

THE SYRIAN CONFLICT PHYSICAL DAMAGE AND RECONSTRUCTION ASSESSMENT (2011 – 2024)

August 2025



GFDRR
Global Facility for Disaster Reduction and Recovery



Administered by
THE WORLD BANK
IBRD • IDA | WORLD BANK GROUP



Public Disclosure Authorized

Public Disclosure Authorized

Public Disclosure Authorized

Public Disclosure Authorized



DISCLAIMER

© 2025 International Bank for Reconstruction and Development / The World Bank
1818 H Street NW, Washington, DC 20433
Telephone: +1-202-473-1000; Internet: www.worldbank.org

Some rights reserved.

This work is a product of the staff of The World Bank and the Global Facility for Disaster Reduction and Recovery (GFDRR). The findings, interpretations, and conclusions expressed in this work do not necessarily reflect the views of The World Bank, its Board of Executive Directors, or the governments they represent. The World Bank does not guarantee the accuracy, completeness, or currency of the data included in this work and does not assume responsibility for any errors, omissions, or discrepancies in the information, or liability with respect to the use of or failure to use the information, methods, processes, or conclusions set forth. The boundaries, colors, denominations, and other information shown on any map in this work do not imply any judgment on the part of The World Bank concerning the legal status of any territory or the endorsement or acceptance of such boundaries.

Nothing herein shall constitute or be construed or considered to be a limitation upon or waiver of the privileges and immunities of The World Bank, all of which are specifically reserved.

Rights and permissions. This work is subject to copyright. Because The World Bank encourages dissemination of its knowledge, this work may be reproduced, in whole or in part, for non-commercial purposes as long as full attribution to this work is given.

Attribution. Please cite this work as follows: World Bank. (2025) *The Syrian Conflict: Physical Damage and Reconstruction Assessment Report*. Washington, D.C.: World Bank Group. Credits: The World Bank Group.

Translations. If you create a translation of this work, please add the following disclaimer along with the attribution: This translation was not created by The World Bank and should not be considered an official World Bank translation. The World Bank shall not be liable for any content or error in this translation.

Adaptations. If you create an adaptation of this work, please add the following disclaimer along with the attribution: This is an adaptation of an original work by The World Bank. Views and opinions expressed in the adaptation are the sole responsibility of the author or authors of the adaptation and are not endorsed by The World Bank.

Third-party content. The World Bank does not necessarily own each component of the content contained within the work. The World Bank therefore does not warrant that the use of any third-party-owned individual component or part contained in the work will not infringe on the rights of those third parties. The risk of claims resulting from such infringements rests solely with you. If you wish to reuse a component of the work, it is your responsibility to determine whether permission is needed for that reuse and to obtain permission from the copyright owner. Examples of components can include, but are not limited to, tables, figures, or images.

All queries on rights and licenses, including subsidiary rights, should be addressed to World Bank Publications, The World Bank Group, 1818 H Street NW, Washington, DC 20433, USA; e-mail: pubrights@worldbank.org

Editing: Andrea Christine Scheibler
Translation: Viviane Akiki
Design: Sarah Alameddine
Photos: Omar Sanadiki / World Bank.

THE SYRIAN CONFLICT
**PHYSICAL DAMAGE AND
RECONSTRUCTION ASSESSMENT
(2011 – 2024)**

August 2025

Table of Contents

EXECUTIVE SUMMARY	6
المخلص التنفيذي	11
DETAILED ASSESSMENT FINDINGS	14
Note on Methodology	15
Gross Capital Stock Value Estimation.....	16
Direct Physical Damage Estimation	20
Reconstruction Cost Estimation	24
DISCUSSION OF RESULTS AND LIMITATIONS	27
REFERENCES	30
GLOSSARY	35
ANNEXES	37
Annex 1: Methodology	38
Annex 2: Review of Previous Assessments	48
Annex 3: Case Studies to Determine Cost Factor	52
Annex 4: Maps of Distribution of Conflict	54
Annex 5: Key Damage Estimate Maps by Sector	55
Annex 6: Key Reconstruction Estimates Maps by Sector.....	58
Annex 7: Datasets Used	60

LIST OF TABLES

Table 1. Estimates of Physical Damage by Governorate as of December 31, 2024 (US\$ million)	8
Table 2. Best Estimate for Reconstruction Costs by Governorate as of December 31, 2024 (US\$ million)	9
Table 3. Gross Capital Stock Estimated by the Assessment as of December 31, 2024 (US\$ million).....	16
Table 4. Comparison of Present Exposure Model with Other Exposure Models (US\$ billion)	19
Table 5. Best Estimate of Direct Damage up to December 31, 2024 (US\$ million).....	20
Table 6. Best Estimate of Direct Damage (% of total exposed value of buildings and infrastructure)	23
Table 7. Estimated Reconstruction Costs as of December 31, 2024 (US\$ million).....	25
Table 8. Cost Multipliers Used for Different Asset Categories.	45
Table 9. Approximate Share of Damaged Asset Value Already Reconstructed by December 31, 2024.....	46
Table 10. Comparative Overview of Reconstruction Cost Estimates (original and inflation-adjusted to December 2024 values).....	49
Table 11. Comparative Overview of Reconstruction Cost Estimates for Cities in Syria	50

LIST OF FIGURES

Figure 1. Residential and Non-Residential Exposure (left) and across the Number of Floors Classes (right) (US\$ billion)	17
Figure 2. Residential (left) and Non-Residential (right) Replacement Value by Main Structural Types (US\$ billion)	17
Figure 3. Residential (incl. contents), Non-residential (incl. contents), and Infrastructure Exposure by Governorate in Syria (US\$ billion)	18
Figure 4. Map of Estimated Total Physical Damage at Governorate Level	21
Figure 5. Map of Estimated Total Physical Damage as % of Total Exposed Value (replacement capital stock) at Governorate Level	22
Figure 6. Map of Estimated Total Reconstruction Cost at Governorate Level	26
Figure 7. Baseline Exposure Methodology Flowchart Used to Create the Exposure for Damage Analysis	38
Figure 8. Residential and Non-Residential Floor Areas by Number of Floors Class (millions of m ²)	40
Figure 9. Damage Estimation Methodology Flowchart	42
Figure 10. Comparison of Best Estimate for Physical Damage and Estimates from Previous Studies	48
Figure 11. Maps of Conflict Distribution Data	54
Figure 12. Maps of Estimated Residential Sector Physical Damage at Governorate Level (a) in US\$ billion and (b) as % of Total Exposed Value (replacement capital stock for residential sector).....	55
Figure 13. Maps of Estimated Non-Residential Sector Physical Damage at Governorate Level (a) in US\$ billion and (b) as % of Total Exposed Value (replacement capital stock for non-residential sector).....	56
Figure 14. Maps of Estimated Infrastructure Sector Physical Damage at Governorate Level (a) in US\$ billion and (b) as % of Total Exposed Value (replacement capital stock for infrastructure sector).....	57
Figure 15. Map of Estimated Residential Reconstruction Cost at Governorate Level	58
Figure 16. Map of Estimated Non-Residential Reconstruction Cost at Governorate Level	58
Figure 17. Map of Estimated Infrastructure Reconstruction Cost at Governorate Level	59

Acknowledgments

This report was prepared by a team led by Rashmin Gunasekera (Senior Disaster Risk Management Specialist), Karima Ben Bih (Senior Disaster Risk Management Specialist), and Philipp Petermann (Senior Disaster Risk Management Specialist). The team comprised of James Daniell (Consultant), Harriette Stone (Consultant), Bijan Khazai (Consultant), Antonios Pomonis (Consultant), Johannes Brand (Consultant), Guillermo Toyos (Consultant), Kerri Cox (Consultant), Lara Loussert (Junior Professional Associate), Ban Edilbi (Urban Specialist), Roberth Romero (Temporary), and Randy Rizk (Program Assistant).

The team is grateful for the strategic guidance of Jean-Christophe Carret (Division Director for the Middle East Department (Iran, Iraq, Jordan, Lebanon, and Syria)) and Catherine Signe Tovey (Practice Manager, Urban, Resilience and Land, Middle East, North Africa, Afghanistan and Pakistan).

The team received valuable inputs and feedback from Zuzana Stanton-Geddes (Senior Disaster Risk Management Specialist), Ronette Gwendoline Jordan (Senior Disaster Risk Management Specialist), Norbert Matthias Fiess (Lead Country Economist), Luan Zho (Senior Economist), Zeina El Khalil (Senior External Affairs Officer), and John Anderson (Senior Operations Officer).

Finally, the team is thankful for the financial and technical support from the World Bank's Global Facility for Disaster Reduction and Recovery (GFDRR).

This analysis is as of December 31, 2024, using the following exchange rate: 14,420 SYP/US\$.

Abbreviations and Acronyms

ACLED	Armed Conflict Location and Event Data
CPI	Consumer Price Index
EU	European Union
GCS	Gross Capital Stock
GDP	Gross Domestic Product
GEM	Global Earthquake Model
GFDRR	Global Facility for Disaster Reduction and Recovery
GIRI	Global Infrastructure Risk Model and Index
GHE	General Housing Establishment
GRADE	Global Rapid Post-disaster Damage Estimation
ICT	Information and Communication Technology
IDP	Internally Displaced Persons
IMF	International Monetary Fund
IOM	International Organization for Migration
ISIS	Islamic State of Iraq and Syria
m/m²	meter/square meter
NFEV	National Fund for Earthquake Victims
NGO	Non-governmental Organization
NRFA	Non-Residential Floor Area
OSM	OpenStreetMap
PDNA	Post-Disaster Needs Assessment
RFA	Residential Floor Area
RDNA	Rapid Damage and Needs Assessment
SCBS	Syrian Central Bureau of Statistics
SCPR	Syrian Center for Policy Research
SYP	Syrian Pound
UCC	Unit Cost of Construction
UN	United Nations
UNDP	United Nations Development Programme
UNESCWA	United Nations Economic and Social Commission for Western Asia
UN-Habitat	United Nations Human Settlements Programme
UNOCHA	United Nations Office for the Coordination of Humanitarian Affairs
UNOSAT	United Nations Satellite Centre
US\$	United States Dollar
WASH	Water, Sanitation, and Hygiene
WSF®	World Settlement Footprint



EXECUTIVE SUMMARY

Purpose and Scope

This report presents the results of a rapid damage and reconstruction assessment, conducted by the World Bank, related to the impacts of the 2011–24 conflict in Syria. This assessment is intended to provide an estimate of the overall scale of damage and reconstruction cost due to the conflict and to inform discussions on recovery and reconstruction plans in Syria. The report presents findings across three main asset categories:

- **Infrastructure:** Refers to the fundamental facilities and systems serving a country, city, or other areas, including roads, railways, power supply networks, ports and marine facilities, water supply networks, and telecommunications and information and communication technology (ICT) sectors.
- **Residential buildings:** Includes all types of housing structures, including informal housing.
- **Non-residential buildings:** Encompasses commercial and public buildings (education, health, and government buildings) that are not used for housing.

This is a rapid assessment that is not intended to cover the full impact of the conflict in Syria. Over 13 years of conflict in Syria has left an indelible mark on the country, resulting in widespread devastation and a humanitarian crisis of unprecedented scale. The conflict has reportedly claimed the lives of nearly 618,000 individuals and left thousands unaccounted for (UNDP, 2025c). It has also resulted in one of the largest displacement crises in modern history, with more than 14 million Syrians having fled their homes (UNHCR, 2025). Over 7.4 million remain internally displaced within Syria, while more than 6 million Syrian refugees live in neighboring countries such as Türkiye, Lebanon, Jordan, and Iraq, or have resettled abroad (UNHCR, 2025). This assessment does not cover the full impact of the conflict on Syria's people, nor does it capture impacts in terms of economic losses, damage to cultural heritage, or service delivery restoration needs. The assessment focuses on impacts to Syria's pre-conflict gross capital stock (GCS). It was conducted with predominantly remote data, with uncertainties in the available datasets. It does not provide detailed disaggregation by sectors or individual asset types and should be viewed as an estimate of the magnitude of damage and reconstruction cost, which will need to be supplemented by more in-depth damage and needs assessments, including at the sectoral level.

Key Definitions:

- **Gross Capital Stock (GCS):** The GCS is the value of all fixed assets in use prior to the conflict, valued at the prices of new capital goods of the same type, regardless of their age or condition, without deductions for depreciation or obsolescence.
- **Physical Damage:** Physical damage refers to total or partial destruction of selected physical assets (residential, non-residential, and infrastructure) affected by the Syrian conflict between 2011 and 2024.
- **Reconstruction Costs:** This refers to the financial resources required to rebuild or repair physical assets to meet current standards, incorporating improvements in quality, safety, and resilience beyond their pre-damage state (incorporating "build back better" principles and additional factors such as debris removal, demolition, site preparation, and regulatory compliance) and taking into account inflation and security costs. It does not cover the service restoration needs for sectoral functioning.

Key Findings

The conflict in Syria is estimated to have damaged one-third of the country's GCS, causing total physical damage to infrastructure and buildings of US\$108 billion.¹ The governorates of Aleppo, Rif Dimashq, and Homs are the hardest hit regions, with estimated damage of US\$31 billion, US\$22 billion, and US\$11 billion, respectively. By contrast, several regions largely escaped extensive destruction, with the coastal and southern governorates of Tartous, As-Sweida, and Quneitra experiencing relatively limited physical damage (Table 1). Infrastructure is the most impacted asset category, accounting for approximately 48 percent of total damage. The high damage costs reflect the devastating toll that over 13 years of conflict have taken on Syria, especially on its urban centers where most of the conflict occurred.

Table 1. Estimates of Physical Damage by Governorate as of December 31, 2024 (US\$ million)

Governorates	Residential Damage (US\$ mn)	Non-Residential Damage (US\$ mn)	Infrastructure Damage (US\$ mn)	Total Damage (US\$ mn)
Aleppo	11,317	7,121	12,423	30,862
Rif Dimashq	6,785	5,983	9,529	22,296
Homs	3,028	2,403	5,400	10,831
Hama	2,086	1,175	4,208	7,470
Ar-Raqqa	1,084	707	5,050	6,840
Idleb	1,960	1,730	2,269	5,959
Deir-ez-Zor	1,291	887	3,579	5,757
Al-Hasakeh	714	862	4,002	5,578
Damascus city	2,300	1,336	1,890	5,526
Dar'a	1,480	737	2,087	4,304
Lattakia	390	330	709	1,429
Quneitra	84	22	393	499
As-Sweida	106	97	260	464
Tartous	88	53	241	383
Total	32,714	23,443	52,040	108,197

Source: Assessment team.

¹ Figures in the text are rounded to the nearest whole number; corresponding tables present values with decimal precision. Minor discrepancies may occur due to rounding.

Reconstruction costs are projected to range between US\$140 billion and US\$345 billion, with a conservative best estimate of US\$216 billion. Reconstruction costs include US\$75 billion for residential buildings, US\$59 billion for non-residential structures, and US\$82 billion for infrastructure (Table 2). These estimates focus only on the reconstruction cost of the physical assets and do not cover the service restoration needs for sectoral functioning. Aleppo and Rif Dimashq require the most significant investments for reconstruction. Inflation, material scarcity, build back better approaches, security costs, and increased labor costs contribute to elevated unit prices, estimated at 2.1–2.3 times pre-conflict levels for buildings and 2.1–3.3 for infrastructure, which are included in the reconstruction cost estimates. This results in reconstruction estimates that are nearly double the assessed physical damage of US\$108 billion.

It is important to emphasize that the results of this assessment are subject to significant uncertainty. The security situation remains fluid as of August 2025, and this volatility could substantially influence provincial reconstruction costs, including potentially increasing required expenditures in the event of further security or political developments.

Table 2. Best Estimate for Reconstruction Costs by Governorate as of December 31, 2024 (US\$ million)

Governorates	Residential Reconstruction Cost (US\$ mn)	Non-Residential Reconstruction Cost (US\$ mn)	Infrastructure Reconstruction Cost (US\$ mn)	Total Reconstruction Cost (US\$ mn)
Aleppo	26,281	17,964	20,046	64,291
Rif Dimashq	15,897	15,364	15,117	46,378
Homs	7,714	7,088	9,499	24,301
Hama	4,893	2,991	6,962	14,846
Idleb	5,167	4,972	3,354	13,493
Deir-ez-Zor	3,044	2,544	6,808	12,395
Al-Hasakeh	1,242	2,252	6,718	10,212
Ar-Raqqa	1,706	1,373	6,012	9,091
Damascus city	4,549	2,401	2,069	9,018
Dar'a	3,299	1,883	3,331	8,512
Lattakia	371	313	692	1,376
Quneitra	171	35	698	905
As-Sweida	101	112	248	462
Tartous	64	38	175	278
Total	74,498	59,331	81,728	215,557

Source: Assessment team.

The damage and reconstruction cost estimates are presented in the context of an already dire macroeconomic situation. Over the past decade, the conflict has had a severe impact on the Syrian economy, with real gross domestic product (GDP) declining by approximately 53 percent between 2010 and 2022 (World Bank, 2025b). In nominal terms, GDP (current US\$) contracted from US\$67.5 billion in 2011 to an estimated US\$21.4 billion in 2024. The estimates of reconstruction costs are about 10 times this nominal 2024 GDP, reflecting both the extensive damage caused by the conflict as well as the years of massive economic contraction. The disruptions due to the conflict and to economic sanctions have also led to a reliance on imports, depletion of foreign reserves, and heavily constrained fiscal resources, with capital expenditures in 2024 having fallen to 11 percent of their 2010 level (World Bank, 2025b). These conditions further constrain Syria's macroeconomic and fiscal capacity to be able to respond to the magnitude of reconstruction costs.

Further analytics could help deepen understanding of Syria's recovery needs. Potential areas for additional assessment include comprehensive damage, loss, and needs evaluations across key sectors – including cultural heritage – as well as more detailed, local-level studies in highly affected areas. Deeper sector-specific analyses may also become feasible as data availability improves.

The following sections of this report offer more details on the assessment findings and methodology:

- Section 2 provides detailed results for infrastructure, residential buildings, and non-residential buildings and briefly describes the methodology.
- Section 3 discusses the practical applications of the assessment findings and addresses the limitations of the analysis.
- Annexes include a comparative analysis with results from other existing assessments on damage, loss, and reconstruction costs for Syria; a detailed methodology of the assessment; and a full list of data sources to support the report's findings.



الملخص التنفيذي

الهدف والنطاق

يعرض هذا التقرير نتائج التقييم السريع للأضرار وإعادة الإعمار الذي أجراه البنك الدولي، والمتعلق بتداعيات النزاع الذي شهدته سوريا خلال الفترة الممتدة بين عامي 2011 و2024. يهدف هذا التقييم إلى تقدير مجمل حجم الأضرار وتكاليف إعادة الإعمار الناتجة عن النزاع، والمساهمة في إثراء النقاشات المتعلقة بخطط التعافي وإعادة الإعمار في سوريا. يعرض التقرير النتائج عبر ثلاث فئات رئيسية من الأصول:

- **البنية التحتية:** تشمل المرافق والأنظمة الأساسية التي تخدم الدولة أو المدن أو غيرها من المناطق، بما فيها الطرق والسكك الحديدية وشبكات إمداد الطاقة والموانئ والمرافق البحرية وشبكات إمداد المياه وقطاعات الاتصالات وتكنولوجيا المعلومات والاتصالات.
- **المباني السكنية:** تشمل جميع أنواع المساكن، ومن ضمنها المساكن غير النظامية.
- **المباني غير السكنية:** تشمل المباني التجارية والعامة (التعليمية والصحية والحكومية) التي لا تُستخدم لغرض السكن.

هذا تقييم سريع، لا يهدف إلى تغطية الأثر الكامل للنزاع في سوريا. لقد ترك النزاع الذي امتد لأكثر من 13 عاماً بصمة عميقة على البلاد، وأدى إلى دمار واسع النطاق وأزمة إنسانية غير مسبوقة. وتشير التقديرات إلى أنّ النزاع أودى بحياة نحو 618 ألف شخص، وخلف آلاف المفقودين (برنامج الأمم المتحدة الإنمائي، 2025). كما أدى إلى واحدة من أكبر أزمات النزوح في التاريخ الحديث، إذ اضطر أكثر من 14 مليون سوري إلى ترك منازلهم (المفوضية السامية للأمم المتحدة لشؤون اللاجئين، 2025). ولا يزال أكثر من 7.4 ملايين شخص نازحين داخلياً في سوريا، في حين يعيش أكثر من 6 ملايين لاجئاً سوري في دول الجوار مثل تركيا ولبنان والأردن والعراق، أو أعيد توطينهم في الخارج (المفوضية السامية للأمم المتحدة لشؤون اللاجئين، 2025). لا يغطي هذا التقييم الأثر الكامل للنزاع على الشعب السوري، ولا يشمل الخسائر الاقتصادية أو الأضرار التي لحقت بالتراث الثقافي أو احتياجات إعادة تأهيل الخدمات. ويركز التقييم على الأضرار التي لحقت برصيد رأس المال الإجمالي قبل النزاع في سوريا. وقد أنجز بالاعتماد في الغالب على بيانات تم جمعها عن بُعد، مع وجود قدر من عدم اليقين في مجموعات البيانات المتاحة. كما أنه لا يقدم تفصيلاً دقيقاً حسب القطاعات أو أنواع الأصول الفردية، وينبغي النظر إليه كإطار تقديري لحجم الأضرار وتكاليف إعادة الإعمار، على أن تُستكمل نتائجه بتقييمات أعمق وأكثر تفصيلاً للأضرار والاحتياجات، بما في ذلك على المستوى القطاعي.

