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Recovery of Services and Infrastructure in Syria. *"Not If, But How?"*

URBAN RECOVERY FRAMEWORK | July 2022

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Executive Summary

After over a decade of conflict, Syrians continue to suffer under a protracted humanitarian crisis that has seen the destruction of, or damage to, much of its physical infrastructure, economy, and productive capacity. Furthermore, 13.4 million remain displaced both within and outside the country[1] and are suffering under growing deprivation and extreme conditions resulting from continuing degradation of the infrastructure networks owing to a lack of maintenance and repairs. Many stakeholders, including both Syrians and other external parties are increasingly demanding changes to aid parameters to better serve basic needs and set the country on a path to recovery despite the ongoing conditionalities limiting support. While humanitarian assistance in this context remains critical, the calls from various stakeholders to consider support to critical infrastructure as a more cost-effective and durable pathway for the recovery of livelihoods, access to services and basic human rights cannot be ignored. With the multiplication of urban crises in recent months, continuing the current trajectory may not be feasible. On making the case for improvement of key infrastructure and service delivery to improve the lives of Syrians, the key questions to contemplate should no longer be "should?" or "could?", but rather be built on the commitment to "must" and therefore "How?" and "How much?"

The paper presents perspectives on the required organizational, regulatory, procedural, and operational environment to implement repair and recovery processes for infrastructure and services[2], in a way that respects the relevant redlines from supporting actors, while achieving the widest and most lasting impact in Syria. The report is part of a series of policy papers developed under the Urban Recovery Framework (URF), a methodology to guide the urban dimensions of post-disaster and post-conflict recovery.[3]

The paper provides a targeted analysis of the state of infrastructure in selected cities in Syria, and its effects on the Syrian people, focused on Government of Syria (GoS) controlled areas. The objective is to inform area-based efforts, including the URF and the Area-Based Return Support initiative[4], for improved living conditions for those who have remained in Syria, or those who have been displaced but are planning to return, if and when the conditions allow. It details the limitations of support to infrastructure recovery owing to existing political and operational challenges, while noting the risks inherent in the repair of infrastructure networks. Among other aspects, the paper notes a divergence of risks between the recovery of 'open' infrastructure systems such as energy, water and communications networks required to deliver (initially) minimal service delivery at local scales, as well as more localised improvements to 'closed' systems such as urban transportation, solid and liquid waste management. The paper furthermore addresses the ongoing debate on 'resilience' and its application in complex crisis environs such as in Syria today. In addition, the paper examines the governance and regulatory frameworks relevant to the infrastructure sectors, as they pertain to implementing Syria's local administration law. It concludes with a series of key policy considerations addressing those challenges, while suggesting approaches to planning and implementing infrastructure improvements. In-so-doing, it identifies opportunities for absorptive, adaptive, and transformative 'resilience', using area-based approaches. Recommendations can be embedded into recovery efforts through cross-sectoral and multi-stakeholder engagements, with the aim to implement initiatives with the greatest potential impact and value for money.

1 See: UNHCR Syria Emergency (March 2021): https://www.unhcr.org/syria-emergency.html
2 'Infrastructure and services' are considered for this exercise as: Roads, bridges, and public transport; public spaces including parks and gardens; energy and communication networks; water and sanitation; and solid waste management. This paper does not specifically address other key physical, social or environmental systems which are equally or more significant elements of 'resilient recovery' and subsequent sustainable development.
3 See Section 5. f): Urban Recovery Framework: Forging subsidiarity, fostering resilience
4 A multi-stakeholder initiative led by a technical working group under the Return and Reintegration Working Group (RRWG).

The diagnosis in the paper can be summarized as follows:

The situation in Syria remains dire and possibilities for recovery and reconstruction hampered by a wide range of limiting factors. Poverty has reached alarming levels and, despite the aid response, have continued to worsen in recent years. Infrastructure systems, particularly health, education, housing, sanitation, and livelihoods have been severely compromised or completely absent in parts of the country. This precarious state has been further exacerbated by the global COVID 19 pandemic, the flight of competent business, governance and service professionals, corruption, internecine conflict and hyper-inflation. A trajectory towards cessation of internal hostilities, eventual stability and peace necessary for recovery and rehabilitation will be influenced by both internal and external factors. Foreign direct and indirect engagement in the conflict, geo-political pressure from a range of actors from individual states to multilateral organizations, sanctions, structural schisms between humanitarian and recovery focused programmes, and conditional funding from donors, create a complex environment within which the entire aid community operates. Whilst a measure of stability has emerged in certain parts of the country, other areas, notably in the northern and eastern areas, remain actively engaged in the war. Nevertheless, and despite the complexities and challenges, continuing with piecemeal, short term, fragmented 'fixes' to infrastructure elements that service basic needs of Syrians risks future financial, reputational, and sustainability risks.

