOS, covering 1,323 communities in Northeast Syria and 782 communities in Northwest Syria.

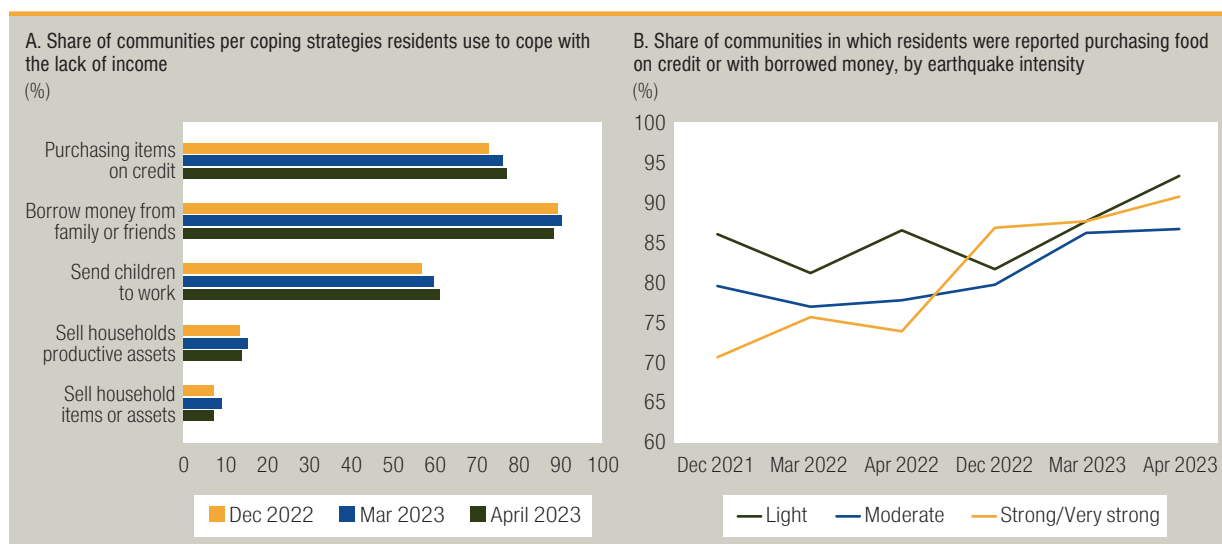
**FIGURE 21 • Access to Services Has Declined Since the Earthquake, Especially in the Most-Affected Areas**



Source: REACH HSOS, World Bank staff estimates.

Note: Survey data cover parts of northwestern and northeastern Syria outside of government-controlled areas and are collected at the community level through key informant interviews. In each community, between three and five key informants are selected, including members of civil society groups, local charities, local councils, local relief committees, NGOs, or community leaders. Earthquake shaking is based on the USGS shakemap version 17, released on April 14, 2023.

**FIGURE 22 • The Earthquake Exacerbated the Severe Welfare Challenges Facing Affected Households, Increasing their Reliance on Coping Strategies**



Source: REACH HSOS; World Bank staff estimates.

Note: Survey data cover parts of northwestern and northeastern Syria outside of government-controlled areas and are collected at the community level through key informant interviews. In each community, between three and five key informants are selected, including members of civil society groups, local charities, local councils, local relief committees, NGOs, or community leaders. Earthquake shaking is based on the USGS shakemap version 17, released on April 14, 2023.

since the earthquake. In heavily affected areas, the share of communities in which community members were reportedly purchasing food or other items on credit increased from 86.9 percent in December 2022 to 93.4 percent in April 2023 (Figure 22B).

### A weak domestic disaster response is undermining the recovery

**The Syrian government’s response to the earthquake was limited.** The government mobilized rescue teams, provided urgent healthcare, established temporary shelters, and supplied emergency food rations in government-controlled areas of Aleppo and Lattakia. Damascus allocated a modest emergency fund of about US\$7 million (less than 0.1 percent of GDP) for response and reconstruction efforts and offered tax relief and other financial waivers to earthquake-affected individuals.<sup>31</sup> In March 2023, rations of onions, chickpeas, and lentils were made available through the government’s smartcard system, along with increased access to discounted meat and chicken.<sup>32</sup> However, the government’s subsidy programs have suffered from inconsistency and persistent shortages.<sup>33</sup>

**Constrained by a lack of fiscal resources, the response of the authorities in non-regime held areas has been even more limited.** The SSG, the de facto authority in Idlib governorate, allocated US\$1.6 million (0.02 percent of GDP) to support rescue and evacuation operations, rubble transportation, alternative housing provision, and cash and in-kind assistance for affected households.<sup>34</sup> The Turkish-backed Syrian Interim Government (SIG) assisted

<sup>31</sup> Decree No. 3, issued on March 12, offered financial waivers to individuals affected by the earthquake, waiving taxes, fees, and licensing costs for property rehabilitation and facilitating bank loans with state-covered interest. Additionally, affected individuals were granted a six-month exemption from fees related to unpaid utility bills and any associated penalties.

<sup>32</sup> Crisis Analysis – Syria. 2023. “March ’23 Monthly Report.” <https://ca-syr.org/periodical/march-2023-monthly-report>.

<sup>33</sup> The Syria Report. 2023. “Items Available Through the Smart Card System.” March 14, 2023. <https://syria-report.com/items-available-through-the-smart-card-system/>

<sup>34</sup> The Syria Report. 2023. “Local Authorities Across Syria Seek to Respond to Earthquake Crisis.” February 15, 2023. <https://syria-report.com/local-authorities-across-syria-look-to-respond-to-earthquake-crisis/>.