التعريفات الأساسية:

- **رصيد رأس المال الإجمالي (Gross Capital Stock):** هو قيمة جميع الأصول الثابتة المستخدمة قبل النزاع، مقدّرة بأسعار السلع الرأسمالية الجديدة من النوع نفسه، بغض النظر عن عمرها أو حالتها، ودون احتساب أي خصم مقابل الاستهلاك أو التقادم.
- **الأضرار المادية: تشير** إلى التدمير الكلي أو الجزئي للأصول المادية المحددة (السكنية، وغير السكنية، والبنية التحتية) التي تأثرت بالنزاع في سوريا خلال الفترة الممتدة بين عامي 2011 و2024.
- **تكاليف إعادة الإعمار:** تشير إلى الموارد المالية المطلوبة لإعادة بناء أو إصلاح الأصول المادية لتلبي المعايير الحالية، مع إدخال تحسينات في الجودة والسلامة والقدرة على الصمود تتجاوز حالتها قبل الضرر (وفق مبادئ «إعادة البناء بشكل أفضل»)، وإضافة عناصر مثل إزالة الردم، والهدم، وتجهيز الموقع، والامتثال للأنظمة، مع أخذ التضخم وتكاليف الأمن في الاعتبار. ولا تشمل هذه التكاليف الاحتياجات المتعلقة بإعادة تأهيل الخدمات اللازمة لعمل القطاعات.

النتائج الرئيسية

تشير التقديرات إلى أنّ النزاع في سوريا ألحق الضرر بثلث رصيد رأس المال الإجمالي للبلاد، وتسبب في أضرار مادية إجمالية في البنية التحتية والمباني بقيمة 108 مليارات دولار أميركي¹. تُعد محافظات حلب وريف دمشق وحمص الأكثر تضرراً، وقد قُدرت الأضرار فيها بنحو 31 مليار دولار، و22 مليار دولار، و11 مليار دولار على التوالي. في المقابل، نجت مناطق عدّة من الدمار الواسع، إذ شهدت المحافظات الساحلية والجنوبية مثل طرطوس والسويداء والقنيطرة أضراراً مادية محدودة نسبياً (الجدول 1). وتُعد البنية التحتية الفئة الأكثر تضرراً من الأصول، وتمثل نحو 48% من مجمل الأضرار. وتعكس هذه التكاليف المرتفعة حجم الدمار الهائل الذي خلفه أكثر من 13 عاماً من النزاع في سوريا، وخصوصاً في المراكز الحضرية التي شهدت معظم أحداث النزاع.

الجدول 1. تقديرات الأضرار المادية حسب المحافظة حتى 31 كانون الأول/ديسمبر 2024 (بملايين الدولارات الأميركية)

المحافظة	الأضرار في المباني السكنية (بملايين الدولارات)	الأضرار في المباني غير السكنية (بملايين الدولارات)	الأضرار في البنية التحتية (بملايين الدولارات)	مجمّل الأضرار (بملايين الدولارات)
حلب	11,317	7,121	12,423	30,862
ريف دمشق	6,785	5,983	9,529	22,296
حمص	3,028	2,403	5,400	10,831
حماة	2,086	1,175	4,208	7,470
الرقّة	1,084	707	5,050	6,840
إدلب	1,960	1,730	2,269	5,959
دير الزور	1,291	887	3,579	5,757
الحسكة	714	862	4,002	5,578
دمشق	2,300	1,336	1,890	5,526
درعا	1,480	737	2,087	4,304
اللاذقية	390	330	709	1,429
القنيطرة	84	22	393	499
السويداء	106	97	260	464
طرطوس	88	53	241	383
المجموع	32,714	23,443	52,040	108,197

المصدر: فريق التقييم.

من المُقدّر أنّ تتراوح تكاليف إعادة الإعمار بين 140 مليار دولار أميركي و345 مليار دولار أميركي، مع تقدير أساسي متحفّظ يبلغ نحو 216 مليار دولار. وتشمل هذه التكاليف نحو 75 مليار دولار للمباني السكنية، و59 مليار دولار للمباني غير السكنية، و82 مليار دولار للبنية التحتية (الجدول 2). وتقتصر هذه التقديرات على تكاليف إعادة إعمار الأصول المادية، ولا تشمل الاحتياجات المتعلقة بإعادة تأهيل الخدمات اللازمة لعمل القطاعات. وتحتاج محافظات حلب وريف دمشق إلى أكبر حجم من الاستثمارات لغايات إعادة الإعمار. إلى ذلك، تسهم عوامل مثل التضخم، وندرة المواد، واعتماد نهج «إعادة البناء بشكل أفضل»، وتكاليف الأمن، وارتفاع تكاليف اليد العاملة، في زيادة الأسعار الوجودية، والتي تُقدّر بأنها ارتفعت بنحو 2.1 إلى 2.3 مرة عن مستويات ما قبل النزاع بالنسبة إلى المباني، وبنحو 2.1 إلى 3.3 مرة بالنسبة إلى البنية التحتية، وهي زيادات أُدرجت في تقديرات تكاليف إعادة الإعمار. ونتيجة لذلك، بلغت تقديرات إعادة الإعمار حوالي ضعف قيمة الأضرار المادية المقدّرة، والبالغة 108 مليارات دولار.

1 الأرقام الواردة في النص مدوّرة إلى أقرب عدد صحيح، بينما تعرض الجداول القيم بدقة عشرية. وقد تظهر فروق طفيفة نتيجة عملية التقريب.

من المهم التأكيد على أنّ نتائج هذا التقييم تخضع لدرجة عالية من عدم اليقين. يتطوّل آب/أغسطس 2025، كان الوضع الأمني لا يزال متقلّباً، وهو ما قد يؤثّر بشكل كبير على تكاليف إعادة الإعمار على مستوى المحافظات، بما في ذلك احتمال زيادة النفقات المطلوبة في حال حدوث تطورات أمنية أو سياسية إضافية.

الجدول 2. التقدير الأساسي لتكاليف إعادة الإعمار حسب المحافظة حتى 31 كانون الأول/ديسمبر 2024 (بملايين الدولارات الأميركية)

المحافظات	كلفة إعادة إعمار المباني السكنية (بملايين الدولارات)	كلفة إعادة إعمار المباني غير السكنية (بملايين الدولارات)	كلفة إعادة إعمار البنية التحتية (بملايين الدولارات)	مجمّل كلفة إعادة الإعمار (بملايين الدولارات)
حلب	26,281	17,964	20,046	64,291
ريف دمشق	15,897	15,364	15,117	46,378
حمص	7,714	7,088	9,499	24,301
حماة	4,893	2,991	6,962	14,846
إدلب	5,167	4,972	3,354	13,493
دير الزور	3,044	2,544	6,808	12,395
الحسكة	1,242	2,252	6,718	10,212
الرقبة	1,706	1,373	6,012	9,091
دمشق	4,549	2,401	2,069	9,018
درعا	3,299	1,883	3,331	8,512
اللاذقية	371	313	692	1,376
القيطية	171	35	698	905
السويداء	101	112	248	462
طرطوس	64	38	175	278
المجموع	74,498	59,331	81,728	215,557

المصدر: فريق التقييم.

تأتي تقديرات الأضرار وتكاليف إعادة الإعمار هذه في سياق وضع ماركو-اقتصادي متردي بالفعل. شهد الاقتصاد السوري خلال العقد الماضي تدهوراً شديداً بفعل النزاع، إذ انخفض الناتج المحلي الإجمالي الحقيقي بنحو 53% بين عامي 2010 و2022 (البنك الدولي، 2025b). وعلى المستوى الاسمي، انكمش الناتج المحلي الإجمالي (بالدولار الأميركي الجاري) من 67.5 مليار دولار في العام 2011 إلى نحو 21.4 مليار دولار في العام 2024. وتبلغ تقديرات تكاليف إعادة الإعمار نحو عشرة أضعاف الناتج المحلي الإجمالي الاسمي لعام 2024، ما يعكس حجم الدمار الواسع الذي خلفه النزاع بالإضافة إلى سنوات طويلة من الانكماش الاقتصادي الحاد. كما أدّت الاضطرابات الناجمة عن النزاع والعقوبات الاقتصادية إلى الاعتماد على الواردات، واستنزاف الاحتياطات الأجنبية، وتقييد شديد في الموارد المالية العامة، إذ تراجمت النفقات الاستثمارية في العام 2024 إلى ما يعادل 11% فقط من مستواها في العام 2010 (البنك الدولي، 2025b). وتزيد هذه الظروف من تقييد قدرة الاقتصاد الكلي والمالية العامة لسوريا على مواجهة حجم تكاليف إعادة الإعمار.

يمكن للتحليلات الإضافية أن تساعد في تعميق فهم احتياجات التعافي في سوريا. تشمل المجالات المحتملة لتقييمات إضافية إجراء تقييمات شاملة للأضرار والخسائر والاحتياجات في القطاعات الرئيسية، من ضمنها التراث الثقافي، إلى جانب دراسات أكثر تفصيلاً على المستوى المحلي في المناطق الأكثر تضرراً. وقد يصبح من الممكن أيضاً إجراء تحليلات أعمق خاصة بقطاعات محددة مع تحسن توافر البيانات.

تعرض الأقسام التالية من هذا التقرير مزيداً من التفاصيل عن نتائج التقييم ومنهجيته:

- القسم 2: يعرض النتائج التفصيلية للبنية التحتية والمباني السكنية وغير السكنية، ويصف بإيجاز المنهجية المتبعة.
- القسم 3: يناقش التطبيقات العملية لنتائج التقييم، ويتناول حدود التحليل.
- الملاحق: تتضمّن تحليلاً مقارناً مع نتائج تقييمات أخرى عن الأضرار والخسائر وتكاليف إعادة الإعمار في سوريا؛ ومنهجية تفصيلية للتقييم؛ وقائمة شاملة بمصادر البيانات الداعمة لنتائج التقرير.



DETAILED ASSESSMENT FINDINGS

Note on Methodology

The methodology for estimating damage and reconstruction costs in Syria's post-conflict scenario is designed to address the complexities and uncertainties inherent in such assessments. It involves: (1) **evaluating the GCS** (pre-conflict asset value) for buildings and infrastructure using the local census (2011), building footprints, and global databases. This integration provides a comprehensive breakdown by building height, occupancy class, and structural typology, adjusted for current conditions such as aging structures and reduced construction activities due to the conflict; (2) systematically assessing **physical damage** through the Global Rapid Post-disaster Damage Estimation (GRADE) methodology² (Gunasekera et al., 2018; World Bank, 2025a), which involves categorizing damage into four levels from minimal to destroyed and using Syria-specific structural typologies and replacement costs informed by regional comparators; and (3) estimating **reconstruction costs** using unit cost multipliers based on realistic and tested assumptions, build-back-better premiums to ensure reconstruction following resilience standards, debris removal, and hazardous waste management, whilst taking into account completed prior reconstruction efforts. Probabilistic modeling and sensitivity checks are completed to ensure robust estimates reflecting Syria's post-conflict conditions (details are included in Annex 2). This methodology provides a realistic range of reconstruction costs, offering planners a best estimate along with scenarios that reflect variations above and below this estimate, while transparently acknowledging uncertainties and providing a comprehensive planning framework.

Recognizing the inherent uncertainties in damage estimation, especially in a complex and prolonged conflict as in Syria, the methodology employs a robust calibration process. This involves aligning damage estimates with various national and city-level assessments from organizations such as the United Nations Economic and Social Commission for Western Asia (UNESCWA), the World Bank, the United Nations Human Settlements Programme (UN-Habitat), the Syrian Center for Policy Research (SCPR), and the United Nations Development Programme (UNDP). Triangulating data from multiple sources enhances the reliability of estimates, providing a comprehensive understanding of the damage landscape in order to support informed decision-making for reconstruction efforts.

² The GRADE methodology complements well-established methodologies as a faster, less-resource-intensive remote assessment covering fewer sectors and delivering damage estimations only (not losses or needs). It differs from other more comprehensive crisis assessment methodologies such as the Damage and Loss Assessment (DaLA), Rapid Damage and Needs Assessment (RDNA), and the Post-Disaster Needs Assessment (PDNA), which cover damage, losses, and needs at a more detailed sectoral level. In contrast, this report estimates cumulative damage and reconstruction costs across a 13-year period of conflict, requiring methodological adaptations to address long-term impacts, significant data constraints, and evolving reconstruction dynamics. The approach was tailored to the Syrian context to ensure analytical rigor while remaining feasible under conditions of limited access to data and fragmented information.

Gross Capital Stock Value Estimation

Syria's total GCS is estimated at US\$359 billion adjusted to December 2024 values (Table 3). The estimated GCS is broken down as follows:

- **Residential buildings and their contents represent US\$143 billion** (replacement value³ for buildings US\$109 billion; contents US\$34 billion).
- **Non-residential buildings, including their contents, account for US\$87 billion** (replacement value for buildings US\$53 billion; contents US\$34 billion). This value does not include cultural heritage assets.
- **The infrastructure category constitutes an additional US\$130 billion.** This includes transport; power; water, sanitation, and hygiene (WASH); and telecommunications.

Table 3. Gross Capital Stock Estimated by the Assessment as of December 31, 2024 (US\$ million)

Governorates	Total Residential Buildings & Contents Exposure (US\$ mn)	Total Non-Residential Buildings & Contents Exposure (US\$ mn)	Total Infrastructure Exposure (US\$ mn)	Total Economic Exposure (US\$ mn)
Aleppo	27,342	17,532	22,105	66,980
Rif Dimashq	25,009	20,395	19,123	64,527
Homs	13,888	10,558	9,947	34,393
Hama	11,970	6,876	11,672	30,518
Idleb	9,921	5,337	10,433	25,691
Deir-ez-Zor	10,970	5,348	7,923	24,241
Al-Hasakeh	6,056	3,738	11,109	20,903
Ar-Raqqa	9,013	3,690	6,346	19,048
Damascus city	6,839	4,284	7,016	18,140
Dar'a	4,954	2,042	8,269	15,265
Lattakia	6,843	2,911	5,300	15,055
Quneitra	5,691	2,421	6,124	14,235
As-Sweida	3,537	1,139	3,553	8,229
Tartous	578	207	905	1,690
Total	142,612	86,478	129,826	358,915

Source: Assessment team.

³ The replacement value reflects the expense required to restore damaged or destroyed assets to their pre-conflict condition (without improvements, unlike reconstruction costs).

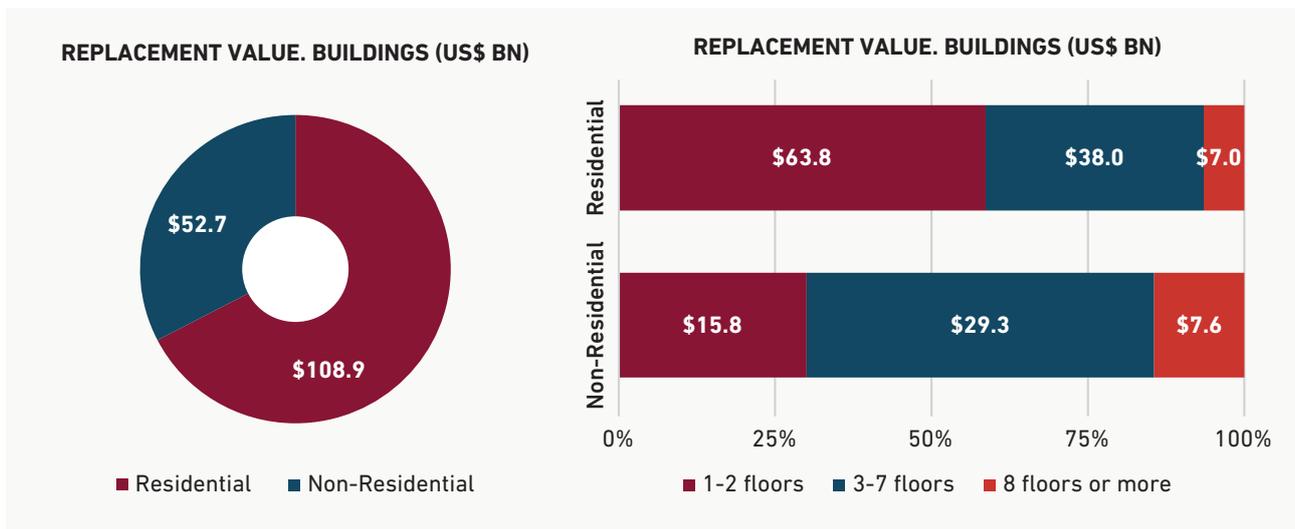
Understanding the distribution of building types and their structural composition is crucial for developing targeted policies that enhance building resilience and inform investment strategies in urban planning and disaster risk management. As shown in Figure 1, the replacement value of buildings is assessed by analyzing floor areas (including number of floors) and structure types:

- Residential buildings make up 67 percent of the total building stock when excluding contents. Among these, buildings with 1–2 floors account for 59 percent of the total exposure, while those with 3–7 floors represent 35 percent.
- In contrast, non-residential buildings with 1–2 floors constitute 30 percent of the total replacement value, and those with 3–7 floors make up 56 percent.

Regarding structural types (Figure 2):

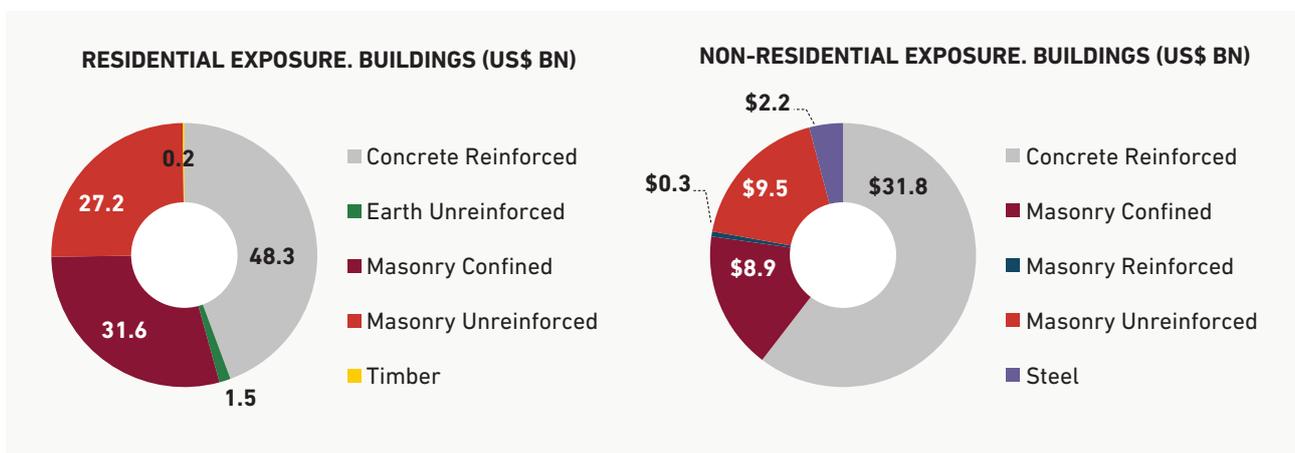
- 44 percent of residential buildings are made of reinforced concrete, while confined and unreinforced masonry structures represent 29 percent and 25 percent, respectively.
- For non-residential buildings, reinforced concrete structures account for 60 percent of the exposure, with confined and unreinforced masonry sharing 16 percent and 17 percent, respectively.

Figure 1. Residential and Non-Residential Exposure (left) and across the Number of Floors Classes (right) (US\$ billion)



Source: Assessment team.