Multiple parties engaged in multiple conflicts: The ongoing conflict in Syria have drawn in multiple external parties either directly, by proxy supporting the government's position, or in support of opposition entities. Many of these have vested interests in maintaining the war economy, and internecine conflict over territorial control continues to complicate aid operations.

Estimates of overall recovery and reconstruction costs for Syria exceed hundreds of billions of USD[5]. A recent World Bank damage assessment covering 14 Syrian cities estimates the total costs for physical infrastructure reconstruction ranges from USD 6.3-8.5 billion[6]. It includes the assessment of major bulk networks as well as the damage to housing, water and sewerage systems, schools, hospitals, public buildings, energy, road, and communication networks servicing that were damaged, destroyed or eroded through lack of maintenance.

Multiple sources[7] state that before the conflict, the major road networks throughout Syria were in poor condition because of poor construction, heavy traffic loads, and lack of maintenance. Since 2011 however, in addition to damage throughout Syria's road networks and the destruction of key bridges, rubble and debris have accumulated on most urban networks making passage difficult and, in some cases leaving certain neighborhoods completely cut off. Work, schools, recreation sites, health facilities and market access are all impacted.

The delivery of minimal functioning services in the target cities for energy, water and communications is fully reliant on upstream production and transmission capacity. This includes, indirectly, disposition of wastewater and access to and from secondary and tertiary transportation networks. Given that mobilisation of large-scale financing to rehabilitate key open infrastructure systems is unlikely to occur for some time, and unlocking barriers imposed by sanctions less likely, maximising what limited resources are available through aid funding is critical to improve lives for urban residents. As local government revenues improve, the potential for self-financing smaller scale infrastructure rehabilitation improves as well.

5 With the ongoing war, the cost of reconstruction is a moving target. Depending on sources, cost estimates range from USD 280 billion to as high as USD 1 trillion. However, even the most conservative estimates are above the USD 280 billion threshold. See: "Reconstruction in Syria Challenges and Policy Options for the EU and its Member States", SWP Research Paper 11 Stiftung Wissenschaft und Politik German Institute for International and Security Affairs, Muriel Asseburg, July 2020.

6 World Bank Draft Syria Joint Damage Assessment (February 2022): Physical Infrastructure sectors include: Transport, Electricity, Water Supply and Sanitation, and Agriculture, and cross-cutting issues including Environment and Governance. Damage values are largely determined through remote sensing, satellite imagery, social media, partner assessments and news reports.

7 See: Case Study – The State of Aleppo's Roads, Colombia University 2016 (with data from UNOSAT, UNITAR). Also article: Syria's Roads – Waiting for Investors https://english.enabbaladi.net/archives/2019/09/syrias-roads-waiting-for-investors/.

Aid organizations, both from humanitarian and recovery/development sectors, are starting to address the critical impact of the damage to the country's infrastructure on the Syrian people. The ICRC for example published two reports stressing the imperative for international aid organizations to address critical deficits in key infrastructure. In the first, "Syria – Critical infrastructure failure risks devastating consequences" while making reference to the key sectors of energy and water, states; *"If action is not taken, whole essential service systems could collapse in the next decade. The inability to stabilize critical infrastructure systems over the past decade has led to this looming threat of failure. The question is not if, but rather when."* The second document entitled "Too Big To Fail, Drinking Water Facilities" further elaborates the consequences of not urgently addressing water production, treatment and distribution infrastructure and argues, *"…that over the next decade, multi-year, multi-million investments are necessary to keep such large critical infrastructure operational, thereby mitigating the humanitarian consequences that would result from a collapse in service delivery and ensuring access to at least a minimum level of essential services required to safeguard public health."*

Restoration of service functionality in cities in an equitable and conflict sensitive manner is critical for return and reintegration. Local authorities in Syria are faced with massive population changes, severe and increasing needs, and large-scale damage and destruction to infrastructure and buildings. Significant population increase in certain cities and neighbourhoods have added pressure on land and infrastructure. At the same time, low and rapidly dwindling financial and human capital is limiting local authorities' abilities to undertake urban planning and management and respond to residents' needs.