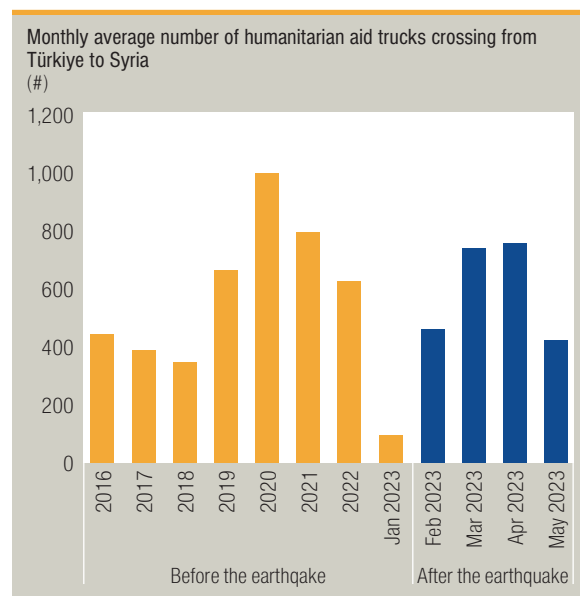
the Syrian Civil Defense in search and rescue missions, formed a governmental committee to oversee response and aid distribution, and established 40 temporary shelters in Aleppo.<sup>35</sup> While these efforts were not trivial, they were far less robust than what might have been expected in an otherwise comparable, non-conflict-affected country.

**Non-Governmental Organizations (NGOs) and humanitarian partners played a central role in the response to the earthquake.** Since February, over 275,000 people in northwest Syria have received emergency tents and nonfood item kits.<sup>36</sup> Since the beginning of 2023, UN agencies have provided US\$16.5 million in cash assistance to about 500,000 people and implemented early recovery interventions such as debris removal and the rehabilitation of schools, health facilities, and other vital infrastructure.<sup>37</sup>

**Divisions between rival groups complicate the delivery of humanitarian aid.** Although the government has approved humanitarian aid shipments to areas outside its control,<sup>38</sup> only one aid convoy has, as of mid-June, been able to traverse from government-held territory to the AANES-controlled northeast through the Tayha crossing.<sup>39</sup> Meanwhile, the various parties to the conflict have impeded the delivery of aid to regions held by their rivals. Local media outlets have accused HTS and SNA factions of obstructing relief efforts by barring government-linked aid organizations from entering their territory.<sup>40</sup>

**Border closures and bureaucratic obstacles hindered the humanitarian response effort.** The delivery of humanitarian assistance to areas outside of government control relied heavily on border crossings with Türkiye. Before the earthquake, only one of the 13 existing border crossings between Türkiye and northwestern Syria—Bab al-Hawa, which connects Idlib governorate with Hatay province—was open for humanitarian aid deliveries. After the earthquake, a first humanitarian convoy entered northwest Syria via Bab al-Hawa on February 9, three days after the critical window for rescuing survivors had closed. The delay was primarily due to the damaged roads connecting Gaziantep to the UN Transshipment Hub in Hatay. It was not until February 14, following authorization from the Syrian government, that the UN started using additional crossings at Bab al-Salam and Al Ra'ee. Between

**FIGURE 23 • The Post-Disaster Monthly Average of Aid Trucks from Türkiye to Syria Remained Below the 2022 Average**



Source: <https://response.reliefweb.int/Türkiye-cross-border>; World Bank staff estimates.

February and May 2023, 2,394 humanitarian trucks crossed into northwestern Syria, yet the monthly average following the disasters was about 5 percent below the monthly average observed in 2022 (Figure 23).

<sup>35</sup> The Syria Report. 2023. "Local Authorities Across Syria Seek to Respond to Earthquake Crisis." February 15, 2023. <https://syria-report.com/local-authorities-across-syria-seek-to-respond-to-earthquake-crisis/>.

<sup>36</sup> OCHA. 2023. "North-West Syria Situation Report." <https://reports.unocha.org/en/country/syria/>.

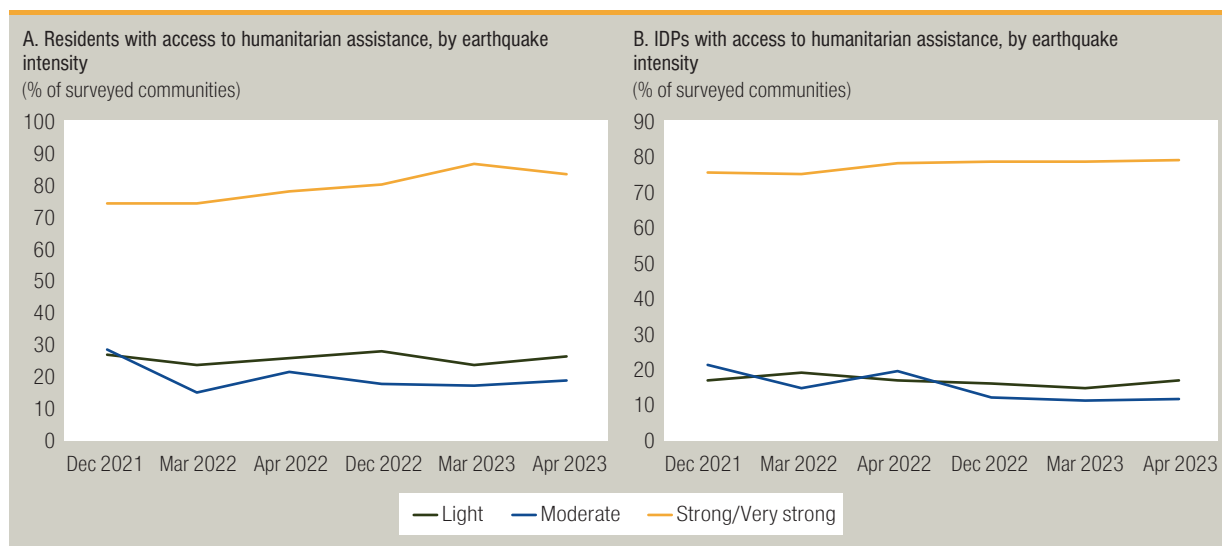
<sup>37</sup> OCHA. 2023. "North-West Syria Situation Report." <https://reports.unocha.org/en/country/syria/>.