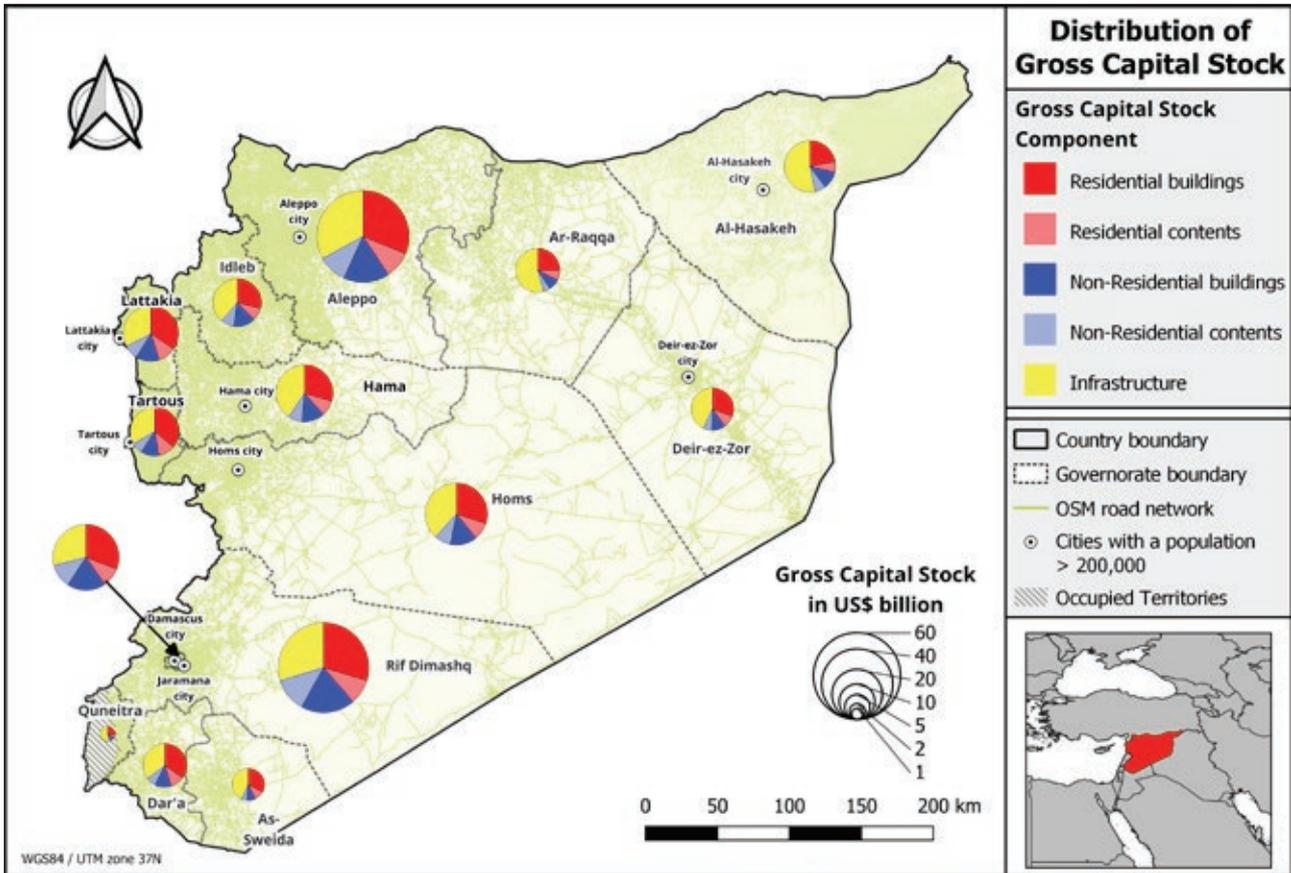
Figure 2. Residential (left) and Non-Residential (right) Replacement Value by Main Structural Types (US\$ billion)



Source: Assessment team.

Figure 3 illustrates the distribution of pre-conflict residential, non-residential, and infrastructure exposure across Syrian governorates. It shows the substantial concentration of assets in the governorates of Aleppo, Rif Dimashq, Damascus, Homs, and Hama.

Figure 3. Residential (incl. contents), Non-residential (incl. contents), and Infrastructure Exposure by Governorate in Syria (US\$ billion)



Source: Assessment team.

Prior to the outbreak of conflict in 2011, Syria’s economy and infrastructure was a complex landscape, featuring vibrant urban centers, productive industrial hubs, and diverse rural economies. The GCS represented significant investments accumulated over decades, underpinning Syria’s socioeconomic fabric. Understanding the pre-conflict distribution and value of these assets provides the analytical foundation to calculate damage and the projected reconstruction costs.

The assessment of capital stock exposure for residential and non-residential buildings in Syria employed a hybrid methodology that integrated top-down and bottom-up approaches. Top-down data from the International Monetary Fund’s (IMF) Investment and Capital Stock dataset and the World Economic Outlook provided a macro-level perspective, while bottom-up data from the World Settlement Footprint (WSF®) 3D dataset and machine-learning-based building footprint datasets offered detailed building-level insights. Governorate-level modifiers and adjustments were applied to account for aging structures and reduced construction activities due to the prolonged conflict, using insights from the Global Earthquake Model (GEM) and 2011 local census data. Infrastructure exposure was assessed using local and international databases, including from OpenStreetMap (OSM) and the United Nations Office for the Coordination of Humanitarian Affairs (UNOCHA), with unit cost estimates from recent local construction projects ensuring accurate valuations for roads, energy networks, water infrastructure, and telecommunications. The dataset was rigorously verified to exclude pre-existing damage, derelict assets, or reconstructed infrastructure, ensuring that damage attribution was specific to conflict-related impacts. Detailed methodological explanations are provided in Annex 2.

The assessment's findings align somewhat with other global exposure models, such as the 2022 Global Earthquake Model (Table 4). These comparisons provide some confidence in the robustness of the results but also highlight the levels of uncertainty.

Table 4. Comparison of Present Exposure Model with Other Exposure Models (US\$ billion)

Exposure Model		Buildings (US\$ billion)			Contents (US\$ billion)			Total (US\$ billion)
Name	Year	Residential	Non-Residential	Total	Residential	Non-Residential	Total	
This study	2025	\$108.9	\$52.7	\$161.5	\$33.7	\$33.8	\$67.5	\$229.1
GEM 2022	2022	\$149.3	\$30.9	\$180.2	\$11.3	\$42.9	\$54.1	\$234.3
GIRI 2022	2022	\$10.9	\$79.8	\$90.7	-	-	-	-
GAR 2015	2013	\$56.3	\$148.4	\$204.8	-	-	-	-

Source: Assessment team.

Note: The US\$ at present is approximately 1.37 and 1.12 the US\$ value in 2013 and 2022, respectively.

GAR = Global Assessment Report (on Disaster Risk Reduction); GIRI = Global Infrastructure Risk Model and Index.



Direct Physical Damage Estimation

The Syrian conflict has inflicted extensive damage estimated at US\$108 billion, nearly 30 percent of the country's total GCS. Residential buildings saw damage amounting to US\$33 billion and representing around 23 percent of their US\$143 billion total value. Non-residential buildings faced US\$23 billion in damage, equivalent to approximately 27 percent of their exposed value of US\$87 billion. Infrastructure suffered the greatest proportion of damage, with a value of US\$52 billion in damaged assets, corresponding to 40 percent of its total exposed value of US\$130 billion (Table 5 and Table 6).

Table 5. Best Estimate of Direct Damage up to December 31, 2024 (US\$ million)

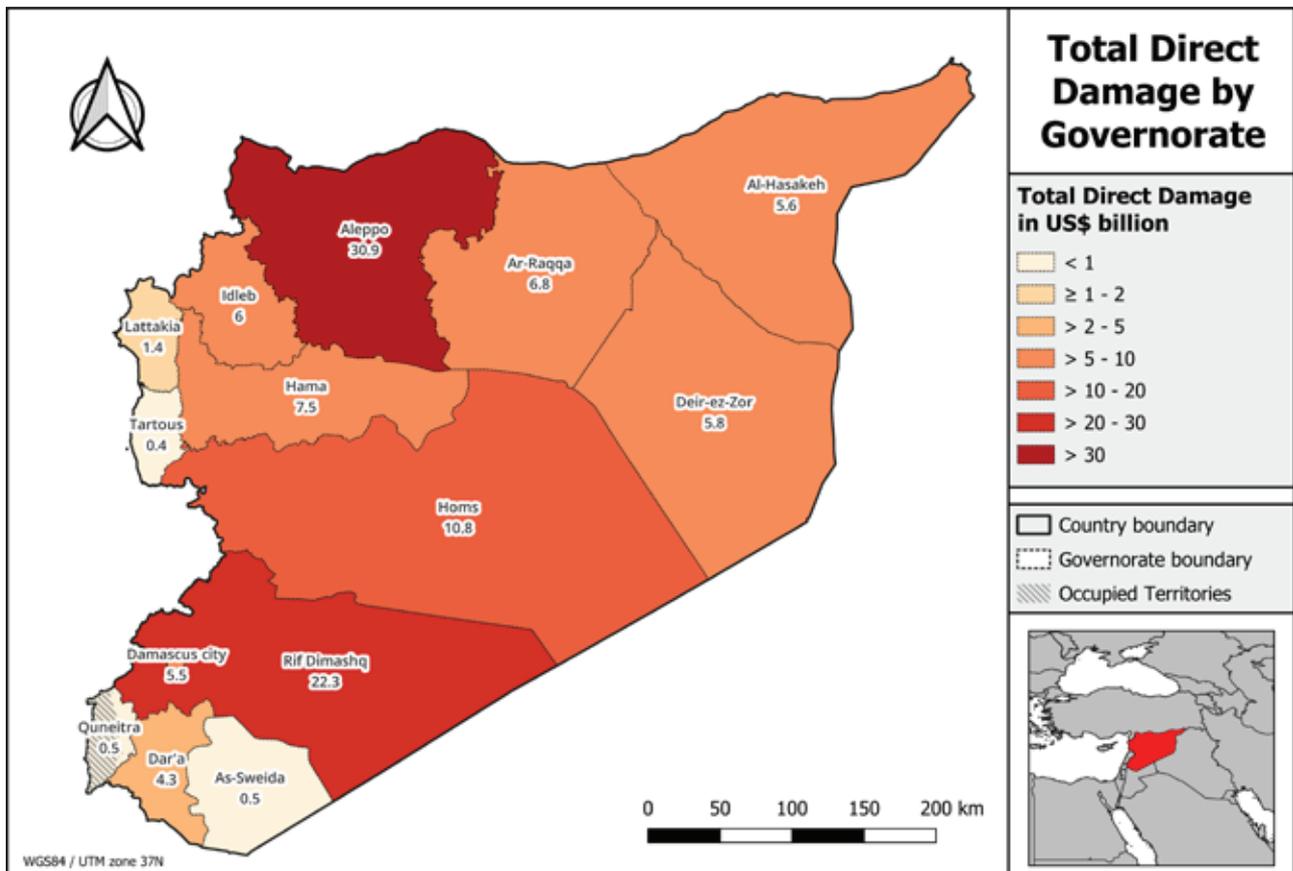
Governorates	Residential Damage (US\$ mn)	Non-Residential Damage (US\$ mn)	Infrastructure Damage (US\$ mn)	Total Damage (US\$ mn)
Aleppo	11,317	7,121	12,423	30,862
Rif Dimashq	6,785	5,983	9,529	22,296
Homs	3,028	2,403	5,400	10,831
Hama	2,086	1,175	4,208	7,470
Idleb	1,084	707	5,050	6,840
Deir-ez-Zor	1,960	1,730	2,269	5,959
Al-Hasakeh	1,291	887	3,579	5,757
Ar-Raqqa	714	862	4,002	5,578
Damascus city	2,300	1,336	1,890	5,526
Dar'a	1,480	737	2,087	4,304
Lattakia	390	330	709	1,429
Quneitra	84	22	393	499
As-Sweida	106	97	260	464
Tartous	88	53	241	383
Total	32,714	23,443	52,040	108,197

Source: Assessment team.

The incidence of the damage varies significantly across governorates and by asset type (Figure 4 and Figure 5). Aleppo, specifically Aleppo City, has experienced the most significant damage, amounting to nearly US\$31 billion and accounting for approximately 29 percent of the total assessed damage, primarily in infrastructure and housing. Rif Dimashq follows closely with a total of US\$22 billion in damage, also heavily impacted across all sectors, and geographically concentrated around the suburbs of Damascus. Notably, governorates such as Ar-Raqqa and Al-Hasakeh have disproportionately high infrastructure damage relative to residential and non-residential sectors. For instance, the Al-Hasakeh governorate was the largest oil-producing

region in the country before the conflict, contributing to half of the nation's oil production (ACAPS, 2014). This could potentially explain the high damage related to infrastructure, given the region's high-value assets. Conversely, governorates such as Tartous, As-Sweida, and Quneitra have sustained relatively limited damage across all categories, underscoring geographical disparities and varied intensity of conflict exposure.

Figure 4. Map of Estimated Total Physical Damage at Governorate Level



Source: Assessment team.

Note: Further sector-wise physical damage maps can be found in Annex 5.

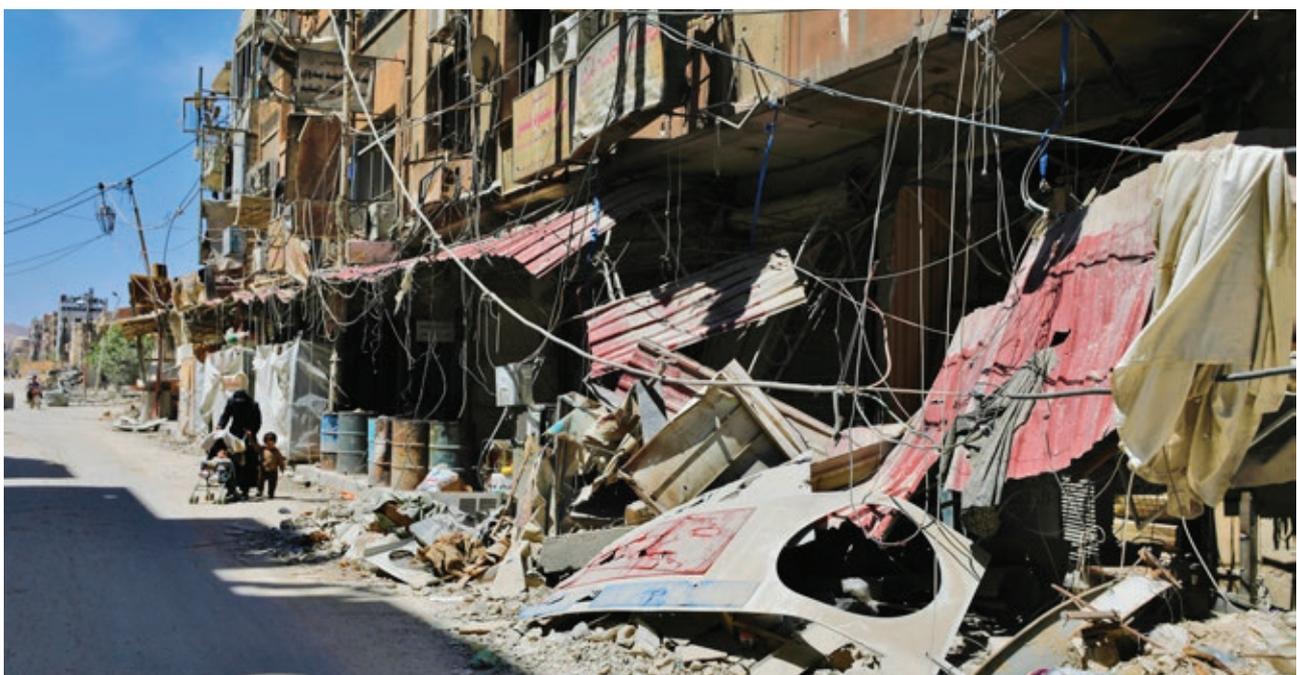
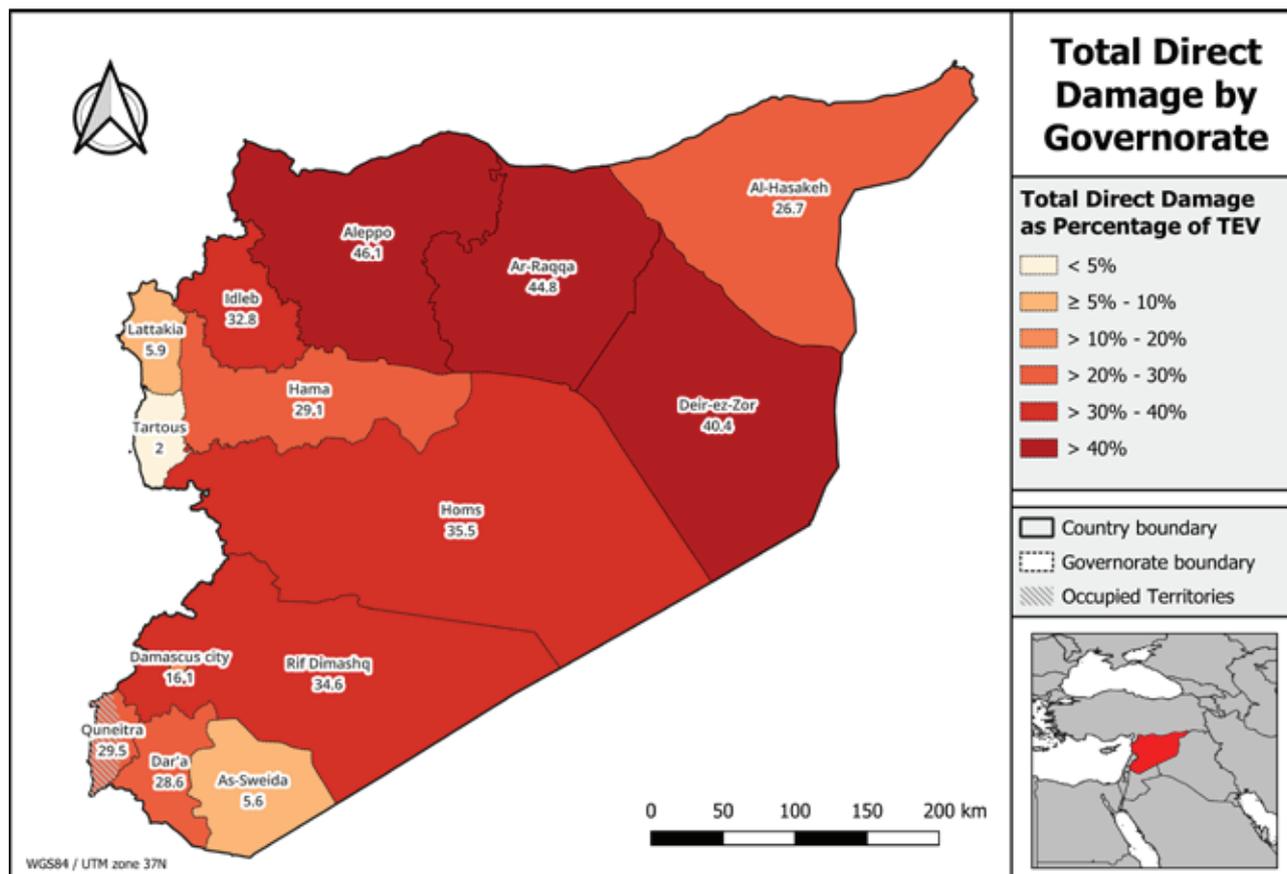


Figure 5. Map of Estimated Total Physical Damage as % of Total Exposed Value (replacement capital stock) at Governorate Level



Source: Assessment team.

Table 6 presents the physical damage in each region by category as a percentage of the total GCS value of residential, non-residential buildings, and infrastructure. The most affected governorates in terms of residential damage are Aleppo (41.4 percent), Idlib (28.7 percent), and Rif Dimashq (27.1 percent), underscoring severe damage in major urban and densely populated areas. Aleppo and Idlib also report particularly high levels of non-residential damage (40.6 percent and 40.4 percent, respectively), indicating substantial economic disruptions due to damage to industrial and commercial structures. Infrastructure damage is particularly severe, equating to 40.1 percent of the country's infrastructure assets. Governorates such as Ar-Raqqa (61.1 percent), Deir-ez-Zor (58.4 percent), and Aleppo (56.2 percent) experienced particularly high infrastructure damage rates, emphasizing major disruptions in transport, power supply, and WASH systems.

The estimate of physical damage between 2011 and 2024 to capital stock presented in this report aligns well with previous national-level assessments of physical damage. These range from approximately US\$58 billion (SCPR, 2020) to US\$190 billion (Mroue & Chehayeb, 2023) adjusted to December 2024 values. A comprehensive review of these studies is presented in Annex 1.

The damage assessment in Syria utilized the GRADE methodology, which systematically integrates diverse data sources from multiple studies and reports over the conflict period. Key sources include UrBan Syria, the Syria City Damage Atlas, Armed Conflict Location and Event Data (ACLED) density information, UN-Habitat raw damage data, social media, and news reports, allowing for interpolation in areas with incomplete data to ensure comprehensive damage distribution. The methodology involves a comparative analysis with past damage assessments to validate the results. Damage estimates are based on Syria-specific structural typologies and replacement costs, using data from Syrian construction (2011–2014) and regional comparators from Türkiye and Jordan (2022). Damage is categorized into four levels: "Destroyed

or Severely Damaged," "Moderate Damage," "Slight Damage," and "Minimal Damage," each with specific criteria for reconstruction and repair.

Table 6. Best Estimate of Direct Damage (% of total exposed value of buildings and infrastructure)

Governorates	Residential Damage (as % of Res TEV)	Non-Residential Damage (as % of Non-Res TEV)	Infrastructure Damage (as % of Infra TEV)	Total Damage (as % of Total Exposed Value)
Aleppo	41.4%	40.6%	56.2%	46.1%
Rif Dimashq	21.9%	34.6%	61.1%	44.8%
Homs	22.7%	36.7%	58.4%	40.4%
Hama	25.3%	35.0%	46.3%	35.5%
Idleb	27.1%	29.3%	49.8%	34.6%
Deir-ez-Zor	28.7%	40.4%	32.3%	32.8%
Al-Hasakeh	14.5%	10.7%	43.4%	29.5%
Ar-Raqqa	21.0%	22.0%	40.3%	29.1%
Damascus city	21.6%	25.3%	39.4%	28.6%
Dar'a	11.8%	23.1%	36.0%	26.7%
Lattakia	16.6%	12.7%	19.0%	16.1%
Quneitra	3.6%	6.2%	8.9%	5.9%
As-Sweida	3.0%	8.5%	7.3%	5.6%
Tartous	1.0%	1.4%	3.8%	2.0%
Total	22.9%	27.1%	40.1%	30.1%

Source: Assessment team.

Note: TEV = total exposed value.