A deterioration of capacity at municipal and regional scales created challenges for implementation of laws promulgated to facilitate decentralisation. These are key deficiencies particularly where mandates to own, rehabilitate, finance, manage, and generate revenues from service delivery are passed down to the municipal authorities. In the 10 years following the promulgation of Law 107, shortages of finance and competent staff have limited its full implementation, and most are unable to fulfil their responsibilities to deliver even basic services. Additionally, with many infrastructure systems damaged or destroyed, services normally delivered by traditional providers; usually smaller scale private companies, are also not able to operate[8].

Within this wide array of factors impacting the lives and livelihoods of Syrians in general, and in spite of the limitations and risks noted above, there remain conditional possibilities for the international aid community to enhance programming to improve key infrastructure and service sectors, and improve conditions for those affected families and communities throughout Syria.

Efforts have already been initiated to pilot conflict-sensitive, area-based approaches, like the URF, as a gateway for the restoration of basic services, mobility and access, economic recovery, social cohesion and, even, accountable local governance. The resources dedicated to this effort have, however, been minimal, with respect to the scale of needs. A revised focus for external assistance in Syria must therefore incorporate an emphasis on sustainable approaches that leverage community capital and resources, whilst reducing aid dependency.

8 UN-Habitat, Decentralisation and local governance: *Pursuing area-based approaches that support accountability in the restoration of basic services and economic recovery in Syria (2022)*

Principles for support to infrastructure recovery

Potential support to infrastructure rehabilitation should be guided by the following principles:

1. Strong evidence-based and data-driven criteria, incorporating context-sensitive urban analysis, damage assessments, and participatory recovery planning, should guide response considerations.
2. A thorough due diligence process guides *implementation of priorities,* including with due attention to balanced recovery, operational and reputational risk management considerations.
3. *Where recovery can be achieved, it should be supported.* This practical approach provides incremental 'peace dividends', minimises humanitarian demand, builds social and political capital, starts addressing capacity limitations, and empowers stakeholders (including subnational authorities with tendency toward accountable local public service delivery) to engage early in their own recovery and development.
4. *All inputs within the thresholds of minimal functionality should be considered incremental inputs with a longer-term perspective on the recovery of Syria's infrastructure in line with modern, efficient, and sustainable standards, and rebuilding the essential services that Syria's economic recovery will be dependent on.* All associated hard or physical elements as well as soft or functional elements of both open and closed infrastructure sectors can be mapped out, planned, and appropriately addressed in time, when conditions permit. Furthermore, this principle ensures no 'investment' is wasted.
5. *Resources must be allocated towards more complete interventions focusing on critical infrastructure and service systems, to achieve a maximum positive impact for the Syrian people.* This includes the principle of leveraging human capital in long term planning for infrastructure and service improvements by constructively engaging international agencies and other stakeholders (including community members themselves), and opening space for donors who are funding or considering extending the horizon of funding beyond meeting immediate humanitarian needs.
6. *Robust engagement processes with local authorities,* host communities, displaced persons, returnees and other relevant stakeholders to identify needs, vulnerabilities, and opportunities, and prioritise interventions, form the basis of devising local recovery plans.
7. Rigorous monitoring and safeguards mechanisms to mitigate risk, track progress and inform programme learning.

Recommendations for actors considering infrastructure recovery:

The policy recommendations presented in this paper are based on a phased, area-based, recovery models, such as URF. To facilitate early recovery towards restitution and peacebuilding, the outlined diagnosis and corresponding considerations and policy principles require an evolving, flexible, and iterative response framework that targets both immediate needs and structural issues. The recommendations are intended as a starting point for such processes, to be further developed through cross-sectoral and multi-stakeholder engagement. This may be embedded in participatory recovery planning, as well as part of other initiatives and programmes. By exploring the complex contextual constraints and limitations, and specifically assessing the energy, water, communication, solid and liquid waste, and public space needs in a selection of cities, while considering the increasing depth of poverty among the Syrian population in-country; the paper aims to contribute to the debate among donors, agencies and policy makers, on making a case for enhancing current aid response beyond the immediate, emergency needs of Syrians, to considering urgent needs for improving their lives; in this case through the repair and rehabilitation of key infrastructure sectors to better deliver services that address the

quality of life for those in-country, and those with aspirations to return.