<sup>38</sup> The Syria Report. 2023. "UN Inaction and Political Interests Complicate International Aid Delivery to Northwest Syria." February 14, 2023. <https://syria-report.com/un-inaction-and-political-interests-complicate-international-aid-delivery-to-northwest-syria/>.

<sup>39</sup> Crisis Analysis – Syria. 2023. "February '23 Monthly Report." <https://ca-syr.org/periodical/february-2023-monthly-report>.

<sup>40</sup> Human Rights Watch. 2023. "Northwest Syria: Aid Delays Deadly for Quake Survivors." February 15, 2023. <https://www.hrw.org/news/2023/02/15/northwest-syria-aid-delays-deadly-quake-survivors>.

**FIGURE 24 • Improved Access to Humanitarian Aid Has Been Limited and Brief**



Source: REACH HSOS; World Bank staff estimates.

Note: Survey data cover parts of northwestern and northeastern Syria outside of government-controlled areas and are collected at the community level through key informant interviews. In each community, between three and five key informants are selected, including members of civil society groups, local charities, local councils, local relief committees, NGOs, or community leaders. Earthquake shaking is based on the USGS shakemap version 17, released on April 14, 2023.

**Donor funding is insufficient to meet the needs of earthquake-affected communities.** By May 2023, the UN Syria Earthquake Flash Appeal had received a total of US\$397 million in funding, with US\$249 million in paid contributions and US\$148 million in commitments, while the UN Syria Humanitarian Response Plan had received US\$619 million in funding, including US\$259 million in paid contributions and US\$360 million in commitments.<sup>41</sup> Part of the funding received comes from the US\$1 billion in grants pledged to support Syria at the Brussels’ international donors’ conference held on March 20, 2023, while additional grants of US\$6.1 billion were committed during the June 14–15 conference to address Syria’s humanitarian crisis. However, previous pledging rounds in 2021 and 2022 saw only about one-third of grants allocated for programming inside Syria, indicating that not all received funds will be directed towards meeting Syria’s needs.<sup>42</sup> Overall, the relatively large amount of funds raised by May 2023 still falls short of the US\$7.9 billion that the World Bank’s RDNA estimates will be required to meet Syria’s post-quake reconstruction and recovery needs.

**Survey data indicate that improved access to humanitarian aid was short-lived.**<sup>43</sup> Highly affected communities in northwestern Syria were more likely

to receive humanitarian assistance than were less-affected communities in the northeast, both prior to and following the earthquake. Before the earthquake, about 80 percent of highly affected communities were already receiving humanitarian assistance. By March, access to humanitarian aid had increased for the resident population while remaining broadly unchanged for IDPs (Figure 24A and Figure 24B). However, the improvement in aid access for resident populations appears to have been temporary, and in April, access rates fell from their March peak (Figure 24A).

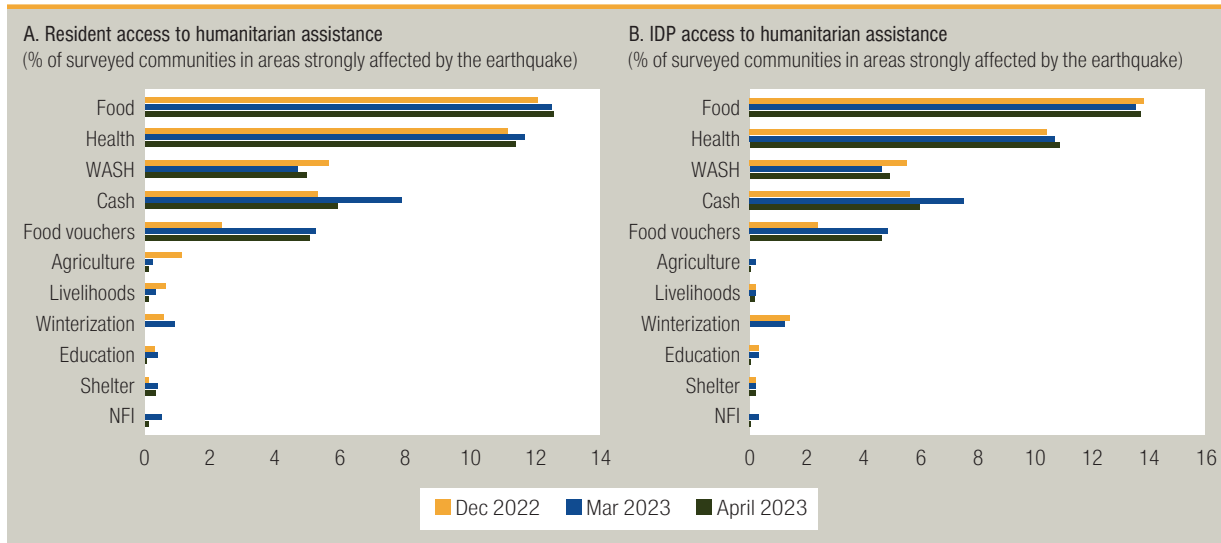
**The availability of cash and food vouchers, both for residents and IDPs, increased immediately after the disaster.** By April 2023, both cash assistance and food vouchers in disaster-affected

<sup>41</sup> Syrian Arab Republic 2023 UN Financial Tracking Service <https://fts.unocha.org/countries/218/summary/2023>.

<sup>42</sup> European Union. 2023. “Supporting Syria and the region: Post-Brussels conference financial tracking – Report Fourteen (May 2023)”. ReliefWeb, June 19, 2023. <https://reliefweb.int/report/syrian-arab-republic/supporting-syria-and-region-post-brussels-conference-financial-tracking-report-report-fourteen-may-2023>.

<sup>43</sup> REACH HSOS. 2023. <https://www.reach-initiative.org/where-we-work/syria/>.

**FIGURE 25** • Following the Earthquake, the Availability of Cash and Food Vouchers Increased Substantially in Disaster-Affected Areas



Source: REACH HSOS; World Bank staff estimates.