Reconstruction Cost Estimation

The estimated range for the reconstruction is between US\$141 billion and US\$343 billion. The “best estimate” cost of reconstruction across all governorates amounts to US\$216 billion made up of US\$75 billion in residential, US\$59 billion in non-residential, and US\$82 billion in infrastructure (Table 7). This estimate considers the average potential changes (both increases and decreases) in reconstruction unit costs of construction (UCCs) for the moderate and severely damaged portions, adapting for the potential increase of cost of materials for the lower damage classes (minimal and slight), uncertainties in reconstruction percentages across the governorates, and the potential percentage of locations and assets needing hazardous material removal.

Aleppo stands out as the governorate with the highest overall reconstruction cost, totaling approximately US\$64 billion, the majority of which is in Aleppo City. Its residential reconstruction costs alone account for a large share of the total reconstruction, at nearly US\$26 billion, while non-residential and infrastructure needs are also substantial, amounting to about US\$18 billion and US\$20 billion, respectively. Aleppo’s widespread destruction, both in residential areas and essential infrastructure, highlights the massive effort required to rebuild this critical urban center, its industry, and the infrastructure networks powering it.

Table 7. Estimated Reconstruction Costs as of December 31, 2024 (US\$ million)

Governorates	Residential Reconstruction Cost (US\$ mn)	Non-Residential Reconstruction Cost (US\$ mn)	Infrastructure Reconstruction Cost (US\$ mn)	Total Reconstruction Cost (US\$ mn)
Aleppo	26,281	17,964	20,046	64,291
Rif Dimashq	15,897	15,364	15,117	46,378
Homs	7,714	7,088	9,499	24,301
Hama	4,893	2,991	6,962	14,846
Idleb	5,167	4,972	3,354	13,493
Deir-ez-Zor	3,044	2,544	6,808	12,395
Al-Hasakeh	1,242	2,252	6,718	10,212
Ar-Raqqa	1,706	1,373	6,012	9,091
Damascus city	4,549	2,401	2,069	9,018
Dar'a	3,299	1,883	3,331	8,512
Lattakia	371	313	692	1,376
Quneitra	171	35	698	905
As-Sweida	101	112	248	462
Tartous	64	38	175	278
Total	74,498	59,331	81,728	215,557

Source: Assessment team.

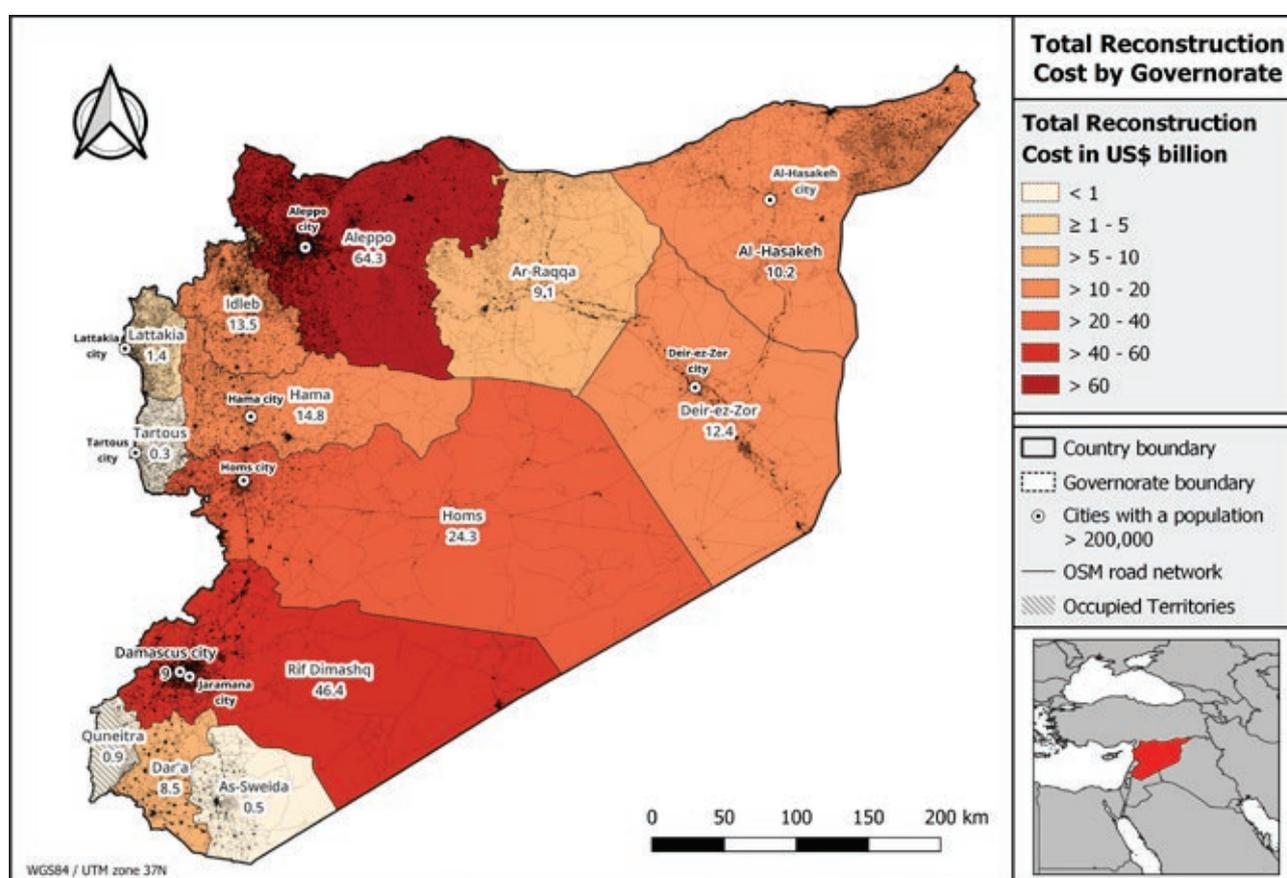
Rif Dimashq follows with a total reconstruction cost of US\$46 billion. Here, the costs are more evenly distributed across the categories, with residential reconstruction reaching US\$16 billion, non-residential at US\$15 billion, and infrastructure at US\$15 billion. This distribution can be explained by the larger size of the governorate in relation to its population, encompassing both the suburb areas of Damascus (heavily urbanized) and rural areas with transport and energy infrastructures, as opposed to Aleppo, where the conflict has mainly occurred in the city center.

The reconstruction cost estimation methodology for Syria applies multipliers to baseline UCCs to reflect improved standards, demolition, and the build-back-better approach. Based on historical and recent data, multipliers of 2.1 for residential, 2.3 for non-residential, and 2.1–3.3 for infrastructure assets were adopted to account for the costs of enhanced reconstruction quality, earthquake-resistant design, compliance measures, and hazardous material removal (see Annex 3). These multipliers include a 5 percent overhead that covers demolition, debris removal, and site preparation. A significant innovation in this methodology is the “prior rebuilt percentage” for each governorate, which reduces estimated damage by accounting for repairs and reconstruction already completed during the protracted conflict (2011–2024). This percentage acts as a reduction factor, subtracting a portion of the damage in each governorate based on prior reconstruction efforts. Probabilistic modeling using beta distributions manages uncertainties in damage classification, ensuring estimates align with empirical evidence and historical reports. This process results in a distribution of potential reconstruction costs, identifying a central best estimate along with plausible upper and lower bounds to transparently acknowledge uncertainties. Reconstruction costs focus on the direct costs of rebuilding physical infrastructure, excluding the restoration of services and ongoing maintenance expenses. The full methodology is described in Annex 2.

The reconstruction estimates from this assessment present a more focused analysis of direct rebuilding costs compared to broader evaluations by other organizations (see Annex 1 for details). While this assessment emphasizes detailed breakdowns into residential, non-residential, and infrastructure costs, previous estimates by entities such as UNESCWA and UNDP have reported significantly higher figures at US\$442.2 billion and US\$923 billion, respectively, which include broader economic impacts and GDP losses. These earlier assessments incorporate additional factors such as counterfactual GDP growth scenarios and sectoral analyses, reflecting the extensive economic toll beyond physical reconstruction. The current findings offer a nuanced view that concentrates on direct reconstruction costs, highlighting the complexities and uncertainties involved in estimating the financial requirements for rebuilding Syria.

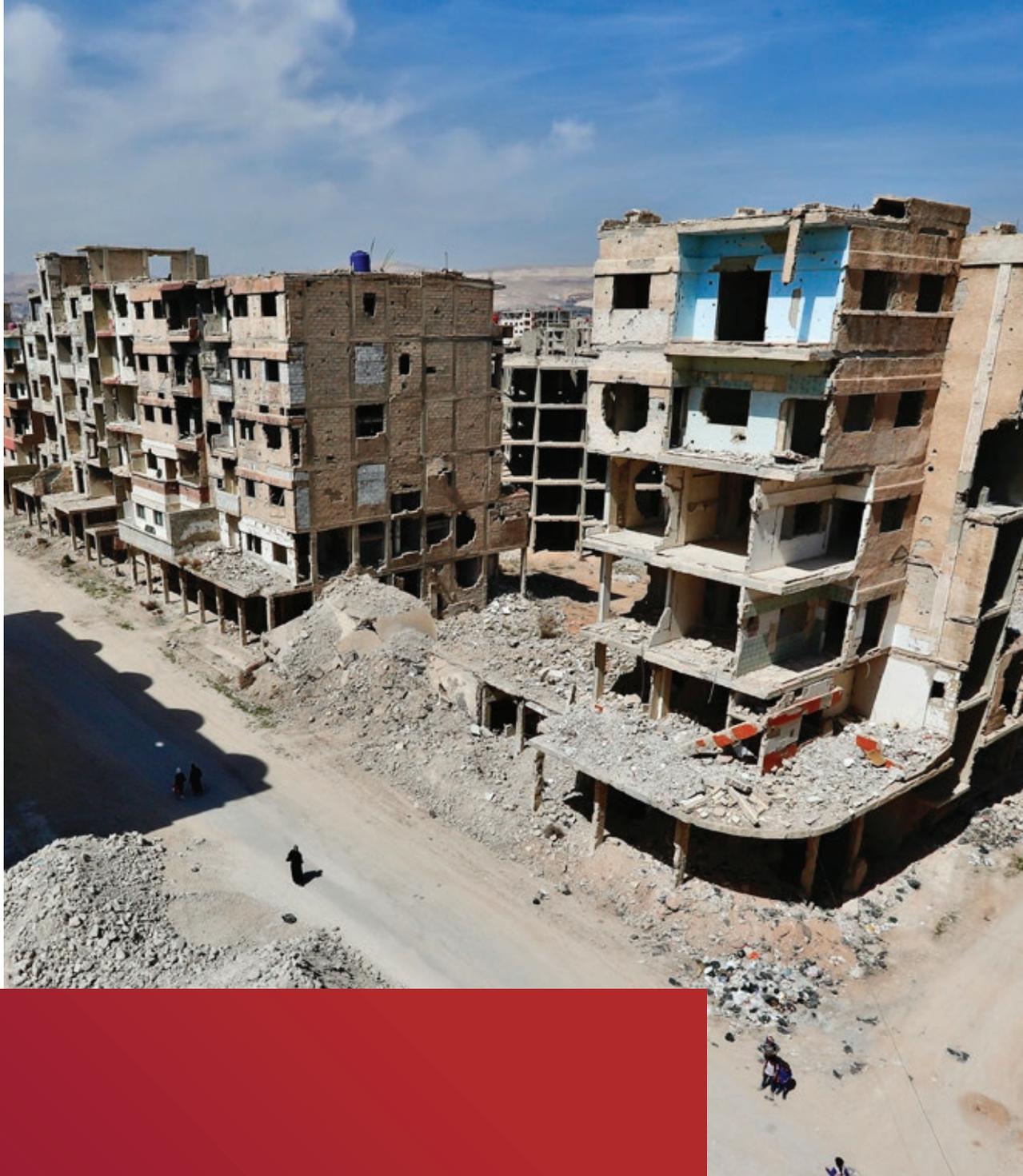
Other governorates such as Homs, Hama, and Idlib show similarly high costs, though with variations. Homs, for example, has a total cost of US\$24 billion, with residential reconstruction at US\$8 billion and infrastructure at US\$10 billion. Conversely, regions such as Lattakia, Quneitra, and As-Sweida exhibit much lower overall costs. Nevertheless, while not as severely impacted as Aleppo, Homs and other such governorates still face substantial infrastructure challenges, and it is also important to look at the relative impacts (Figure 6).

Figure 6. Map of Estimated Total Reconstruction Cost at Governorate Level



Source: Assessment team.

Note: Further sector-specific maps of the reconstruction costs can be found in Annex 5.



DISCUSSION OF RESULTS AND LIMITATIONS

Prior to the conflict, Syria exhibited distinct economic geographies, with thriving urban centers and critical infrastructure, including oil-related assets. The densely populated western corridor with key urban centers such as Aleppo, Homs, Hama, and Damascus served as the core of industrial, commercial, and cultural activities. The eastern and northeastern regions, notably Ar-Raqqa and Al-Hasakah governorates, were economically significant due to their substantial infrastructure investments, including essential road networks, energy facilities, and oil-related assets. These regional specializations shaped varying levels of vulnerability to conflict-induced damage and largely explain the diverse patterns and intensities of destruction observed across the country.

The GCS for buildings and infrastructure in Syria, which has been developed as part of this report, has applications beyond this assessment. It can inform urban and regional planning, examination of scenarios of captured capital, post-conflict recovery and reconstruction planning. This marks a significant advancement towards further analysis and refinement and can contribute to policy dialogue support in various capacities.

The impact of the protracted conflict has been massive, with around one-third of the country's GCS destroyed. The results provide an early indication that access to basic services and infrastructure, both in urban areas where there was a concentration of damage, as well as critical infrastructure that support the larger country economy (such as energy assets), is severely undermined. This underscores the need to rebuild essential services such as transport, energy, WASH services, with emphasis on densely populated areas. These observations need to be further validated with deep dives, both geographic and sectoral. The uneven geographic distribution of impact across the country highlights the complex situation on the ground and the necessity of targeted reconstruction efforts.



Economic losses such as disruptions to businesses, reduced productivity, and overall declines in GDP were not included in this estimate. Similarly, service restoration costs have not been included in the best estimate reconstruction cost of US\$216 billion. This means that the true cost of the conflict is likely significantly higher than the estimates provided in this report, as recovery would need to go beyond the physical reconstruction costs of buildings and infrastructure assets.

The conflict has had a devastating impact on Syria's rich cultural heritage, but this impact is not reflected in the costs of damage and reconstruction presented here. The ancient cities of Aleppo and Palmyra, once vibrant centers of trade and culture, have suffered extensive damage due to fighting, looting, and deliberate destruction. World Heritage Sites, archaeological sites, museums, and religious buildings have all been targeted, resulting in the loss of invaluable artifacts and historical structures. The conflict has also disrupted traditional crafts and cultural practices, leading to the displacement of artists and artisans. This destruction represents an irreplaceable loss for Syria. The likely damage for Aleppo, considering cultural heritage alone, would be much higher than represented in this report.

Despite the robustness of the analytical approach, it is important to acknowledge limitations and uncertainties inherent in the data and methods of this report. Estimating damage in an active or recently ended conflict is challenging due to several factors:

- **Incomplete data:** The protracted and chaotic nature of the conflict means that damage data is patchy. Some areas were too dangerous to survey thoroughly, and documentation of destruction is uneven. Further security developments could also cause additional damage that is not reflected in this assessment.
- **Variable cost assumptions:** Rebuilding costs can vary widely by location and over time, and certain cost elements are hard to quantify. For example, UCCs differ between urban and rural areas and have likely risen with inflation and scarcity of materials. Additionally, some cost multipliers – such as the extra expense of removing debris, clearing explosives, or logistics in war-torn areas – may not be fully accounted for, potentially making actual reconstruction costs higher than baseline estimates.
- **Underreported impacts:** The focus of this assessment is on direct physical damage to major building and infrastructure assets, which means some smaller-scale or indirect losses are underrepresented. Minor damage to homes (e.g., broken windows, superficial cracks, etc.) and losses of content or personal property are not fully captured in the US\$108 billion physical damage figure. Cultural heritage sites and buildings are also not assessed.

These uncertainties do not detract from the overall conclusions and in fact suggest that the actual damage and reconstruction costs may be higher. Recognizing the limitations simply means that the findings should be used with an understanding of their inherent margins of error. It underscores the necessity for data refinement: as more information becomes available (for instance, when access improves to certain areas or as reconstruction projects get underway and reveal actual costs), the estimates should be updated and adjusted. In this context, future analysis could include a more comprehensive damage, loss, and needs assessment across key sectors (including cultural heritage), as well as more granular, local-level assessments in heavily affected areas. In a fluid post-conflict landscape, flexibility and caution are warranted when using these figures for recovery planning.



REFERENCES

- ACAPS. 2014. "Al Hasakeh Governorate Profile: Syria Needs Analysis Project." https://www.acaps.org/fileadmin/Data_Product/Main_media/15_al_hasakeh_governorate_profile_february_2014.pdf
- Action for Humanity. n.d. "Syria Rebuilding Appeal." <https://actionforhumanity.org/appeals/syria-homes/>
- Assistance Coordination Unit (ACU). 2024. *Post-Conflict Multisectoral Rapid Needs Assessment in Syria*. December 27, 2024. Issued by the Information Management Unit (IMU) at ACU. Dated December 27, 2024. https://acu-sy.org/imu_reports/imu_reports-post-conflict-multisectoral-rapid-needs-assessment-in-syria-en/.
- Airwars. 2024. "Civilian Casualties Archive (January 2022 – May 2024 Data Extract)." <https://airwars.org/civilian-casualties/>.
- Associated Press. 2018. "Syria Starts Rebuilding Even as More Destruction Wreaked." *VOA News*, February 26, 2018. <https://www.voanews.com/a/syria-starts-rebuilding-even-as-more-destruction-wreaked/4270776.html>
- Che, Y., Li, X., Liu, X., Wang, Y., Liao, W., Zheng, X., Zhang, X., Xu, X., Shi, Q., Zhu, J., Yuan, H., and Dai, Y. 2024. Building Height of Asia in 3D-GloBFP [Data set]. Zenodo. <https://doi.org/10.5281/zenodo.12674244>
- Dabbeek, J., and Silva, V. 2020. "Modeling the Residential Building Stock in the Middle East for Multi-Hazard Risk Assessment." *Natural Hazards* 100 (2): 781–810. <https://doi.org/10.1007/s11069-019-03842-7>
- Daniell, J. 2014. "Development of Socio-economic Fragility Functions for Use in Worldwide Rapid Earthquake Loss Estimation Procedures." (Doctoral dissertation, Karlsruher Institut für Technologie).
- De Mistura, S. 2017. "Briefing to the UN Security Council by the Special Envoy of the UN Secretary-General for Syria, Mr. Staffan de Mistura." United Nations Office at Geneva. November 27, 2017. <https://www.ungeneva.org/en/news-media/statements-and-speeches/2017/11/briefing-un-security-council-special-envoy-un-secretary>.
- ECLAC. 2014. *Handbook for Disaster Assessment*. United Nations Economic Commission for Latin America and the Caribbean. <https://repositorio.cepal.org/handle/11362/36823>
- Esch, T., Brzoska, E., Dech, S., Leutner, B., Palacios-Lopez, D., Metz-Marconcini, A., Zeidler, J. 2022. "World Settlement Footprint 3D – A First Three-dimensional Survey of the Global Building Stock." *Remote Sensing of Environment* 270, 112877. <https://doi.org/10.1016/j.rse.2021.112877>
- Faruqi, S. 2021. "Build a Home for a Syrian Family!" *Muslim Hands*, February 4, 2021. <https://muslimhands.org.uk/latest/2021/02/building-houses-for-displaced-syrians-in-idlib-safe-zone>
- GEM (Global Earthquake Model). 2023. *Syria Exposure Model* [Data set]. GEM Global Exposure Model Repository. https://github.com/gem/global_exposure_model/tree/main/Middle_East/Syria
- Gunasekera, R., Ishizawa, O., Aubrecht, C., Blankespoor, B., Murray, S., Pomonis, A., and Daniell, J. 2015. "Developing an Adaptive Global Exposure Model." *Earth Science Reviews* 150(C): 594–608.
- Gunasekera, R., Daniell, J., Pomonis, A., Arias, R. A. D., Ishizawa, O., and Stone, H. 2018. *Methodology Note on the Global Rapid Post Disaster Damage Estimation (GRADE) Approach*. Global Facility for Disaster Reduction and Recovery. Washington, DC: World Bank Group. https://www.gfdr.org/sites/default/files/publication/DRAS_web_04172018.pdf

HLP (Housing, Land and Property Rights). 2023a. "Idlib: Earthquake Lays Bare Issue of Informal Construction." *The Syria Report*, February 28, 2023. <https://hlp.syria-report.com/hlp/idlib-earthquake-lays-bare-issue-of-informal-construction/>

HLP. 2023b. "Government Housing Projects for Eligible Earthquake Victims." *The Syria Report*, June 20, 2023. <https://hlp.syria-report.com/hlp/government-housing-projects-for-eligible-earthquake-victims/>

HLP. 2024a. "Numbers for the Fund Dedicated to Victims of the Earthquake Do Not Match." *The Syria Report*, November 26, 2024. <https://hlp.syria-report.com/hlp/numbers-for-the-fund-dedicated-to-victims-of-the-earthquake-do-not-match/>

HLP. 2024b. "Earthquake Fund Seeks to Control Housing Costs for Affected Residents." *The Syria Report*, December 4, 2024. <https://hlp.syria-report.com/hlp/earthquake-fund-seeks-to-control-housing-costs-for-affected-residents/>

Humud, Carla E., Christopher M. Blanchard, and Mary Beth D. Nikitin. 2019. *Armed Conflict in Syria: Overview and U.S. Response*. CRS Report RL33487. Washington, DC: Congressional Research Service. https://www.everycrsreport.com/files/20190325_RL33487_cce2d1be100ec-5c59003b217b38c864f74ada880.pdf.