The following recommendations are relevant for actors at all levels:

1. **Working small, delivering large, for maximal impact.** Understanding, downstream minimal functionality requires (some) upstream capacity: focus on low hanging fruit (eg. for water/energy/comms (open systems) and achievable products within closed systems at urban scales (ie. solid/liquid waste, transport, public space), to enhance reputational capital, trust and enhance partner commitment, while improving lives and setting in place conditions for future development. Project planning and formulation within a continuum that envisions maximal functionality across infrastructure networks and using area-based approaches that offer discrete spatial scales within which incremental improvements, or 'recovery gains', to infrastructure and service delivery can be developed and services delivered in a manner that similarly improves longer-term institutional, regulatory, and capacity deficits with stakeholders. This requires development of criteria meeting the above conditions and using modified 'return on investment' indicators to measure, monitor and deliver impact from project investments in, for example, access to services, and improvements to social, environmental, economic and quality of life indicators.
2. **Focusing on area-based approaches** that offer discrete spatial scales within which holistic incremental legacy outputs or 'recovery gains' to infrastructure and service delivery can be developed and services delivered in a manner that similarly improves institutional, regulatory, and capacity deficits with stakeholders and maximizes positive impact from project investments on the social, environmental and economic quality of life indices for Syrian citizens. An area-based (holistic, multi-stakeholder, multi-sector, and multi-scalar) approach focused on affected population and systems needs is applied to support cost-effective urban recovery at scale. These spaces can be defined at any scale for any purpose including residential, commercial or industrial neighbourhoods but must be linked to broader municipal, district or even regional scale urban development plans to ensure balanced, strategic recovery and eventual development goals are met.
3. **Use specialized tools, frameworks, and approaches to manage risk.** Existing monitoring systems such as the Environmental and Social Safeguards (ESS) and Housing, Land and Property (HLP) due diligence frameworks are important to measure impact and manage risk and could be utilized to capture recovery gains and adapted to foster subsidiarity across humanitarian and development divides.
4. **Plan for integrated approaches -** integrating immediate measures with long term goals delivering allowable smaller-scale 'minimal functionality' improvements linked to long term plans targeting resilient, sustainable and modern infrastructure systems throughout Syria. Understanding that infrastructure networks including roads, bridges and public transport, public spaces, parks and gardens, energy and communication networks, water and sanitation and solid waste management are interdependent and linked at city, regional and national scales. Holistic, integrated early support programming can have positive, wider influences on larger-scale upstream infrastructure rehabilitation/reconstruction while avoiding asymmetric sectoral development. Consider developing clear common goals that articulate end-state conditions for aid programming on behalf of people, systems, institutions and organizations, that result in increased resilience.
5. **Soften the partitioning of aid into humanitarian and development modalities.** This is based on the misconception that relief, rehabilitation, and reconstruction are linear stages of recovery. Rather, a focus on the resilience of communities can support programming to advance recovery and development in areas where the potential is greatest, and transcend typical divisions across humanitarian, early-recovery and longer-term reconstruction and development goals, including contributions to peace-building.
6. **Strengthen inter-agency subsidiarity.** Overcoming structural schisms and maximising resources and impact. Following the principle that where infrastructure and service systems recovery can be initiated, it should be supported, both available resources and programme/project impact can be maximised with better intra/inter-agency subsidiarity across humanitarian-recovery transitions.
7. **Leverage all possible funding pathways.** With access to normal options for financing key infrastructure sectors restricted, virtually all investments will require financing through

various support channels. Opportunities exist to explore common ground and points of convergence for repair and improvements projects for key infrastructure and services including, for example; alignment with emerging early recovery policies of US and EU donors, Joint Programme on Urban and Rural Resilience, Syrian Humanitarian Fund, Syria Recovery Trust Fund, and Adaptation Fund.