Note: Survey data cover parts of northwestern and northeastern Syria outside of government-controlled areas and are collected at the community level through key informant interviews. In each community, between three and five key informants are selected, including members of civil society groups, local charities, local councils, local relief committees, NGOs, or community leaders.

areas remained greater than before the earthquake, resulting in an overall increase in humanitarian assistance for residents (Figure 25A). However, for IDPs,

increased access to cash and food vouchers was offset by decreased direct food aid and water and sanitation services (Figure 25B).



# OUTLOOK AND RISKS

**P**rior to the earthquake, Syria's GDP was projected to contract by 3.2 percent in 2023; following the earthquake, the anticipated contraction was revised to 5.5 percent.

These estimates were made using the World Bank's Macroeconomic and Fiscal Model (MFMod), but they are subject to significant uncertainty.<sup>44</sup> The earthquake has reduced the country's productive capacity, mainly by damaging physical capital and disrupting trade networks.<sup>45</sup> Oil production is predicted to remain low in 2023, with adverse effects on industry, while crop production is expected to rebound from the near-historical lows observed in 2022. In parallel, residential property damage and mounting inflationary pressures caused by the supply-chain shock are expected to depress real incomes and exacerbate the contraction in private consumption. While earthquake-related reconstruction efforts<sup>46</sup> are expected to offset some of these losses, the scale and pace of the reconstruction remain subject to significant uncertainty.

**The earthquake is expected to drive a substantial increase in inflation.** High prices are likely to persist due to disruptions in supply chains and elevated

transportation costs. Based on trends observed in the first four months of 2023, the World Bank forecasts an 84.2 percent year-on-year (yoy) increase in the minimum cost of the basic food basket during 2023. Based on the historical relationship between food inflation and consumer price inflation, the latter is expected to reach

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<sup>44</sup> The RDNA estimates earthquake damages for each sector of the economy. The World Bank's MFMod estimates the reduction in real GDP growth caused by damage to the capital stock, the disruption of trade, and the shock to the labor supply due to earthquake-induced fatalities and injuries.

<sup>45</sup> The baseline scenario assumes that Syria cannot find a close substitute for imports and exports from Türkiye in the near term. Trade costs with Türkiye are estimated to increase by about 4 percent after the earthquake. As Türkiye accounts for about 40 percent of Syria's imports and about 20 percent of its exports, Syria's import and export prices are expected to increase by 1.6 percent and 0.8 percent, respectively, in the aftermath of the earthquake.

<sup>46</sup> The baseline scenario assumes 10 percent of the destroyed capital stock will be rebuilt every year for the next ten years and that 50 percent of reconstruction-related goods will be imported.

**TABLE 4 • Macroeconomic Outlook Indicators**  
(annual % changes unless otherwise indicated)

	2018	2019	2020	2021	2022e	2023f
Real GDP growth, at constant prices	1.4	1.2	-0.2	1.3	-3.5	-5.5
Inflation (Consumer Price Index)	1.0	13.4	114.2	118.8	60.6	62.1
On-budget fiscal balance (% of GDP)	-8.3	-8.1	-8.4	-9.5	-8.4	-8.4

Source: World Bank estimates.  
Notes: e = estimate, f = forecast.

62 percent yoy in 2023, well above the pre-earthquake projection of 44 percent (Table 4).<sup>47</sup>

**The earthquake will place only a small additional strain on public finances in the near term.** The Syrian government’s fiscal deficit in 2023 is projected to increase slightly to 8.4 percent of GDP from the pre-earthquake projection of 8.2 percent of GDP. This projection assumes that external aid will almost entirely finance the increase in expenditures necessary to meet the country’s social and infrastructure needs in the aftermath of the earthquake. Meanwhile, a negligible decline in tax revenues is expected, as only a very limited number of large corporate taxpayers operate in areas that have been severely affected by the earthquake. On the other hand, only a small fraction of the increase in international aid is expected to pass through the Syrian government budget.

**Risks to the growth outlook are significant and tilted to the downside.** The extent and pace of earthquake-related reconstruction remain highly uncertain, as both hinge on inflows of external aid. The economy may contract further if the reconstruction process is slower than expected, and limited public resources, weak private investment, and constraints on humanitarian assistance reaching the affected areas all increase this risk. Syria’s low level of preparedness for the earthquake and limited coping mechanisms are expected to further hinder reconstruction and recovery efforts.

**The likelihood of renewed fighting remains substantial.** The political process remains stalled, and key conflict parties may still attempt to shift the territorial status quo. Furthermore, tensions between Türkiye and the AANES remain high, with Turkish officials reiterating their intentions in 2022 to potentially

launch fresh offensives in AANES-held Manbij and Tel Rifaat.

**Syria’s enduring conflict is likely to exacerbate the earthquake’s long-term socio-economic impact, and vice versa.** People living in FCV-afflicted contexts like Syria’s are among the most vulnerable to natural disasters, and their needs are among the hardest to attend to when disaster strikes.<sup>48</sup> In such contexts, disaster preparedness is normally degraded, and the presence of ongoing conflict and violence poses significant barriers to reaching disaster-affected areas. The analysis presented in this *Monitor* highlights how political and economic fragmentation leads to location-specific divergences in outcomes for aid delivery and recovery efforts. Unlike non-conflict situations, where trade and assistance can be rerouted in the face of access

<sup>47</sup> Consumer price inflation is estimated to average 60.6 percent yoy in 2022 and 62.1 percent yoy in 2023, assuming that: (a) the relationship between the WFP minimum food basket price and food inflation before 2022 remains stable, as does the relationship between food inflation and overall inflation over the same period; and (b) the cost of the WFP’s minimum food basket increased by 82.4 percent yoy in 2022 and is expected to rise by 84.2 percent yoy in 2023, with the 4.8 percent average monthly growth rate observed in the first four months of 2023 extrapolated for the rest of the year.