IMF (International Monetary Fund) 2020. *Consumer Price Index Manual: Concepts and Methods*. <https://www.imf.org/en/Data/Statistics/cpi-manual>

IMPACT Initiatives. 2025. *Humanitarian Situation Overview (HSOS), Northwest Syria*. March 2019–April 2025. Geneva: IMPACT Initiatives. Accessed March 2025. <https://www.impact-initiatives.org/resource-centre>.

Mroue, B. and Chehayeb, K. 2023. "Analysis: Syria Rebuilding Hopes Dim as War Enters Year 13." *AP News*, March 17, 2023. <https://apnews.com/article/syria-earthquake-assad-rapprochement-conflict-uprising-reconstruction-9de84b45246c8491be020de6b267ae54>

OECD (Organization for Economic Co-operation and Development). 2009. *Measuring Capital – OECD Manual 2009: Second Edition*. OECD Publishing. <https://doi.org/10.1787/9789264068476-en>

REACH. 2021. "Damage & Rehabilitation Assessment: Syria - Ar-Raqqa April 2021." https://repository.impact-initiatives.org/document/impact/1d61c8a5/REACH_SYR_Ar_Raqqa_Damage_Report_April_2021.pdf

REACH. 2024. "Syrian Arab Republic - Northeast Syria (NES) - Raqqa City: Damage & Rehabilitation Assessment: Locating rehabilitated structures - 24th of July 2023." https://repository.impact-initiatives.org/document/impact/b612cb56/REACH_SYR_NES_RaqqaCity_DamageAssessment_LocatingRehabilitatedStructures_2023_A1.pdf

Salame, R. 2021. "The Syrian War Is Still Raging, But The Battle Over Reconstruction Has Already Begun." *The Nation*, September 5, 2021. <https://www.thenation.com/article/archive/the-syrian-war-is-still-raging-but-the-battle-over-reconstruction-has-already-begun/>

SCBS (Syrian Central Bureau of Statistics). n.d. *Housing and Construction Indicators*. Retrieved March 13, 2025. <http://cbssyr.sy/indicator/house.htm>

SCBS. 2012a. *Statistical Yearbook 2012: Chapter 6, Table 1/6*. Retrieved March 13, 2025. <http://cbssyr.sy/yearbook/2012/Data-Chapter6/TAB-1-6-2012.pdf>

SCBS. 2012b. *Statistical Yearbook 2012: Chapter 6, Table 7/6*. Retrieved March 13, 2025. <http://cbssyr.sy/yearbook/2012/Data-Chapter6/TAB-7-6-2012.pdf>

- SCBS. 2015. *Statistical Yearbook 2015: Chapter 6, Table 4-6*. Retrieved April 13, 2025. <http://cbssyr.sy/yearbook/2015/Data-Chapter6/TAB-4-6-2015.pdf>
- Source Cooperative. 2024. Google-Microsoft-OSM Open Buildings. *Vida*. August 26, 2024. <https://source.coop/repositories/vida/google-microsoft-osm-open-buildings/description>
- SCPR (Syrian Center for Policy Research). 2015. *Alienation and Violence: Impact of Syria Crisis Report 2014*. Damascus: Syrian Centre for Policy Research. Damascus. SCPR. (Overview) <https://www.undp.org/arab-states/publications/alienation-and-violence-impact-syria-crisis-report-2014>.
- SCPR (Syrian Center for Policy Research). 2020. *Justice to Transcend Conflict: Impact of Syrian Conflict Report 2016–2019*. Syrian Center for Policy Research. https://scpr-syria.org/wp-content/uploads/2024/08/SCPR_JTC_2020_Report_English.pdf
- SCPR. 2023. *The Impact of the Earthquake in Syria: The Missing Developmental Perspective in the Shadow of Conflict*. Syrian Center for Policy Research. <https://scpr-syria.org/publications2/the-impact-of-the-earthquake-in-syria/>
- Syrian Arab Red Crescent (SARC), and International Federation of Red Cross and Red Crescent Societies (IFRC). 2025. *Need Assessment Report: Syria Complex Emergency* (Damascus, March 10, 2025). <https://go.ifrc.org/emergencies/7251/additional-info/assessment>.
- TASS. 2024. "Сирия при президенте Башаре Асаде" [Syria under President Bashar al-Assad]. December 9, 2024. <https://tass.ru/info/22617407>
- The Syria Report. 2023. "Syria's Reconstruction Committee Spent SYP 380 Billion in the 12-Year Conflict." November 14, 2023. <https://syria-report.com/syrias-reconstruction-committee-spent-syp-380-billion-in-the-12-year-conflict/>
- United Nations Development Programme (UNDP). 2025. *The Impact of the Conflict in Syria*. <https://www.undp.org/sites/g/files/zskgke326/files/2025-02/undp-sy-seia-final-24022025.pdf>.
- United Nations Economic and Social Commission for Western Asia (UNESCWA). 2018. "Experts Discuss Post-Conflict Reconstruction Policies after Political Agreement in Syria." Press release, August 7, 2018. <https://archive.unescwa.org/news/syrian-experts-discuss-post-conflict-reconstruction-policies-after-political-agreement-syria>.
- United Nations Economic and Social Commission for Western Asia (UNESCWA). 2020. *Syria at War: Eight Years On*. Beirut: United Nations. <https://www.unescwa.org/sites/default/files/pubs/pdf/syria-at-war-report-en.pdf>.
- UN-Habitat. 2014a. *City Profile: Aleppo – Multi Sector Assessment*. UN-Habitat. https://unhabitat.org/sites/default/files/documents/2019-05/aleppo_city_profile.pdf
- UN-Habitat. 2014b. *City Profile: Homs – Multi Sector Assessment*. UN-Habitat. <https://unhabitat.org/sites/default/files/download-manager-files/Homs%20RCP.pdf>
- UN-Habitat. 2014c. *City Profile: Dara'a – Multi Sector Assessment*. UN-Habitat. <https://unhabitat.org/sites/default/files/download-manager-files/Daraa%20CP.pdf>
- UNHCR (United Nations High Commissioner for Refugees). 2025. "Syria Refugee Crisis Explained." March 13, 2025. <https://www.unrefugees.org/news/syria-refugee-crisis-explained/#Whatis-thecurrentsituationinSyria>
- World Bank. 2010. *Damage, Loss, and Needs Assessment Guidance Notes*. <https://www.gfdrr.org/en/damage-loss-and-needs-assessment-tools-and-methodology>

World Bank. 2017a. *Syria Damage Assessment of Selected Cities: Aleppo, Hama, Idlib – Phase III*. Washington, DC: World Bank Group. <https://documents1.worldbank.org/curated/en/530541512657033401/pdf/121943-WP-P161647-PUBLIC-Syria-Damage-Assessment.pdf>

World Bank. 2017b. *The Toll of War: The Economic and Social Consequences of the Conflict in Syria*. Washington, DC: World Bank Group. <https://www.worldbank.org/en/country/syria/publication/the-toll-of-war-the-economic-and-social-consequences-of-the-conflict-in-syria>

World Bank. 2023a. *Global Rapid Post-Disaster Damage Estimation (GRADE) Report: Mw 7.8 Türkiye-Syria Earthquake – Assessment of the Impact on Syria (Results as of February 20, 2023)*. Washington, DC: World Bank Group. <https://openknowledge.worldbank.org/handle/10986/39529>

World Bank. 2023b. *Syria Earthquake 2023: Rapid Damage and Needs Assessment (RDNA)*. World Bank Group. <https://documents1.worldbank.org/curated/en/099093003162314369/pdf/P1721710e2b4a60b40a5940f0793f8a0d24.pdf>

World Bank. 2025a. *A Review of the Global Rapid Post Disaster Damage Estimation Assessments: The Frontier in Rapid Post-Disaster Damage Estimations for Developing Countries 2015-2024*. Washington, DC: World Bank Group. <https://openknowledge.worldbank.org/entities/publication/1180a3f4-b5bf-41fa-b601-11dfa7bdae3>

World Bank. 2025b. *Syria Macro-Fiscal Assessment (English)*. Washington, D.C. : World Bank Group. <http://documents.worldbank.org/curated/en/099844407042516353>

World Bank, and European Union. 2022. *Syria Joint Damage Assessment of Selected Cities*. <https://documents1.worldbank.org/curated/en/099173502272397116/pdf/P172171027e-9070310b52e09ce3ad7393cc.pdf>



GLOSSARY

Physical Damage refers to total or partial destruction of physical assets such as buildings, infrastructure, equipment, inventories, and other tangible property, usually resulting from disasters, conflicts, or other disruptive events (ECLAC, 2014). In this report, damage specifically pertains to select asset types (residential, non-residential, and infrastructure) affected by the Syrian conflict between 2011 and 2024.

Consumer Price Index (CPI) measures changes over time in prices of a representative basket of goods and services typically consumed by households, serving as a primary indicator of inflation and cost-of-living changes (IMF, 2020).

Gross Domestic Product (GDP) Losses measure the shortfall in economic output compared to pre-disaster or pre-conflict baseline levels, reflecting broader macroeconomic impacts (OECD, 2009).

Gross Capital Stock (GCS) is the value of all fixed assets still in use, valued at the prices of new capital goods of the same type, regardless of their age or condition, without deductions for depreciation or obsolescence (OECD, 2009).

Gross Capital Stock (GCS) Losses represent the reduction in the value of physical assets due to destruction, damage, or deterioration. They are typically calculated based on the depreciated value or book value of assets at the time of damage, reflecting their age and pre-existing conditions rather than full current replacement values (OECD, 2009).

Replacement Costs reflect the expense required to restore damaged or destroyed assets to their pre-conflict condition, accounting for current market prices and inflation adjustments. Replacement costs exclude broader economic impacts such as business interruptions or lost productivity.

Reconstruction Costs refer to the financial resources required to rebuild or repair physical assets to meet current standards, often incorporating improvements in quality, safety, and resilience standards above their pre-damage state. Unlike **replacement costs**, which reflect the cost to replicate damaged assets exactly, reconstruction costs incorporate build-back-better principles and additional factors such as debris removal, demolition, site preparation, and regulatory compliance (World Bank, 2010). Reconstruction costs exclude broader economic impacts such as business interruptions or lost productivity. They differ from recovery needs as the latter encompass service delivery restoration as well as a broader range of recovery priorities, including social, institutional, and economic interventions beyond reconstruction.

Unit Cost of Construction (UCC) refers to the average cost incurred per unit of measure (such as per square meter or square foot) to construct or rebuild physical assets, including material, labor, equipment, contractor overheads, and associated indirect costs, typically calculated based on standard specifications or local market conditions (World Bank, 2010).



ANNEXES

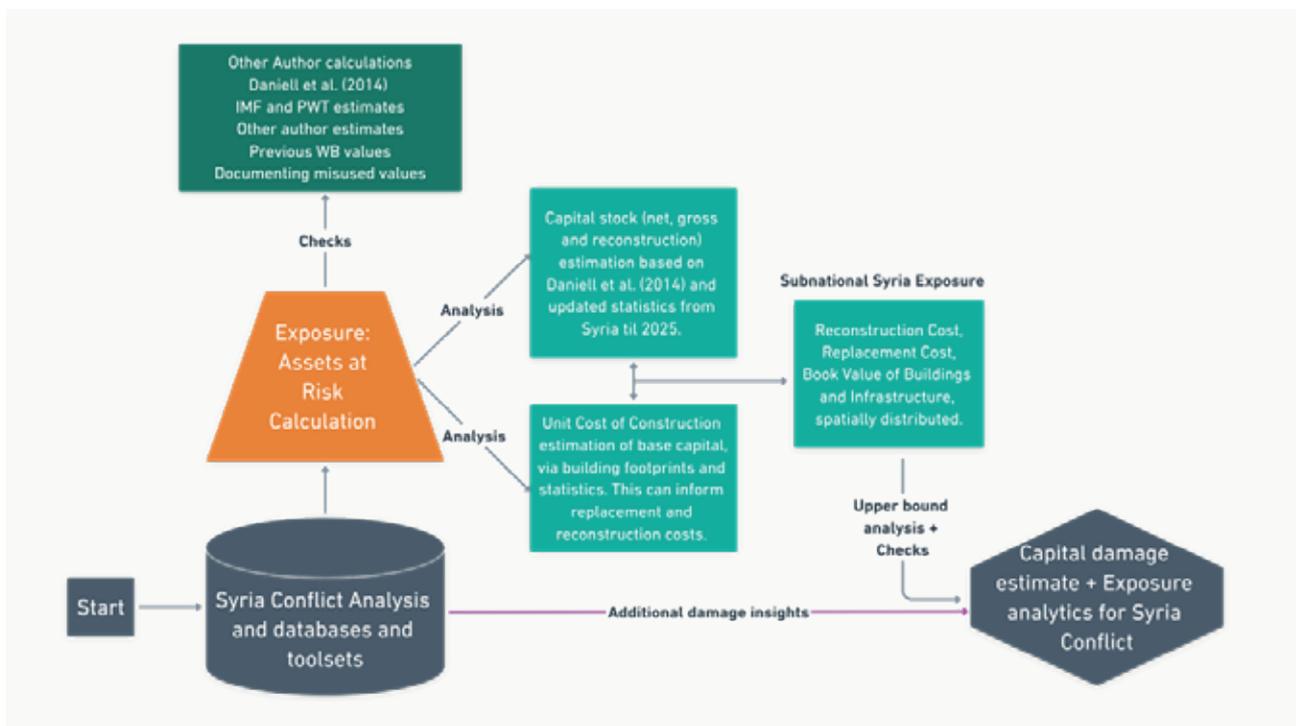
Annex 1: Methodology

This Annex details the methodology and data sources used for estimating damage and reconstruction costs from the Syrian conflict across all 14 governorates, covering the period from March 2011 through December 2024. It comprises three main sections: (1) Methodology for Estimating Capital Stock (Exposure); (2) Methodology for Estimating Damage; and (3) Methodology for Estimating Reconstruction Costs.

BASELINE EXPOSURE METHODOLOGY

A cornerstone of estimating damage and reconstruction costs is the integration of a detailed **baseline exposure model**,⁴ which in this context represents the pre-conflict baseline of assets across Syria. This dataset includes an inventory of physical assets such as buildings (housing and non-residential structures), infrastructure systems, and other economic assets, along with their **replacement values**. The exposure model used for this assessment is based on the methodology developed by Daniell (2014) and Gunasekera et al. (2015). As shown in Figure 7 this involves a combination of a top-down approach using capital investment data and a bottom-up approach incorporating unit costs of construction and built environment statistics to produce a robust estimate of the capital stock. The methods used for estimating exposure in residential and non-residential buildings, as well as infrastructure, are described in the following two sub-sections. Hereafter, the term “baseline exposure” is referred to simply as “exposure”.

Figure 7. Baseline Exposure Methodology Flowchart Used to Create the Exposure for Damage Analysis



Source: Assessment team.

Note: PWT = Penn World Table; WB = World Bank.

4 The term “baseline exposure” is commonly used to express the existing extent and typology of the exposed assets for which a scientific enquiry is to be carried out, i.e., for this case the damage assessment.

RESIDENTIAL AND NON-RESIDENTIAL BUILDINGS EXPOSURE METHODOLOGY

For the bottom-up modelling, the WSF[®] 3D dataset (Esch et al., 2022) was used. This provides built-up areas and average building heights (in meters) at a 90 meter (m) cell resolution. The built surface areas were distributed into residential and non-residential categories within each cell based on a merged dataset of building footprints in vector format – e.g., 3D-GloBFP (Che et al., 2024) and Source Cooperative (2024) – derived from machine learning and artificial intelligence sources available for Syria. These footprints incorporate data from Google Open Buildings, Microsoft AI, OSM, and others.

To derive the existing floor areas in each 90 m cell raster, an inter-story height of 2.8 m was assumed to estimate the number of floors. Based on these floor counts, the total floor area was calculated and then categorized into residential and non-residential groups. These were further grouped into three building height classes: 1–2, 3–7, and 8 or more stories.

Because WSF-3D does not differentiate between residential and non-residential buildings, the probabilities of building occupancy class were applied based on footprint size to characterize residential and non-residential floor areas. The classification was as follows:

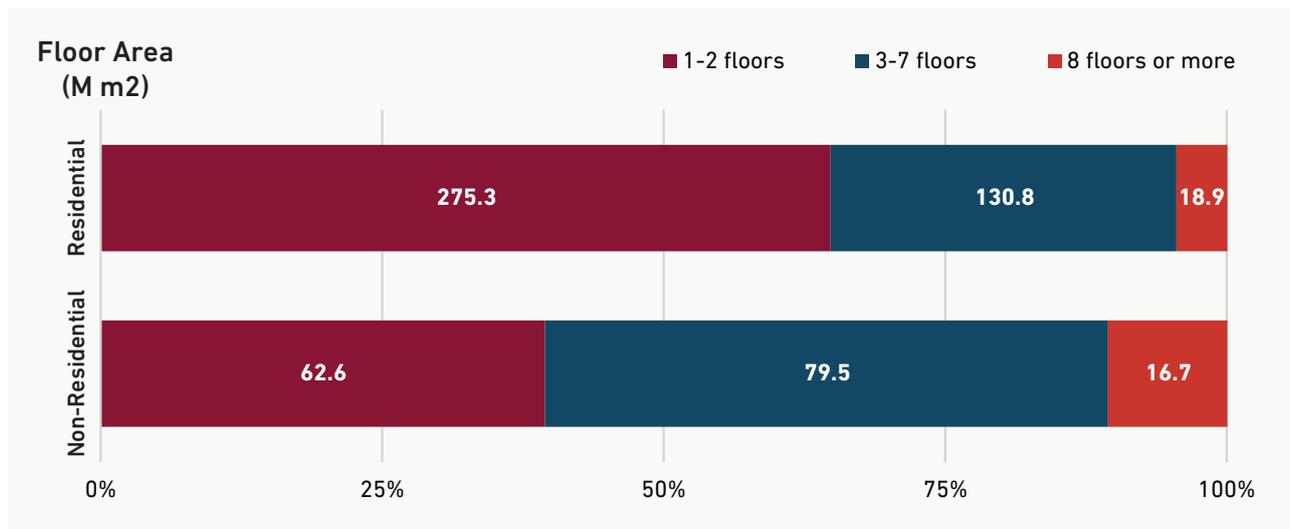
- >1,000 m²: 90% likely non-residential
- 500–1,000 m²: 55% likely non-residential
- 200–500 m²: 15% likely non-residential
- <200 m²: 95% likely residential

This classification is based on empirical comparisons between known building uses and footprint sizes in selected Syrian urban and rural settings, drawing from datasets used in the Syria earthquake GRADE assessment (World Bank, 2023a). While the base probabilities reflect general patterns, adjustments were made at the governorate level where local occupancy data were available to better reflect regional building typologies.

To improve the accuracy of the floor area estimates, governorate-level modifiers were applied. These adjustments reduced the initially estimated total built floor area from 843.6 million m² to 583.8 million m². Of this adjusted total, 425.0 million m² are allocated as residential floor area (RFA) and 158.8 million m² as non-residential floor area (NRFA), indicating that approximately 73 percent of the total floor area is residential.

When broken down by height class, 65 percent and 31 percent of the residential floor area fall within the 1–2 and 3–7 story categories, respectively. For non-residential buildings, 39 percent of the floor area is in the 1–2 story category, while 50 percent is in the 3–7 story category.

Figure 8. Residential and Non-Residential Floor Areas by Number of Floors Class (millions of m²)



Source: Assessment team.

For the classification of RFA and NRFA by structural typology, the model refers to the Global Earthquake Model’s Syria exposure dataset (GEM, 2023) corresponding floor area distributions taken at the governorate level as well as the work of Dabbeek and Silva (2020) that provided a good baseline for the Syrian residential building typologies. Additional insights were drawn from the 2004 Syrian census, conflict damage assessments, and the work of Daniell (2014). There are 27 residential and 26 non-residential structural types, which altogether result in 53 structural typologies, including the three height classes.

In terms of UCCs the proposed weighted averages for residential and non-residential buildings are US\$256/m² and US\$332/m², respectively, ranging between US\$133/m² for residential unreinforced earthen masonry and US\$453/m² for non-residential structures with eight floors or more of reinforced concrete with infilled frame or with precast concrete and shear wall (see Annex 3 for descriptions of case studies in Syria underpinning these proposed UCC weighted averages). These values reflect the deteriorated state-of-maintenance of Syria’s aging housing and non-residential stock. The average age of Syria’s housing stock during the last Syria census of population and housing in 2004 (3.37 million housing units with average floor area of 109 m²) was 20.8 years (SCBS, n.d.) and is expected to have increased considerably since then due to the enormous disruption during the conflict and beyond (March 2011 to December 31, 2024) that led to diminished building construction activity. Indicative of this are data on building permit licenses in 2011 and 2014 provided by the Syrian Central Bureau of Statistics (SCBS). In 2011 there were 15,211 licenses for residential buildings (SCBS, 2012a) containing 52,285 housing units with a total floor area of 6.6 million m², but in 2014 there were only 1,173 licenses containing 6,605 housing units (SCBS, 2015) with a total floor area of 832,000 m², i.e., a reduction of 87 percent. Similarly, the licenses for commercial, industrial, and other non-residential buildings were 1,775 (989,000 m²) in 2011, falling to 282 in 2014 (286,700 m²), i.e., a reduction of 71 percent. An additional discussion on unit costs of construction for buildings can be seen in Annex 3.