8. **Strengthen legal and regulatory systems.** Starting with a typology of infrastructure systems including their primary components, noting the institutions charged with commissioning, operating and maintaining those components, building a compendium of existing applicable laws regulating the supply and distribution of services associated with each level of the infrastructure sector, provides a framework for systematically addressing weak or missing legal and regulatory elements and improving the governance for all infrastructure sectors.
9. **Manage expectations, enhancing reputational capital.** Transparency and inclusion of key stakeholders in future planning is essential to managing expectations, fostering trust, establishing partner commitment, and building capacity for future larger scale rehabilitation and reconstruction while delivering achievable, smaller scale, and incremental infrastructure and service improvements within the constraints of 'minimal functionality'.
10. **Ensure future sustainability and resilience by addressing capacity constraints.** Understanding that the weakest links between interdependent systems erode resilience of the entire system. Partners and stakeholders across all infrastructure sectors require support for capacity building on all aspects of planning, recovery, rehabilitation, finance, management, and operations at local and regional levels. With capacity constraints at all levels, marshalling resources from every sector is critical, and complementing aid-based delivery with capacity building to ensure future operability, resilience, and sustainability essential; particularly with operational infrastructure and service systems requiring long-term planning, oversight and management.
11. **Finance for the future.** As prospects for large-scale capital intensive financing of bulk infrastructure through normal channels are limited by ongoing conflict, sanctions, a fragile economy, and fiscal capacity constraints at certain government levels, aid programmes could integrate discrete pilot programmes designed to build capacity through direct financing at local scales (and in line with aspirations of Law 107) for smaller scale improvements of key urban infrastructure within the constraints of current aid policy, sanctions and operational environments. Innovations such as pooled funding for financing 'package' projects implemented by qualified aid agencies on behalf of communities and within the scope of local recovery plans, using qualified aid agencies as financial proxies, and direct community contracting, are among options available while limitations of sanctions and ongoing conflict prevent normal financing mechanisms.

While the current official public positions of the majority of international donors on Syria suggest that some of recommendations in this paper may not be feasible for implementation in the current moment, it nonetheless seeks to fill a vacuum in the space for reasonable policy reflections at a moment when there is some acceptance in the notion that conflict-sensitive, area-based resilience oriented programming may produce self-regenerating local recovery effects that extend beyond traditional humanitarian assistance.

02

Introduction

The present paper attempts to stimulate dialogue regarding the case for rehabilitation and recovery of infrastructure and services in the Syrian context as it exists today. It further attempts to contribute to other debates (see example in text box[9]) making the case that continuing with current approaches focusing solely on emergency needs and piecemeal, fragmented infrastructure and service projects, risks prospects for recovery and potential continuation of an already protracted crisis. Ultimately, the paper aims to shape a constructive discussion that should inform more effective and cost-efficient planning and programming that benefits Syrian people in the most equitable manner.

Figure 1: SWG Research paper

> "…It would therefore make sense to move rapidly to a form of assistance that places considerably more emphasis on rehabilitation of basic infrastructure and improves living conditions through employment programmes and local procurement (see footnote above). Europe's self-imposed restriction to emergency assistance stands in the way of effective support for the population. Ultimately, it risks contributing to cementing a situation in which living conditions deteriorate and the population remain permanently dependent on international aid and on the benevolence of the regime. This applies in particular to cities, neighbourhoods and rural areas that were controlled by the opposition and suffered massive destruction during their recapture. Europe should make decisions about mine clearance, housing (re) construction, restoration of basic infrastructure (water and sewerage, power, health, education), and local programmes for securing livelihoods exclusively on the basis of the needs of the population and not on the political stance of the regime. The decisive criterion for any European engagement in such rehabilitation projects should therefore be whether such projects can be realised without violating property rights or disadvantaging population groups on the basis of (insinuated) political loyalties." *July 2020: Muriel Asseburg, Reconstruction in Syria: Challenges and Policy Options for the EU and its Member States, SWP Research Paper 11* ***Stiftung Wissenschaft und Politik German Institute for International and Security Affairs***

9 Additional reference material provided in the example below: Footnote 110
"Some EU member states already support projects in the area of rehabilitation of basic infrastructure. But to date this only accounts for a small proportion of overall assistance; ICG, Ways out of Europe's Syria Reconstruction Conundrum (see note 97), 24. Discussions between the author and European diplomats, Beirut, February 2020. For the idea see also Volker Perthes, Syria: Too Fragile to Ignore: Military Outcomes, External Influence and European Options, SWP Comment 7/2019 (Berlin: Stiftung Wissenschaft und Politik, February 2019), https://www.swp-berlin.org/10.18449/2019C07/ (accessed 10 March 2020).