<sup>48</sup> For the period 2004–2014, some 58 percent of disaster deaths worldwide happened in the 30 most fragile and conflict-affected states, identified based on the Fragile States Index, according to Peters, Katie, and Mirianna Budimir. 2016. “When disasters and conflict collide: Facts and figures”. Overseas Development Institute, May 2016. [https://cdn.odi.org/media/documents/When\\_disasters\\_and\\_conflicts\\_collide\\_facts\\_and\\_figures.pdf](https://cdn.odi.org/media/documents/When_disasters_and_conflicts_collide_facts_and_figures.pdf).

challenges caused by natural disasters, many FCV contexts, like Syria's, lack alternative routes due to ongoing conflict dynamics.<sup>49</sup> Furthermore, both conflicts and earthquakes destroy fixed capital and degrade human capital through disruptions in education services and psychological trauma. This produces large, sustained negative effects on productivity in the longer run. Continued monitoring of key economic indicators may provide insight into how conflict and natural disasters interact to influence economic outcomes.

**While Syria's circumstances remain dire, there are upside risks to the outlook.** Economic conditions may improve in government-held areas if the gradual normalization of Syria's diplomatic and commercial relations with its regional neighbors continues. Syria was readmitted to the League of Arab States (LAS) in May 2023 as part of a Jordan-led

initiative that would increase aid delivery from LAS countries in exchange for the Syrian government's cooperation in facilitating the return of refugees and combating the regional drug trade (Box 3). Continued efforts at normalization could increase trade, investment, and foreign assistance in government-controlled areas. However, many nations remain opposed to normalization and especially to the resumption of trade with the Syrian government, limiting the upside potential of normalization. Moreover, any gains would be limited to government-controlled areas.

<sup>49</sup> Opposition-controlled areas in northwest Syria were not initially able to replace cross-border imports or aid from Turkey because the main connecting route was temporarily blocked, and the only other road route runs through frontlines connecting to the government-controlled areas.

### BOX 3: THE REGIONAL NORMALIZATION OF RELATIONS WITH SYRIA: IMPLICATIONS OF THE JORDANIAN INITIATIVE FOR THE CONFLICT AND THE ECONOMY

**Efforts to normalize relations between Syria and its Arab neighbors gained traction in May 2023 with Syria's readmission into the LAS.<sup>a</sup>**

In 2011, amid escalating state-led violence in Syria, most Arab states severed relations with the Syrian government. The LAS suspended Syria's membership in November 2011 and imposed sanctions on Damascus. Nevertheless, in recent years, regional governments have taken tentative steps towards normalizing relations, as exemplified by the reopening of the United Arab Emirates (UAE) embassy in Damascus in 2018 and the gradual restoration of diplomatic ties by several other Arab states.

**The earthquake has accelerated the normalization process, bringing forth upside prospects for the economy in government-controlled areas.**

Prior to the earthquake, Saudi Arabia's support for rapprochement and a Jordan-led plan for Syria's regional reintegration had already created momentum for normalization. Following the earthquake, diplomatic missions from Egypt, Jordan, and Tunisia visited Damascus for the first time since 2011, accompanied by aid, response personnel, and delegations from several Arab states to government-controlled areas. The process was bolstered by Chinese and regional efforts to mend ties between Saudi Arabia and Iran, as well as broader regional efforts towards de-escalation and reconciliation, which culminated in March 2023.

**Arab states have significantly increased their funding for humanitarian efforts in Syria since February.** Aid from Arab states has increased both in nominal terms and as a percentage of total aid. On a cash basis, Arab states provided US\$328.6 million in aid to Syria in the first five months of 2023, representing about 30 percent of total aid received during the period (Figure 26).

**Several factors are driving the normalization of relations between Syria and the Arab states.** Syria's readmission to the LAS, as part of a Jordanian initiative, sheds light on regional priorities and addresses key concerns regarding Syria. The governments of Jordan, which drafted the roadmap for normalization, and the other states backing the initiative hope to encourage the Assad regime to facilitate the return of Syrian refugees from their countries, counter the ongoing presence of ISIS within Syrian territory, and combat the growing trade in narcotics and illegal pharmaceuticals originating in Syria, particularly the widely known amphetamine Captagon.<sup>b</sup>

**While the restoration of normal diplomatic and economic ties with Syria's regional neighbors would have clear benefits for areas under government control, the future of the process remains uncertain.** An influx of funding for humanitarian relief and reconstruction would increase consumption and spur economic activity in parts of the country. But the scale of such measures will likely be limited. Additionally, the issue of refugee return and resettlement remains highly contentious, with complex political and social implications.

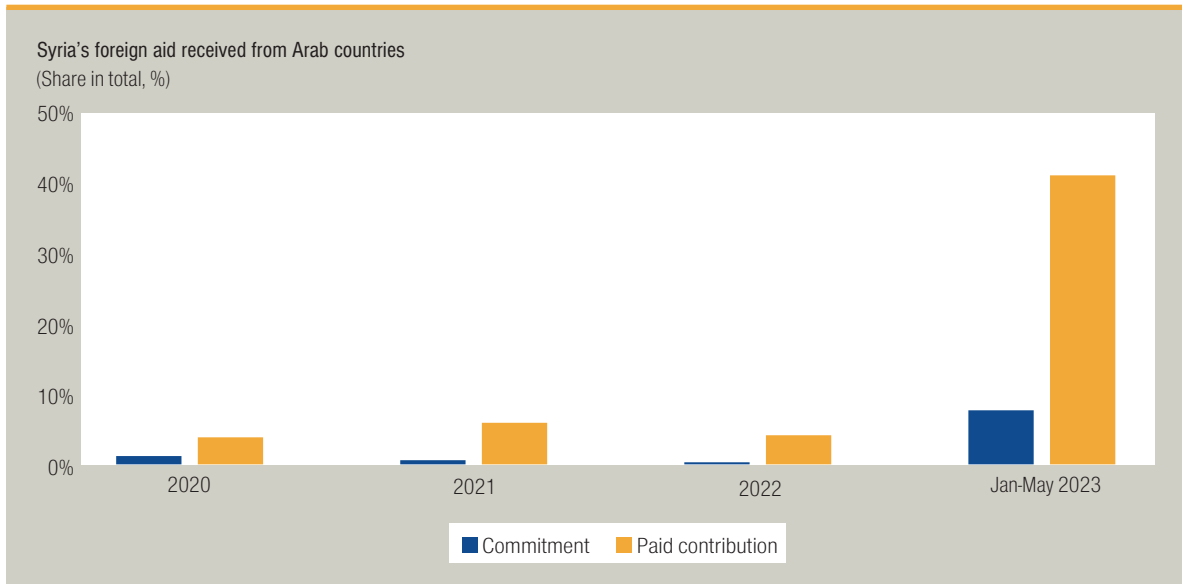
<sup>a</sup> Resolution 8914 on Syria, LAS, May 7, 2023.