INFRASTRUCTURE EXPOSURE METHODOLOGY

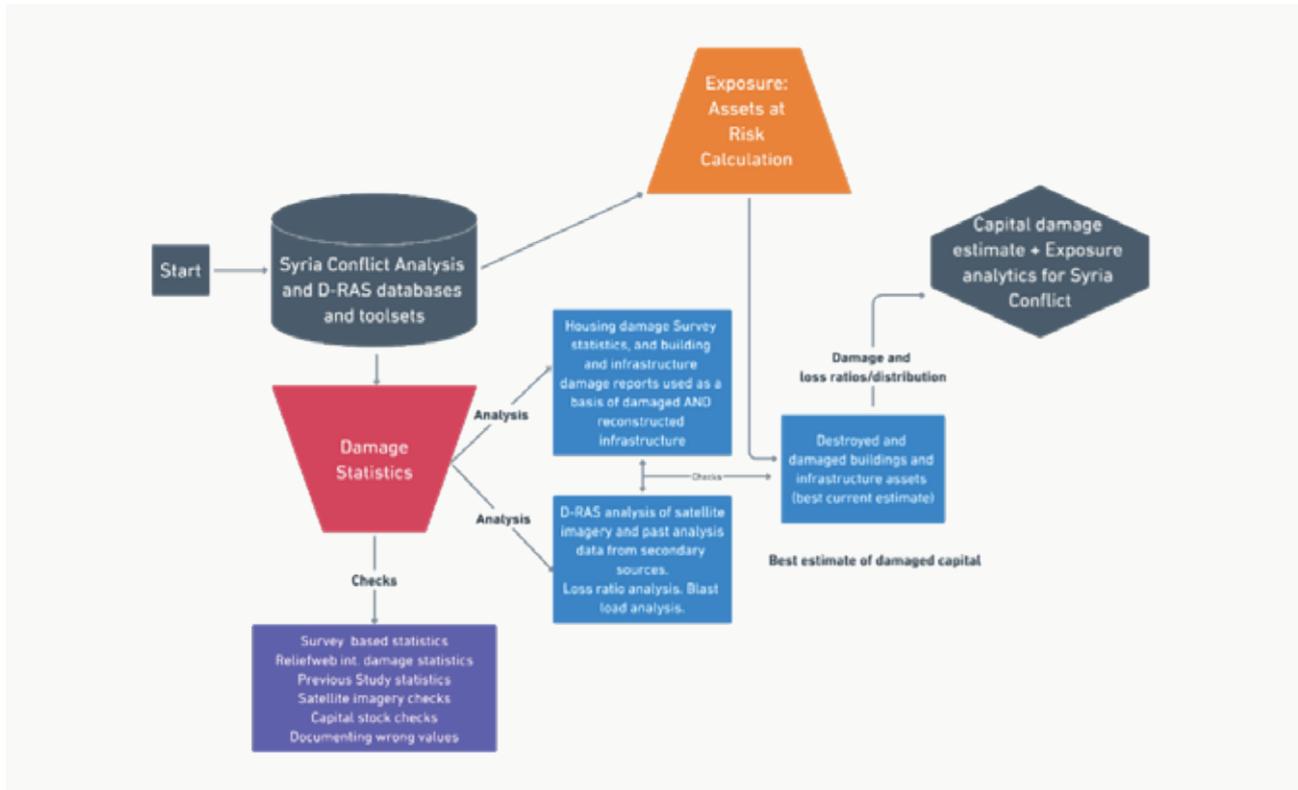
The infrastructure exposure assessment aims to provide a detailed understanding of the state of critical infrastructure across Syria, which is essential for estimating damage and reconstruction costs. This assessment is based on a comprehensive set of data sources and methodologies:

- **Data sources:** the assessment utilizes databases including OSM, UNOCHA datasets, various government-provided data, and global infrastructure databases, covering critical networks such as roads, energy, water, and ICT infrastructure. Contextual data from yearbooks and conflict databases further supplemented this foundation.
- **Cost data collection:** to enhance accuracy, additional data were gathered on costs associated with roads, railroads, airports, ports, power generation and distribution facilities, medium voltage and low voltage electrical networks, water networks, water supply systems, irrigation facilities, and telecommunications infrastructure. These data were primarily sourced from local ministries, non-governmental organizations (NGOs), and international organizations involved in infrastructure-related projects within Syria.
- **Unit costs applied in the assessment** were adapted from project construction data and reports accounting for a greater level of data and price information than was used for the Syria earthquake analysis (World Bank, 2023b). The costs are complemented by guides and records from recent repair, replacement, and reconstruction projects conducted in Syria. These unit costs provided an updated and realistic valuation framework reflective of current construction and reconstruction practices in Syria.
- **Verification and adjustment:** the methodology includes rigorous verification processes where damage estimates from local and international organizations (e.g., the United Nations Satellite Centre, UNOSAT) are reviewed. Adjustments are made to account for infrastructure assets that were already derelict or abandoned prior to conflict-related damage, ensuring that assessments accurately reflect only the incremental damage directly attributable to the conflict. The assessment also considers previously reconstructed portions of infrastructure to prevent double counting, enhancing the precision of overall exposure estimates.

DAMAGE ESTIMATION METHODOLOGY

The damage assessment for Syria utilizes the World Bank's GRADE methodology, adapted to address the complexities of a prolonged conflict environment. This approach systematically integrates diverse sources of damage data from multiple studies and reports over the 13-year conflict period. It combines information from satellite imagery analyses, humanitarian assessment reports, local surveys, and media documentation into a unified framework. The methodology follows a structured, stepwise process that begins with data collection and culminates in consolidated damage and cost estimates. The flowchart in Figure 9 captures the key steps: assembling and harmonizing damage data from all available sources; analyzing the geographic distribution of conflict events and corresponding damage; overlaying this information onto an exposure model of assets; classifying damage severity and assigning repair/replacement values; and finally computing the reconstruction cost totals. Throughout these steps, standard definitions are applied to ensure clarity – for example, “damage” is defined (in line with PDNA conventions) as the partial or total physical destruction of assets in affected areas. Each step of the process is conducted in a remote, desk-based manner consistent with GRADE's rapid assessment ethos, while also incorporating relevant data to adapt to Syria's protracted crisis context (see Annex 7). This methodological framework provides a transparent and repeatable approach for quantifying conflict-related damage, as described in detail below.

Figure 9. Damage Estimation Methodology Flowchart



Source: Assessment team.

DATA COLLECTION AND HARMONIZATION

The damage estimation methodology (Figure 9) for Syria integrates diverse damage reports across multiple time periods, combining them with a detailed exposure database. This database provides a comprehensive baseline of residential, non-residential, and infrastructure stock values in affected locations. Damage estimates are calculated by applying damage ratios drawn from a range of national and city-level damage assessments, including those from UNESCWA (2018; 2020), World Bank (2017a), World Bank and European Union (2022), UN-Habitat (2014), SCPR (2023), and UNDP (2025).

The first step involves gathering a wide array of damage data from the entire 2011–2024 conflict period. Multiple assessments and reports – including United Nations (UN) agency damage analyses, NGO survey reports, academic studies, government records, and open-source databases – are used. Examples include satellite-derived damage maps (e.g., UNOSAT analyses of city destruction), joint needs assessment reports for key cities, and sector-specific damage tallies (for housing, health facilities, schools, roads, etc.) from humanitarian clusters. Each source is scrutinized for credibility, geographic and temporal coverage, and overlap with others. Given the variation in data quality and formats, harmonization is crucial. All damage data are standardized into a common database structure with consistent definitions (e.g., what constitutes a “destroyed” building) and units. Where sources overlap in coverage, double counting is eliminated by cross-referencing location and timestamp. The process leverages the GRADE approach, using multiple information feeds in parallel to compile all reported observations into a comprehensive picture. Reports from different years and regions are aligned on a timeline and map to ensure they refer to distinct events or damage. Data is converted to common measures, for instance, area of floor space or number of units, as needed. A final harmonized damage dataset emerges, representing the best estimate of physical damage in each location and year of the conflict, with each entry tagged by location, sector, and damage level/class.

CONFLICT LOCATION ANALYSIS

In parallel, the methodology analyzes the spatial footprint of conflict to identify where damage would be expected. This involves mapping conflict incidents and intensity across Syria's cities and governorates over 11 years, using sources such as conflict incident databases and security reports. By plotting battles, airstrikes, and other destructive events, the assessment establishes a geographic outline of affected areas. This step serves two purposes: (1) to validate that reported damage data corresponds to known conflict hotspots and timelines; and (2) to flag areas of intense fighting where damage data might be missing or under-reported. For example, if a town was heavily shelled in 2015 but lacks formal damage reports, the methodology highlights this gap so that proxy estimates can be made. The approach is inherently aggregative: rather than examining each building in isolation, damage is analyzed at area level (e.g., neighborhood, city, or district).

This approach was proven effective in similar conflict applications of GRADE – for instance, a conflict-impact GRADE in Ukraine was conducted not at an individual facility level but at a geographic area level using an aggregated approach. Likewise in Syria, damage is aggregated by locality, and within each affected area the degree of damage is assessed using all available evidence (including on-the-ground photographs, local testimony, and media reports when accessible). This area-based analysis allows the team to infer damage patterns even when direct data is sparse, by drawing on knowledge of conflict severity and comparing with areas that have documented damage. The output of this step is a refined map of Syria indicating, for every conflict-affected location, either a recorded damage value or an interpolated estimate where data was absent, ensuring no major affected zone is overlooked.

The conflict location assessment in Syria leveraged the ACLED database, which records conflict events and explosions, alongside Airwars data (2025), which aggregates and analyzes damage reports from local-language media and social media sources dating back to 2014 (see Annex 7). Even with this relatively strong data foundation in location of damage for some of the sectors such as the education sector a detailed sectoral breakdown of damage is not currently feasible.

EXPOSURE DATA AND ASSET BASELINE INTEGRATION

The **exposure model** serves as the foundation for translating physical damage into monetary terms – it provides the total value at risk in each location, against which the observed damage will be measured. This dataset includes an inventory of physical assets such as buildings (housing and non-residential structures), infrastructure systems, and other economic assets, along with their **replacement values**. A key step of the damage estimation methodology is the integration of a detailed **exposure model** with damage ratios derived from the damage assessment from the Syrian conflict.

All costs are standardized to a base year of December 2024 US\$ to account for inflation and currency changes over the decade of conflict. Additionally, by mapping exposure and the compiled damage data together, the methodology checks for consistency. Any discrepancies (for instance, if reports inflated certain figures) are resolved through investigation or by capping losses at 100 percent exposure. The result is a validated exposure database aligned with the conflict's impact areas, enabling accurate calculation of damage percentages and costs.

It is important to emphasize that reconstruction cost estimates for Syria are subject to significant uncertainty due to the nature of the conflict. The security situation remains fluid, with several provinces still not fully under stable governance or complete government control, as of April 2025. This volatility could substantially influence provincial reconstruction costs, potentially increasing expenditure due to further security developments or disruptions caused by political developments.

This assessment for Syria systematically evaluated the impact on assets, including buildings and infrastructure, across various categories such as residential, non-residential, and infrastructure. The assessment involved determining both the value of these assets prior to the conflict and the extent of damage they sustained. Damage is classified as follows:

- **Destroyed or Severely Damaged:** All assets in this damage class are beyond repair and must be demolished and rebuilt entirely to higher standards (in practice a range of standards, from worse built, to significantly better built).
- **Moderate Damage:** Assets in this damage class have sustained moderate damage. It may be more economical to demolish and rebuild some assets, while others could be repaired. The assumption made is that approximately one-third (~33 percent) of these assets require full demolition and reconstruction, while the remaining two-thirds (~66 percent) can be repaired.
- **Slight Damage:** These assets are assumed to require straightforward repairs to restore them to pre-conflict conditions.
- **Minimal Damage:** These assets are assumed to require minimal, basic repairs to restore them to pre-conflict conditions, or assets with no structural damage, but with damage to contents or non-structural elements of the building. These also include assets where materials have been removed over the 11-year period either through looting, or reuse of materials for other purposes.

Due to the inherent uncertainties associated with the different types of infrastructure and the available data, this assessment presents the damage assessment at the aggregate infrastructure level. This approach provides a more robust representation of the damage, given the limitations and uncertainties.

RECONSTRUCTION ESTIMATION METHODOLOGY

The reconstruction cost assessment for Syria uses the damage estimations calculated above to achieve an estimate of how much it will cost to reconstruct and repair damage incurred. It incorporates adjustments for improved construction standards and altered building typologies through cost multipliers, accounts for prior reconstruction efforts by subtracting already rebuilt assets, and employs statistical modeling (beta distributions) to capture the distribution of damage seen on the ground. This approach helps ensure the reconstruction estimates realistically reflect conditions in different locations.

RECONSTRUCTION COST FACTORS AND BUILDING BACK BETTER

Rebuilding a conflict-damaged asset to modern standards will likely cost more than the asset's original value; however, this is not always the case. In a few cases, either better or worse buildings will be built; and in some cases a complete building typology change will occur, for example from a masonry structure to reinforced concrete, or additional height added. To reflect this, the analysis applies **reconstruction cost multipliers** to the baseline **UCC** for different asset types. These multipliers effectively adjust the replacement cost of assets to account for the costs of demolition, and the expected average of the newly reconstructed building stock – improved construction standards, updated building codes, and the build-back-better approach (i.e., using better technology and quality during reconstruction). Based on analysis of Syria's context and historical post-conflict data, the following cost multipliers are determined for each asset category, summarized in Table 8.

Table 8. Cost Multipliers Used for Different Asset Categories.

Asset Category	Reconstruction Cost Multiplier (× Baseline UCC)
Residential	2.1×
Non-Residential	2.3×
Infrastructure	2.1-3.3× (varies by asset type)

Source: Assessment team.

These factors substantially increase the nominal costs, recognizing that a rebuilt structure will incorporate higher standards (e.g., earthquake-resistant design, improved materials, etc.) and additional work such as rubble clearance. In practical terms, a housing reconstruction at 2.1× the unit cost corresponds to roughly US\$600/m², and public or commercial buildings at 2.3× to around US\$800/m² as an average across all building types, given the unit costs used. Such values are in line with the expectation that many projects will be executed by larger contractors to international standards. They also take into account costs associated with site inspections, hazardous material removal (including unexploded ordnances and landmines), and clearing before preparation, which has significant costs associated with it.

Historical data provide valuable context: the SCBS recorded average construction costs in 2011 ranging from US\$235 to US\$295/m², significantly reduced by currency devaluation in 2014 (US\$203 to US\$266/m²). Information on the unit cost of construction via the SCBS is not available for post-2014.

During the conflict period, reconstruction efforts varied widely, ranging from government-led initiatives to international humanitarian efforts, highlighting significant discrepancies in unit costs (from US\$65/m² to over US\$2,100/m²). High-end projects, such as the urban rebuilding in Homs City, involved extensive infrastructure, site preparation, and essential services integration, leading to UCCs of over US\$2,130/m². Conversely, humanitarian projects, notably by charities such as Muslim Hands and Humanity for Action, maintained minimal UCCs of approximately US\$65/m² for basic housing. Post-earthquake government projects further illustrate variability, with UCCs initially estimated between US\$740 to US\$1,035/m², dramatically reducing to approximately US\$145 to US\$200/m² following significant currency fluctuations.

The chosen multipliers (2.1–2.3× the baseline UCC) therefore represent a balanced, conservative estimate intended for broad national planning purposes, accommodating quality enhancements and inflation without adopting extremes observed historically and likely incorporating some of the outliers on either end (see Annex 3 for a review of case studies for estimating the cost factors). However, the observed range of UCCs for previous projects underscores the complexities and inherent uncertainties in accurately forecasting reconstruction costs.

ACCOUNTING FOR PRIOR RECONSTRUCTION EFFORTS

An important adjustment in the Syria methodology is accounting for repairs and rebuilding that have already occurred during the protracted conflict. Some governorates have seen significant reconstruction of damaged assets (through government projects, international aid, or local communities) even before the conflict fully ended. To avoid overestimations, the model applies a “reconstruction percentage” for each governorate, representing the share of damaged asset value in that region that has *already* been reconstructed (or does not require further funds). In essence, this percentage is a reduction factor: it automatically subtracts a portion of the damage in that governorate on the assumption that this part of the damage has been addressed by prior efforts. Table 9 illustrates the estimated reconstruction percentages by governorate, which were derived by triangulating publicly reported reconstruction statistics, previous national and city-level damage assessments, and local media and social media reports from 2015 to 2024, as detailed in Annex 7.

Table 9. Approximate Share of Damaged Asset Value Already Reconstructed by December 31, 2024

Governorate	Estimated Reconstructed Portion of Damage (percent)
Aleppo	17.5%
Idleb	6.0%
Rif Dimashq	15.0%
Homs	5.0%
Deir-ez-Zor	7.5%
Raqqa	37.5%
Dar'a	11.0%
Hama	5.0%
Damascus	12.5%
Quneitra	5.0%
Al-Hasakeh	5.0%
Lattakia	5.0%
As-Sweida	5.0%
Tartous	27.5%

Source: Assessment team.

These percentages vary widely, reflecting the uneven progress of rebuilding across Syria. For example, Ar-Raqqa has an exceptionally high value (about 37.5 percent), owing to extensive reconstruction efforts after the end of Islamic State of Iraq and Syria (ISIS) control in 2017. Tartous, which was relatively less affected by conflict but has benefited from investment, also shows a high reconstructed share (~27.5 percent). In contrast, many governorates – especially those that remained in conflict or lacked resources – have 5–15 percent or less of their damage addressed so far. The model effectively “credits” these already rebuilt portions by removing them from the remaining needs. As newer information on reconstruction progress becomes available, these percentages can be updated for each governorate. The approach ensures that the remaining reconstruction cost focuses on damage that is truly unmet as of the assessment date.

PROBABILISTIC MODELING FOR MANAGING UNCERTAINTY

There are many sources of uncertainty in the reconstruction cost estimations, and these are dealt with in different ways. For example, since the cost differences between different damage classes are large (rebuilding versus repairing), the damage classification translates into uncertainty in total costs. If the threshold for a certain damage class ends up higher or lower, the total reconstruction cost changes. This classification is undertaken by engineers and requires a holistic approach; however, in practice there are no complete datasets for governorates of these classifications yet. Probabilistic modeling (using a beta distribution) is therefore used to represent and fit the observed distribution of damage classifications around a central damage value where data on specific damage percentages was insufficient.

Throughout the process, sensitivity checks are performed to ensure the assumptions align with empirical evidence. The preliminary results have been cross-checked against available damage surveys, historical reconstruction reports, and expert judgment from Syria-specific engineers and economists. This peer review confirmed that the spatial distribution of damage and the resulting cost estimates are reasonable and in line with observed trends. Any outliers (such as governorates with very high or low costs) were scrutinized, and it was noted that areas with the greatest uncertainty (for example, Quneitrah or Hasakeh, which had sparse data) may warrant special attention or data collection in future updates.

The result of this process is a distribution of total reconstruction cost estimates. From this distribution, a central value derived from the damage data is chosen as the best estimate – effectively the median expected reconstruction cost given the data and assumptions. In communicating results, the assessment team opts to use the term “best estimate” for this central value, accompanied by a plausible lower bound and upper bound, rather than just presenting a single number. This follows a two-tier reporting style commonly used in disaster risk assessments: for example, providing an expected outcome along with optimistic and conservative scenarios. By using *best estimate* (instead of technical terms such as “median”), the methodology highlights that this is the most likely value based on current information, while still acknowledging uncertainty. Decision-makers are thereby informed that actual costs could be higher or lower, and the range attached to the best estimate gives an indication of that uncertainty interval.



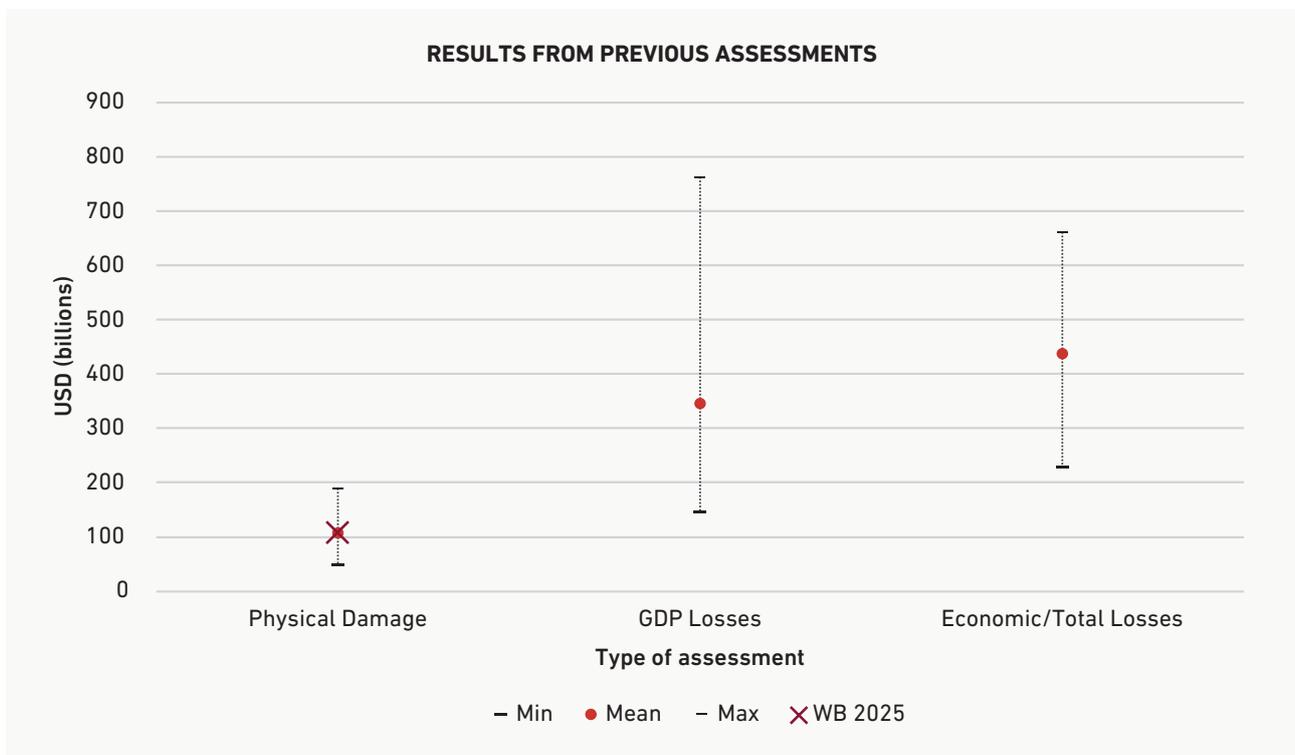
Annex 2: Review of Previous Assessments

Despite methodological differences and uncertainties, all evaluations consistently highlight the massive scale of destruction and economic disruption, reflecting not just infrastructural damage but deep socioeconomic fragmentation and profound human capital depletion.

NATIONAL DAMAGE ESTIMATES

The estimate of physical damage between 2011 and 2024 to capital stock presented in this report (US\$108 billion)⁵ aligns well with previous national-level assessments of physical damage alone (Figure 10). These range from approximately US\$58 billion (SCPR, 2020) to US\$190 billion (Mroue & Chehayeb, 2023) adjusted to December 2024 values. A comprehensive review of these studies is presented to provide an understanding and grounding of previous work and existing datasets ahead of this report's analysis, highlighting inherent variabilities due to differences in scope, assessment timelines relative to the conflict, geographic coverage, sectoral focus, methodological approaches, and inflation adjustments. Despite their differences, all assessments underscore the generational scale of Syria's devastation, encompassing not only physical infrastructure but also extensive economic collapse, social fragmentation, and significant human capital depletion.

Figure 10. Comparison of Best Estimate for Physical Damage and Estimates from Previous Studies



Source: Assessment team.

⁵ Adjusted to December 2024 values using CPI and exchange-rate adjustments.

NATIONAL RECONSTRUCTION ESTIMATES

In November 2017, UN Special Envoy Staffan de Mistura reported to the UN Security Council that rebuilding Syria would require at least US\$250 billion, mainly reflecting physical reconstruction – approximately four times Syria’s pre-conflict GDP (Humud and Blanchard, 2019). Subsequently, UNESCWA (2018) raised this figure considerably, reporting total economic damage at over US\$388 billion in 2010 constant prices, including US\$120 billion for physical infrastructure alone.

UNESCWA updated the total economic cost to US\$442.2 billion in January 2020 (UNESCWA, 2020), accounting for additional damage between 2018 and 2020. This revision estimated US\$117.7 billion in physical damage and US\$324.5 billion in GDP losses, based on a counterfactual annual GDP growth scenario of 5 percent. Physical damage included losses across key sectors, such as housing, manufacturing, transport, electricity, and health. Detailed sectoral analyses identified housing, energy, and security infrastructure as the most severely impacted sectors, concentrated primarily in Aleppo and Rif Dimashq.

Building on UNESCWA’s 2020 assessment, a UNDP report (2025) refined the cost of conflict in Syria by incorporating additional destruction from the 2023 earthquake and localized battles. It estimated that by the end of 2024 physical capital damage stood at approximately US\$123.3 billion, while lost GDP (calculated using the same counterfactual scenario of 5 percent annual growth) was US\$799.4 billion, pushing the overall economic cost to nearly US\$923 billion (all in 2010 constant price). In addition, the World Bank’s 2017 report, “The Toll of War,” adopted a different methodological approach, employing econometric techniques to establish a data-driven, comparative counterfactual scenario (World Bank, 2017b).

Table 10. Comparative Overview of Reconstruction Cost Estimates (original and inflation-adjusted to December 2024 values)

Source (Year)	Timeframe of damage assessed	Constant Price (year)	Economic/ Total Losses	GDP Losses	Physical Losses	Economic/ Total Losses	GDP Losses	Physical Losses
			Original Estimate			Inflation-adjusted (Dec 2024)		
US\$ billions								
SCPR (2015)	2011–2015	2010	255	165	54.3	229	148	49
SCPR (2020)	2011–2019	2000	530	421	65	477	379	58
UNESCWA (2018)	2011–2017	2010	388	268	120	370	256	114
UNESCWA (2020)	2011–2018	2010	442	324	118	422	309	112
UNDP (2025)	2011–2024 (incl. earthquake)	2010		800	123		763	117
World Bank (2017c)	2011–2016	2010		226			216	
Humud & Blanchard (2019)	2011–2017	2017	≥ 250			472		
TASS (2024)	2011–2024	2024	250–400			294–470		
Salame (2021)	2011–2021	2021	230–370			325–523		
Seifan, in Mroue & Chehayeb (2023)	2011–2023	2023	400		150	506		190

Several additional reconstruction estimates have been reported by international actors and economists, reported in the media rather than the detailed analytical studies reviewed above. For instance, a 2024 TASS (Russian state news agency) report summarized that “by different estimates” Syria’s reconstruction would require US\$250–US\$400 billion (TASS, 2024) – figures also echoed by the UN and European analysts (Salame, 2021). The European Union (EU) in 2021 also treated US\$250–US\$400 billion as a baseline; EU officials in donor discussions cited estimates of €230–€370 billion; the Syrian economist Samir Seifan detailed physical conflict damage at US\$120–US\$150 billion, noting that total economic recovery could exceed US\$400 billion once lost growth and missed opportunities are factored in (Mroue and Chehayeb, 2023). In order to properly compare existing estimates, careful consideration is required to convert historical estimates to historical damage estimates to December 2024 values, given the significant inflationary pressures and complex exchange rate dynamics in Syria. Results are summarized comprehensively in Table 10, which presents both original and inflation-adjusted values.

CITY-SPECIFIC DAMAGE ESTIMATES

A damage assessment was conducted by the World Bank (2017a) for six Syrian cities (not including Damascus) using satellite imagery: it explored damage to the housing, education, health, transport, energy, and WASH sectors. The assessment primarily measured damage physical capital stock and did not include impacts to broader economic flow disruptions or GDP losses. Two timeframes for assessment were used: 2011 to February 2017 for Aleppo, Hama, and Idlib (World Bank, 2017a); 2011 to March 2016 for Dara’a, Latakia, and Douma (World Bank, 2017b). The estimated damage range for Aleppo, Hama, and Idlib was from US\$7.78 billion US\$9.44 billion, while for Dara’a, Latakia, and Douma estimated damage ranges between US\$1.37 billion and US\$1.67 billion. Overall, the total damage for the six cities amounted to between US\$9.15 billion and US\$11.10 billion, with a most likely figure of US\$10.1 billion. The results were calculated using pre-crisis unit replacement costs, reflecting historical replacement costs rather than the constant prices of a specific base year; however, the report does not specifically reference a particular constant price year.

More recently, the 2022 Syria Joint Damage Assessment, conducted by the World Bank and the EU, expanded the scope to 14 cities and estimated physical damage at US\$8.7–11.4 billion, with housing accounting for 50–65 percent of urban destruction costs (World Bank and EU, 2022). A key takeaway from these analyses is that housing typically comprises the largest share of total damage in urban areas, emphasizing the massive need for residential rebuilding (World Bank and EU, 2022). Additionally, as the conflict continues, the economic costs become more persistent as damage spreads, human capital erodes, and missed investments compound the losses (World Bank, 2017b).

Table 11. Comparative Overview of Reconstruction Cost Estimates for Cities in Syria

Source (Year)	Timeframe of Damage Assessed	Cities Assessed	Original Estimate in US\$ Billion
WB (2017)	2011–Feb 2017	Aleppo, Hama, Idlib	7.78 – 9.44
WB (2017)	2011–Mar 2016	Dara’a, Latakia, and Douma	1.37 – 1.67
WB & EU (2022)	2011–2021	14 Cities	8.7 – 11.4

THE REPORTED IMPACTS OF THE 2023 EARTHQUAKE

The February 6, 2023, Moment Magnitude (M_w) 7.8 earthquake and subsequent aftershocks added a new layer of destruction to an already fragile Syria, compounding the devastation from years of conflict. The earthquake devastated six governorates, particularly Aleppo and Idlib, which accounted for over 65 percent of total earthquake-related damage. Housing suffered the greatest losses, with 87,000 units affected, while critical infrastructure, including roads, power, water, and hospitals, was heavily damaged.

According to the World Bank's 2023 GRADE report, the direct physical damage to buildings and infrastructure in Syria was about US\$5.1 billion (best estimate), with a possible range from US\$2.7 billion to US\$7.9 billion given uncertainties (World Bank, 2023a). This figure represents the cost to replace the ruined capital stock and repair the damaged capital stock (homes, non-residential buildings, and infrastructure) at current construction prices. By sector, housing accounted for roughly half of the damage (US\$2.5 billion), with commercial/public buildings (US\$1.7 billion) and infrastructure (US\$0.9 billion) comprising the rest. Geographically, the Aleppo and Idlib governorates were hardest hit – about US\$2.3 billion in Aleppo and US\$1.9 billion in Idlib in median damage, together 80 percent of the total (World Bank, 2023a).

The World Bank released a more detailed RDNA focusing on six of the most affected provinces (Aleppo, Idlib, Hama, Latakia, Tartous, Ar-Raqqah) (World Bank, 2023b). The RDNA used on-the-ground assessment methods and found US\$3.7 billion in physical damage and an additional US\$1.5 billion in economic losses (lost output, income, etc.), for a total impact of about US\$5.2 billion. It also estimated that Syria will need approximately US\$7.9 billion for recovery and reconstruction over the next three years to restore what was lost. The RDNA's damage breakdown by sector differed somewhat from GRADE: e.g., housing made up 23.5 percent of the total, while significant damage was also recorded in transport (19.2 percent), environment (16.4 percent), and agriculture (14.9 percent). Notably, the RDNA's US\$5.2 billion overall damage and loss figure aligns closely with GRADE's US\$5.1 billion median damage estimate, giving confidence in the orders of magnitude. An independent analysis by the SCPR later in 2023 provided another perspective. The SCPR estimated the earthquake's total direct economic losses at around US\$5.85 billion. This includes not just physical capital destruction but also the economic impact on output. In SCPR's accounting, about US\$2.23 billion represents the value of destroyed buildings, infrastructure and household assets, and US\$3.62 billion represents losses to GDP (e.g., reduced economic activity). They report that between US\$5.5 billion (minimum) and US\$6.3 billion (maximum) is a plausible range for total direct losses. Despite different methodologies, this overall loss estimate is in the same ballpark as the World Bank assessments. By region, the SCPR found Idlib governorate bore the highest losses (around US\$3.5 billion), followed by Aleppo (US\$1.97 billion), with much smaller totals in Latakia (US\$251 million) and Hama (US\$112 million). The greater Idlib area (especially Harem district) and parts of Aleppo (Afrin, Jabal Sam'an areas) were devastated, accounting for the bulk of destruction (SCPR, 2023).

Annex 3: Case Studies to Determine Cost Factor

According to the SCBS, in 2011 the average construction cost of conventional residential buildings executed by the private or public sector and that of well finished residential buildings executed by the private sector around US\$295/m (SCBS, 2012b), based on the average 2011 Syrian Pound (SYP) to US\$ official exchange rate of SYP 48 per US\$. For 2014 (SCBS, 2015) these unit costs had reduced considerably due to the devaluation of the SYP (average 2014 official exchange rate of SYP 151 per US\$). The official exchange rate between January and March 2025 stood at SYP 13,000 per US\$. Information on the unit cost of construction via the SCBS is not available for post-2014. These historical figures have been used as a baseline to calibrate current reconstruction cost estimates, with adjustments for inflation, exchange rate changes, and updated cost structures observed across different governorates.

Reconstruction activity as well as **new construction** has been ongoing throughout the conflict period across Syria. In November 2023, the then Syrian government's Finance Minister Kenan Yaghi stated that since 2011 the Syrian government spent SYP 380 billion on 11,909 reconstruction projects (The Syria Report, 2023). Other reconstruction projects by NGOs, individuals, or private contractors have also been ongoing. New buildings to house internally displaced persons (IDPs) were also built in their new settling areas, including multi-story apartment buildings such as in the Idlib governorate with UCCs as low as **US\$55/m²** that were subsequently severely damaged or destroyed by the February 2023 earthquake (HLP, 2023a). In the city of Ar-Raqqa, following the end of ISIS control in October 2017, extensive repairs and reconstruction took place with 5,082 buildings reconstructed, 3,109 repaired, and 140 showing reduction in damage as of July 24, 2023 (REACH, 2024). Originally in October 2017, 3,222 buildings had been identified as destroyed, 3,922 as severely damaged and 5,563 moderately damaged (REACH, 2021).

Reconstruction costs vary widely depending on the nature and scale of different projects. In Homs City, a first reconstruction plan, which began in late 2018, focused on three of the city's most destroyed districts – Baba Amr, Sultanieh, and Jobar – and was set to rebuild 465 residential buildings, able to house 75,000 people, at a cost of US\$4 billion (Associated Press, 2018). Assuming household size of five people, this would suggest that around 15,000 housing units would be delivered; and considering an average of 125 m² per housing unit (including communal spaces in the foreseen apartment buildings) it would suggest an average unit reconstruction cost exceeding **US\$2,130/m²**. This cost is likely to include site clearance and preparation, access infrastructure, engineering studies and connections to essential services. Such unit cost of construction is considered exorbitant and is indicative of the uncertainties.

Conversely, in 2020 in the safe zone near the Turkish border, the British charity Muslim Hands started a program to build 50,000 houses for displaced Syrian families that were living in IDP camps near the border. Each house is 38 m² in a single-story concrete block of brick masonry structure covered by a reinforced concrete slab and includes two main rooms, a kitchen, a washroom, and a small yard. The total cost of building each home in early 2021 was £2,000 (equivalent to US\$2,563) (Faruqi, 2021). Around 12,500 homes had been delivered by February 2021. For this case the unit cost of construction is **US\$65/m²**.

Similarly, following the destruction from the February 2023 earthquakes, the British charity Humanity for Action constructed 1,250 new houses for those that had lost their homes. The houses are single-story brick masonry structures covered by a reinforced concrete slab and include two bedrooms, a kitchen, electricity, water and all other utilities. The total cost of building

each home was just £2,500 (equivalent to US\$3,316) (Action for Humanity, n.d.). For this case the unit cost of construction is estimated around **US\$65/m²**, assuming an average house size of 50 m² derived from photo inspections.

In terms of the government's **post-earthquake reconstruction** activities, in June 2023, a General Housing Establishment (GHE) reconstruction project in Aleppo's Al-Maasaraniya neighborhood was announced, consisting of four buildings containing 120 apartments, with each apartment ranging in size between 65 and 90 m², and a total floor area of 10,000 m², at a total estimated cost of SYP 18.6 billion (HLP, 2023b). This is equivalent to a unit cost of construction of US\$740/m², using the exchange rate in June 2023 (SYP 2,510 per US\$). In the same announcement it was also specified that in Al-Haidariya (a large informal housing area of Aleppo) four buildings will be constructed, each consisting of 10 stores with eight apartments per floor, making 320 apartments in total. The total area of these apartments will be 25,600 m² (80 m² per apartment on average), and the total construction cost is estimated at SYP 66.6 billion. Using the same exchange rate, this is equivalent to a UCC of US\$1,035/m², but the total cost would also contain an unspecified number of additional m² for communal spaces (corridors, staircases, etc.). However, five weeks after this announcement the official exchange rate had fallen to SYP 13,000 per US\$, bringing the unit cost of construction down to around **US\$145/m²** and **US\$200/m²** for the Al-Maasaraniya and Al-Haidariya projects, respectively. This example emphasizes the importance of inflation adjustments given the extreme inflation rates experienced in Syria since the start of the conflict.

The **Syrian government's post-earthquake reconstruction support program** has been operated by the National Fund for Earthquake Victims (NFEV) since August 1, 2023, under a three-year plan. According to the Fund's intervention strategy, owners of licensed buildings destroyed by the earthquake can rebuild their homes on the same site, adhering to specific construction standards. The NFEV provides SYP 160 million per destroyed house. The NFEV estimated the **initial cost of building 1 m² in government housing projects at SYP 2.6 million** (excluding costs for infrastructure and engineering studies, which would be determined after project completion), for houses of around 60 m². This is equivalent to a unit cost of construction of **US\$200/m²**, using the official exchange rate of SYP 13,000 per US\$ that was also introduced in August 2023.

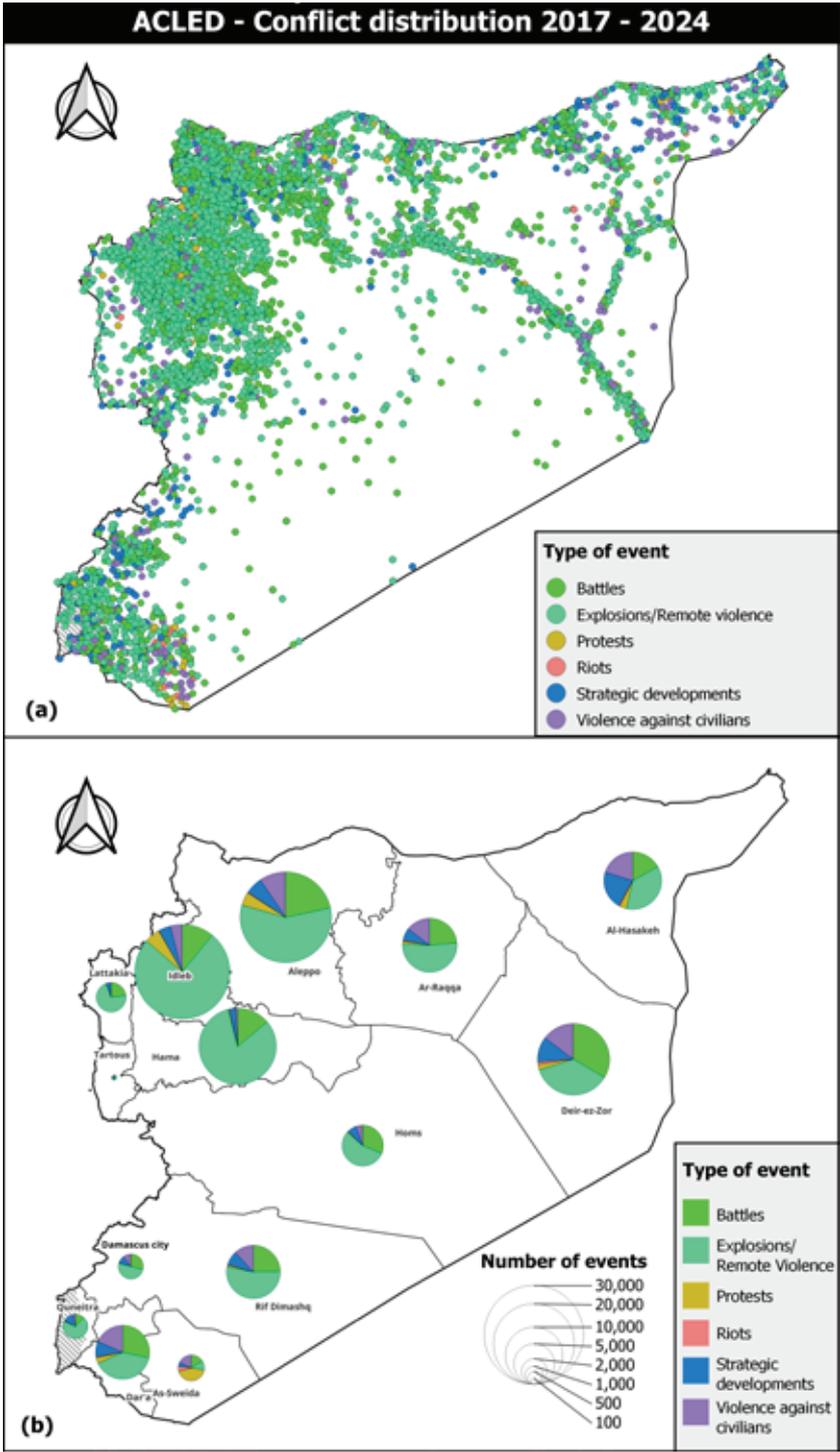
This support is exclusive to urban homeowners; in rural areas, homeowners would receive SYP 40 million for self-reconstruction. For affected individuals who own unlicensed buildings or lived in informal settlements, the NFEV also allocates SYP 40 million per home to be built by the GHE (HLP, 2024b).