<sup>b</sup> Hamidi, Ibrahim. 2023. "Classified document reveals details of bringing Syria back to Arab League." Al Majalla, May 6, 2023. <https://en.majalla.com/node/290821/documents-memoirs/classified-document-reveals-details-bringing-syria-back-arab-league>.

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BOX 3: THE REGIONAL NORMALIZATION OF RELATIONS WITH SYRIA: IMPLICATIONS OF THE JORDANIAN INITIATIVE FOR THE CONFLICT AND THE ECONOMY *(continued)*


FIGURE 26 • Following the Earthquake, Arab States Increased Aid to Syria



Source: Syrian Arab Republic Financial Tracking Service of OCHA; World Bank staff estimates.

Note: "Arab countries" include Algeria, Bahrain, Comoros, Djibouti, Egypt, Iraq, Jordan, Kuwait, Lebanon, Libya, Morocco, Mauritania, Oman, Palestine, Qatar, Saudi Arabia, Somalia, Sudan, Tunisia, the UAE, and Yemen.





# SPECIAL FOCUS: SYRIA EARTHQUAKE 2023 RAPID DAMAGE AND NEEDS ASSESSMENT

*According to the World Bank's Syria Earthquake 2023 RDNA, the disaster caused US\$3.7 billion in physical damage across the six most-affected governorates, with additional losses of US\$1.5 billion in 2023 alone. The total cost of US\$5.2 billion is equal to about 10 percent of Syria's GDP, underscoring the magnitude of the destruction. Reconstruction and recovery needs are estimated at US\$7.9 billion, consisting of immediate disaster-response needs of US\$3.7 billion in the first 12 months and additional near-term recovery needs of US\$4.2 billion over the next two years.*

**F**ollowing the devastating earthquake in February, the World Bank launched the Syria Earthquake 2023 RDNA to assess the disaster's impact on physical assets and service delivery and its implications for household wellbeing and the country's economic outlook. The RDNA covers six governorates with roughly 10 million inhabitants and includes an in-depth analysis of nine cities (Figure 27).<sup>50</sup> It provides preliminary estimates of the cost to rebuild infrastructure and restore service delivery, and it sets out general principles for a robust and sustainable recovery in the near term.

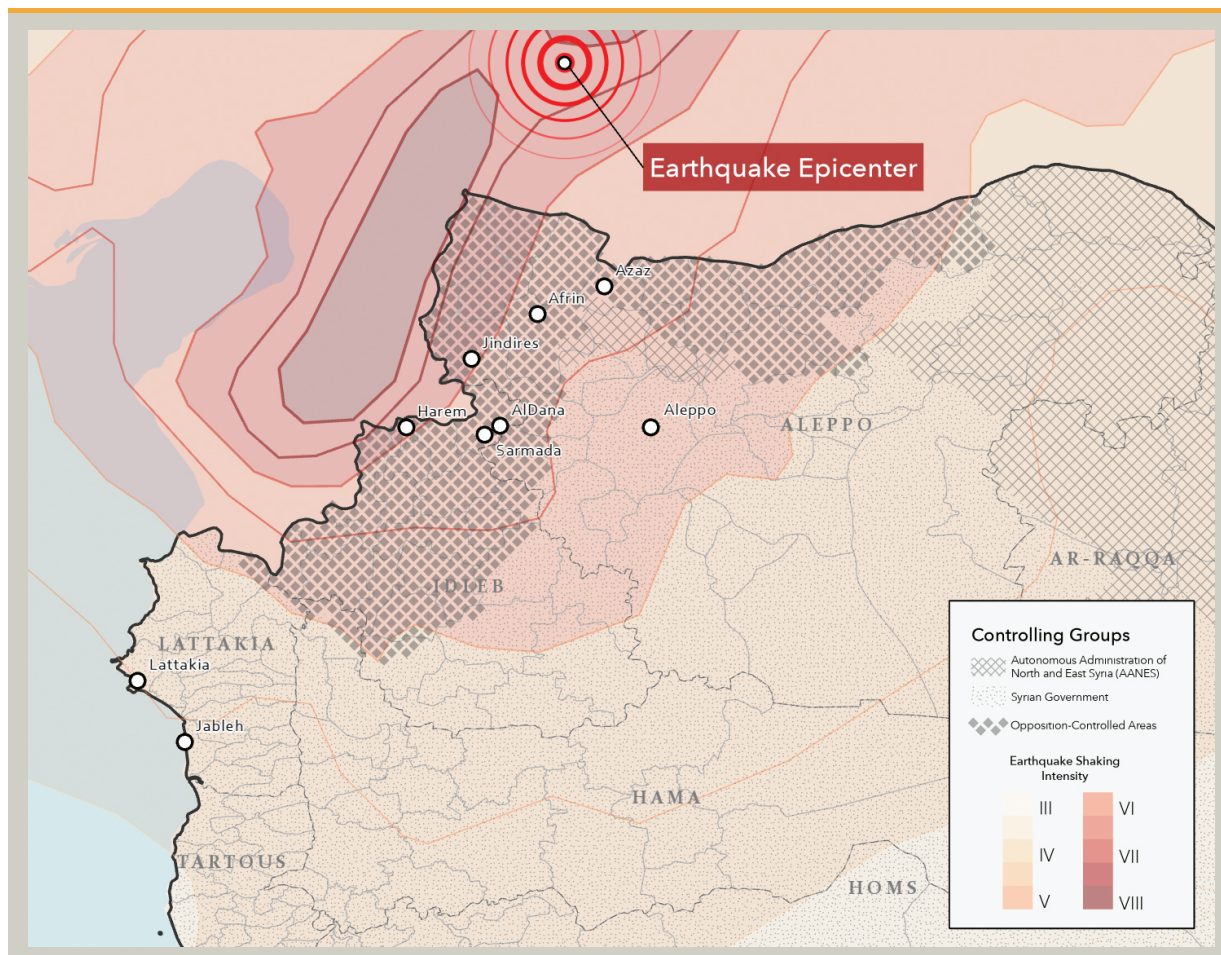
The Syria RDNA relies on remote data sources, which include satellite imagery, social media analytics, mobile-phone location data, nighttime illumination data, and publicly available

information to compensate for gaps in traditional information sources. The RDNA follows a globally established and recognized methodology for estimating damages, losses, and needs arising from the earthquake. Developed by the World Bank Group, the European Union, and the UN, this methodology has been applied in numerous post-disaster and conflict contexts to inform recovery and reconstruction planning. While the RDNA focuses on the damage inflicted by the earthquake, the pre-earthquake baseline incorporates the compounding effect of the preexisting devastation

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<sup>50</sup> The six governorates covered by the RDNA are Aleppo, Hama, Idleb, Latakia, Raqqah, and Tartous. The nine cities assessed are Aleppo, Harem, Jableh, Afrin, Ad-Dana, Jandairis, Azaz, Sarmada, and Latakia.

FIGURE 27 • The Earthquake Was Most Severe in Opposition-Controlled Areas



Source: Syria Earthquake 2023 RDNA.

caused by the conflict. Before preparing the RDNA, the World Bank Group conducted six assessments<sup>51</sup> to obtain information on how the ongoing conflict has affected households, physical infrastructure, and the quality of service delivery in Syria.<sup>52</sup>

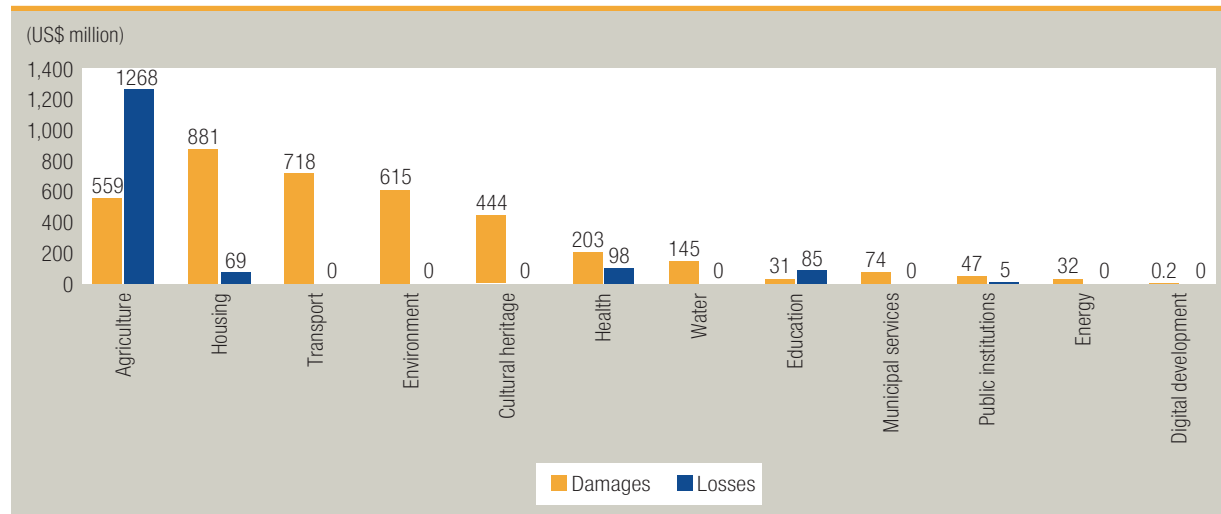
**According to the RDNA, the physical damages and losses caused by the earthquake will reach US\$5.2 billion in 2023, while reconstruction and recovery needs will total US\$7.9 billion over the next three years.** The housing sector suffered 24 percent of the direct damage from the earthquake, the largest share of any sector, followed by transportation, the environment (including the cost of clearing rubble), and agriculture (Figure 28). Due to the disruption of production cycles and value chains, the agricultural sector incurred losses estimated at US\$1.3 billion, or 83 percent of total losses.

**The governorate of Aleppo suffered the largest share of the total damage, followed by Idlib.**

<sup>51</sup> World Bank. 2022. *Syria – Joint Damage Assessment of Selected Cities*. Washington, D.C: World Bank Group. <http://documents.worldbank.org/curated/en/099173502272397116/P172171027e9070310b52e09ce3ad7393cc>.

<sup>52</sup> While all efforts were made to ensure its accuracy and comprehensiveness, the Syria RDNA provides only a broad overview of the earthquake’s impact. The use of remote-based data and publicly available information limits the scope and depth of the assessment in certain sectors. Furthermore, while RDNAs are typically carried out with a government counterpart, the Syria RDNA was conducted solely by the World Bank without any collaboration with the Syrian government. The assessment methodology was designed to mitigate these challenges to the extent possible.