In a statement by the NFEV chairman in October 2024, it was communicated that the fund had disbursed SYP 134 billion to 841 successful beneficiaries that received SYP 160 million each (HLP, 2024a). This is equivalent to US\$12,308 per successful applicant to reconstruct a housing unit of about 61 m² using the foreseen unit cost of the NFEV (SYP 2.6 million or US\$200 per m²). In addition, another SYP 22 billion was disbursed to 545 successful beneficiaries that used to live in an unlicensed building, receiving SYP 40 million each for houses to be constructed by the GHE.

The GHE is also implementing government housing reconstruction projects for earthquake victims in Aleppo governorate with a budget of SYP 85.2 billion for 440 housing units, i.e., circa **US\$15,000 per housing unit**, and in Latakia governorate with a budget of SYP 60 billion for 320 housing units, i.e., circa **US\$14,500 per housing unit** (HLP, 2024b).

Annex 4: Maps of Distribution of Conflict

Figure 11. Maps of Conflict Distribution Data



Annex 5: Key Damage Estimate Maps by Sector

Figure 12. Maps of Estimated Residential Sector Physical Damage at Governorate Level (a) in US\$ billion and (b) as % of Total Exposed Value (replacement capital stock for residential sector)

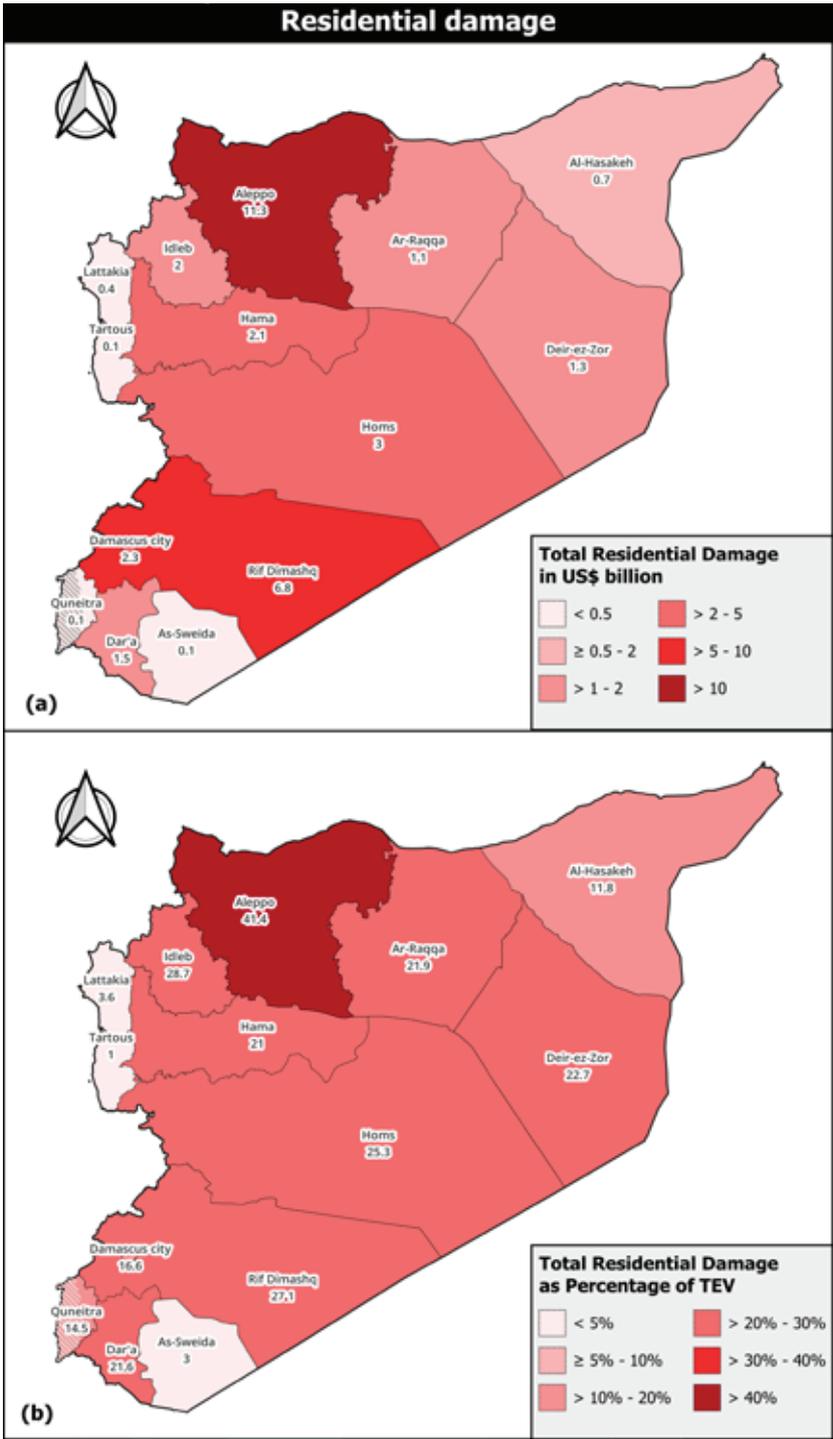


Figure 13. Maps of Estimated Non-Residential Sector Physical Damage at Governorate Level (a) in US\$ billion and (b) as % of Total Exposed Value (replacement capital stock for non-residential sector)

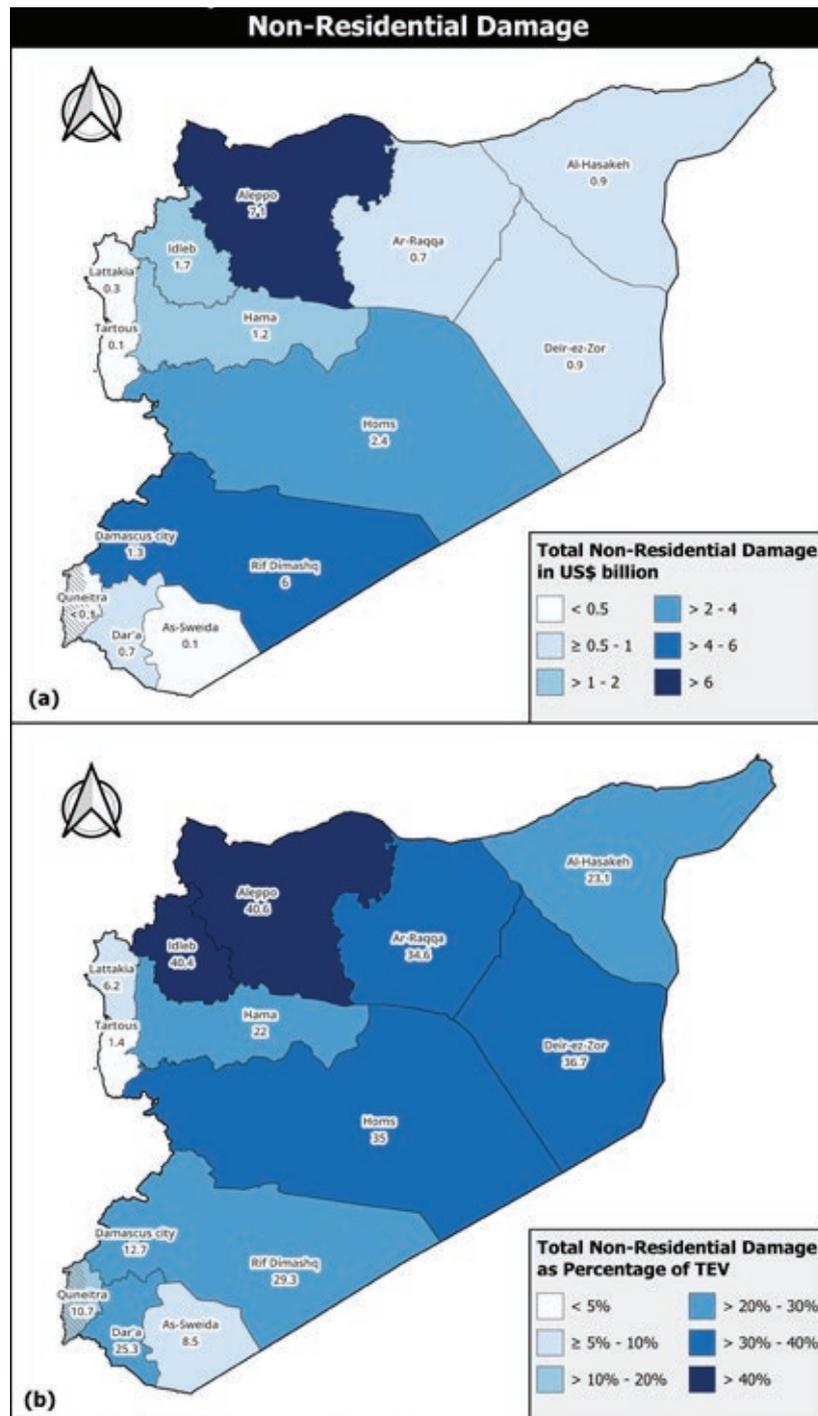
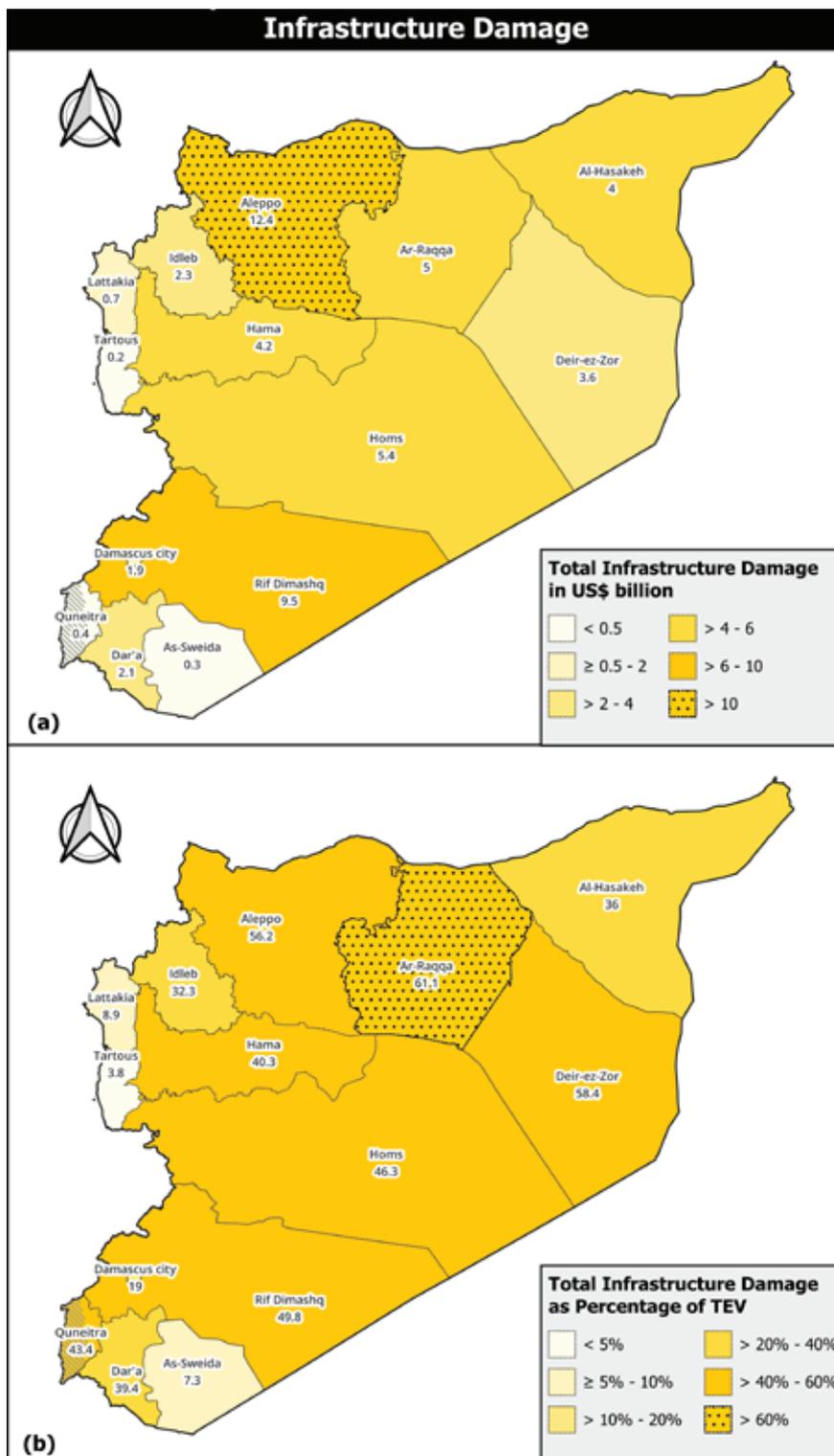


Figure 14. Maps of Estimated Infrastructure Sector Physical Damage at Governorate Level (a) in US\$ billion and (b) as % of Total Exposed Value (replacement capital stock for infrastructure sector)



Annex 6: Key Reconstruction Estimates Maps by Sector

Figure 15. Map of Estimated Residential Reconstruction Cost at Governorate Level

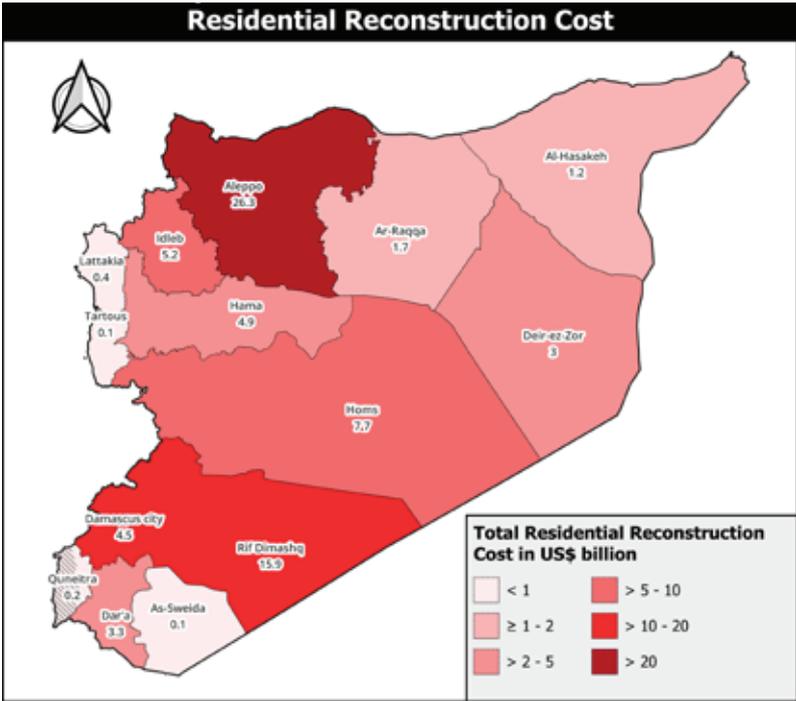


Figure 16. Map of Estimated Non-Residential Reconstruction Cost at Governorate Level

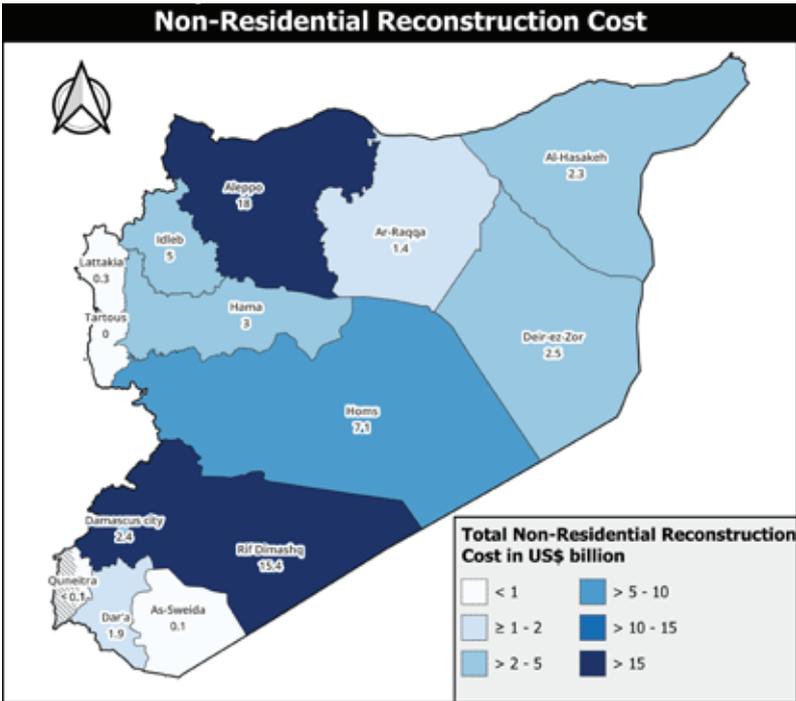
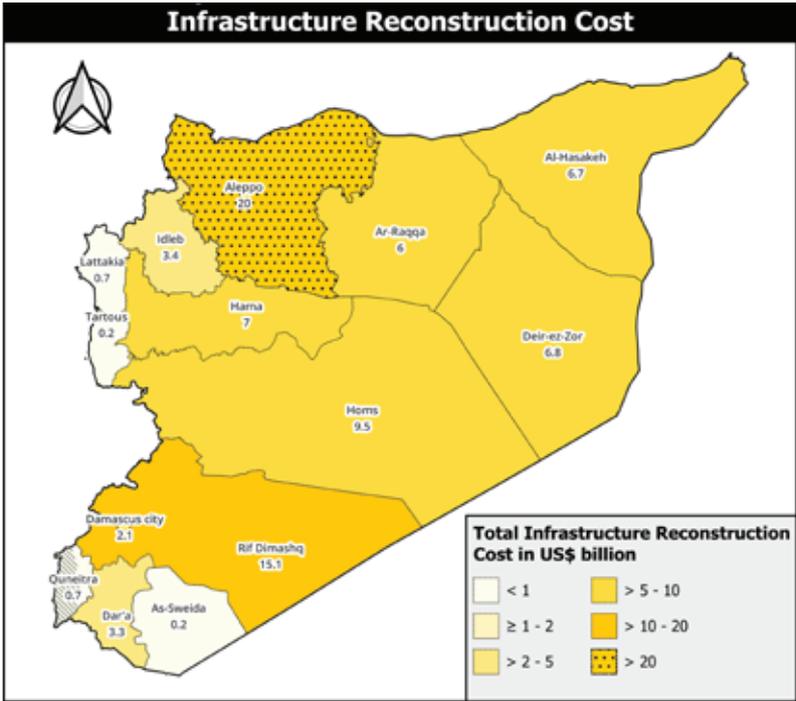


Figure 17. Map of Estimated Infrastructure Reconstruction Cost at Governorate Level



Annex 7: Datasets Used

Datasets used include:

Demographics

- Population from Census data in 2004 and projections
- Population projections used via UNOCHA
- UNOCHA datasets of settlement population, Admin zones

Infrastructure

- Capital investment statistics 2001–2024 from government and international sources
- Transport and Energy Statistics
- Housing and non-residential buildings statistics per governorate
- Infrastructure data from OSM, UNOCHA, Syrian statistics, and global databases
- Building typologies from census data and survey data, footprints from OSM and other global products
- Open Infrastructure Map Data, World Resources Institute (WRI) data

Economy

- GDP and governorate data
- UCCs from previous studies and checks against GEM and other estimates
- Google and Facebook Mobility Data and High Resolution Settlement Layer;
- World Bank datasets
- IMF data (Investment and Capital Stock Dataset; World Economic Outlook)
- Syria and FAO agricultural data

Damage Statistics + Remote Sensing + Social Media

- ACLED, War Institute, UN, UNDP datasets on war statistics, as well as GIHCD, Uni Adel, FEMA, and other blast load and engineering analysis, Airwars Data
- Cities Damage Atlas
- Social Media reports from Telegram, X (formerly Twitter), Facebook, including government ministry sites
- Copernicus, Sentinel, Planet, MAXAR, Skysat imagery, UNOSAT Imagery and Damage grading
- ReliefWeb Updates from various Syria partners
- World Bank datasets
- GRADE Ukraine 2022 Assessment + Updates
- Combined Assessments: SARC (Syrian Arab Red Crescent) and IFRC International Federation of Red Cross and Red Crescent Societies (2025), Impact Initiatives (2025), ACU (Assistance Coordination Units) Needs Assessment (2024), REACH (2024)
- Previous National-level damage and reconstruction assessments: SCPR (2015; 2020), UNESCWA (2018; 2020), UNDP (2025), World Bank (2017b), de Mistura (2017), Russian media (TASS, 2024), Mroue & Chehayeb (2023)
- Previous city-level damage assessments: World Bank (2017a), World Bank and EU (2022)
- Post-earthquake Damage Assessments: World Bank GRADE (2023a), World Bank RDNA (2023b), SCPR (2023)



GFDRR
Global Facility for Disaster Reduction and Recovery



Administered by
THE WORLD BANK
IBRD • IDA | WORLD BANK GROUP