**FIGURE 28** • The Housing Sector Experienced the Most Direct Damage, while Agriculture Incurred the Greatest Losses (US\$ million)



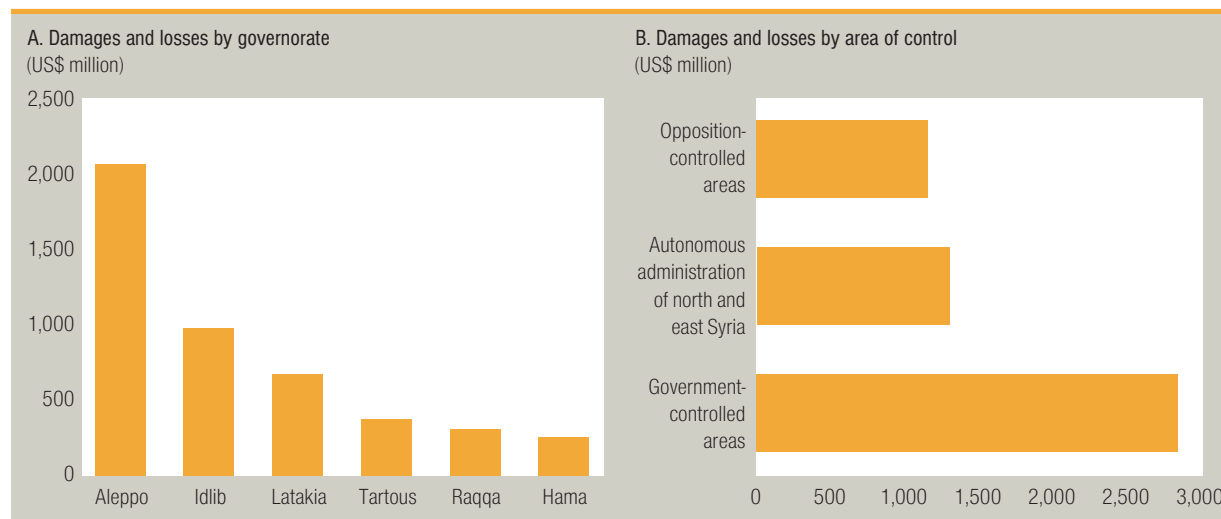
Source: Syria Earthquake 2023 RDNA

Note: The Social Protection and Livelihoods and Social Sustainability and Inclusion sectors do not include damages and losses.

The Aleppo governorate, which includes the cities of Aleppo, Azaz, and Afrin, incurred 44 percent of the total earthquake damage (Figure 29A). Idleb governorate, which includes the cities of Sarmada, Harem, and Ad-Dana, incurred 21 percent of the total damage. Damage in Aleppo was concentrated in the housing, agriculture, environment, and cultural-heritage sectors. In Idleb, damage was most significant in agriculture, followed by housing, transportation, the environment, and health.

**Earthquake damages and losses were spread across multiple zones of control.** The aggregate impact was largest in government-controlled areas, where total damage and losses are estimated at US\$2.8 billion. The AANES-controlled areas suffered significant losses, amounting to US\$1.3 billion, while opposition-controlled regions, including territory held by the SIG, SSG, and other nonstate groups, incurred damages and losses totaling US\$1.2 billion (Figure 29B).

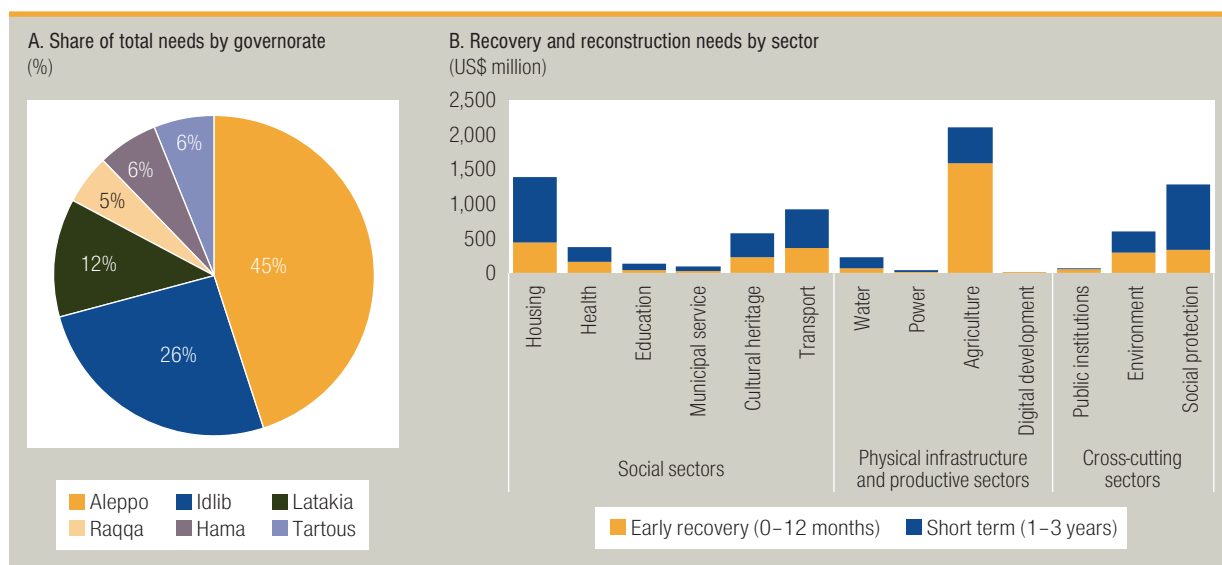
**FIGURE 29** • Earthquake Damage and Losses Were Concentrated in the Governorates of Aleppo and Idlib and Spread Across Multiple Zones of Control



Source: Syria Earthquake 2023 RDNA.

Note: "Opposition-controlled areas" includes territory held by the SIG, SSG, and other nonstate groups.

**FIGURE 30** • Recovery and Reconstruction Needs are Concentrated in the Governorates of Aleppo and Idlib and in the Agriculture and Housing Sectors



Source: Syria Earthquake 2023 RDNA

**Reconstruction and recovery needs for the six assessed governorates are estimated at US\$7.9 billion, including US\$3.7 billion over the next 12 months and US\$4.2 billion over the following two years (Figure 30).** The sector with the greatest needs is agriculture (26.8 percent of the total), followed by housing (17.8 percent), social protection (16.3 percent), and transportation (11.8 percent). In the first year

following the earthquake, response efforts should prioritize the most urgent needs of affected communities, including emergency shelter, food, water, and health services. In parallel and over the two following years, efforts should gradually shift toward rebuilding damaged infrastructure, restoring a wider range of services, helping affected communities rebuild their livelihoods and promoting sustainable development.



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