The paper identifies key infrastructure and services as: roads, bridges and public transport; public spaces, parks and gardens; energy and communication networks; water and sanitation; and solid waste management. It is worth noting that other elements of bulk and networked infrastructure including ports (land, air and sea), social systems (housing, health, education), economic systems (agricultural, commercial, financial and market) are all in some manner inter-dependent with the partial typology of infrastructure and services assessed in this paper. Furthermore, in assessing options for implementing smaller-scale infrastructure and services programming in Syria, and asserting the importance of linking these to longer-term, larger-scale rehabilitation and reconstruction of infrastructure sectors, it is essential to understand the context limiting the latter goal and reviewing the limitations of the former.

Using secondary literature, independent research, interviews, and discussions with key UN staff and experts, the paper analyses the current state of the relief/recovery/development continuum within Syria; influences on policy frameworks adopted by key donors, multilateral institutions, and operational trends within the international aid community, to set out the context within which approaches to 'resilient recovery' for certain infrastructure sectors may be considered in Syria.

The following sections set out the complex context within which aid in general is delivered in Syria, including impacts of the current socio-political environment, influences from other states, multi-lateral and donor countries, and structural and operational constraints within the aid community. It further outlines the concepts and approaches to 'resilient recovery' both within Syria and elsewhere and provides examples of relevant programming planned or underway in-country. One section is focussed on mechanisms for financing infrastructure, challenges to large-scale capital investment, and possibilities and opportunities for smaller-scale financing within the constraints of international sanctions and UN policy. Finally, the paper analyses the current state of referenced infrastructure sectors and services noted above and makes a case for the consideration of future approaches to integrated programming to improve the life of Syrian citizens through repairs and improvements implemented within minimal functionality thresholds.

03

Political context of post-crisis infrastructure rehabilitation

The political context in Syria represents the greatest impediment to ensuring a lasting impact of interventions for Syrians. Hampered by the preoccupation of the current authorities with ongoing conflict seemingly at any cost, economic collapse, widespread displacement, exasperation of the international community with the current regime, vested interests of other countries on both sides of the conflict, and in spite of billions in aid already provided, ongoing 'donor fatigue' as the crisis enters its 11th year, and the barriers imposed by sanctions, all broadly characterize the current political environment within which agencies wishing to support the plight of the Syrian population must navigate in order to operate.

The Syrian Arab Republic has for decades been the focus of geo-political debate, multi-lateral dialogue within the UN system, European Union, and various regional entities. The country has been through successive wars since the early 1970's, occupied foreign lands, engaged directly and indirectly in other conflicts, and is itself suffering the impacts of an 11-year civil war. Today, given competing global priorities for international assistance, a focus on developing a forward-looking strategy for peace, security, stability and, eventual, reconstruction, will be needed.

National infrastructure networks typically represent the single largest investment in any country. The foundations of economies rely on mobility, communications, energy and access to services provided through these networks. In Syria, virtually all bulk infrastructure has been destroyed or damaged over the course of the conflict. Without capacity to produce and distribute energy (oil, gas and hydro-electricity) and water (including treatment/disposal), rebuild educational and health systems, housing and social infrastructure, for all its citizens, the prospect of any form of sustainable recovery is; in the short- to medium-term limited. In the longer term, or when conditions permit, billions of dollars will be required to restore and modernize both the physical (hard) networks, and their operational (soft) systems. However, the situation in Syria remains dire and possibilities for recovery and reconstruction hampered by a wide range of limiting factors.

Figure 2: Impact of conflict - UNHCR

According to the UNHCR, *"after 10 years of crisis, the Syrian conflict has led to more* than 6.6 million Syrian refugees *and 6.7 million internally displaced (as of March 2021). More than* 13 million people inside Syria require humanitarian assistance, *including 6 million children. (These) Years of conflict have left the healthcare system incredibly fragile and weak and although attacks on healthcare facilities* decreased in 2020, *the* COVID-19 *pandemic have (sic) eroded the system further, stretching it (to) an even more critical level. Across Syria, an estimated* 11.1 million people *are in need of humanitarian assistance. Some 44% of Syrian refugees within the region are* female*. Some 49% of host community populations within the region are female."*

The impact of the war in Syria has worsened in the period between March 2021 and the time of writing (February 2022) with an estimated 12.4 million Syrians now suffering critical food insecurity[10], the collapse of the Syrian pound, hyper-inflation and subsequent erosion of family incomes, the poverty rate has reached an estimated 80-90% of the population[11]. The World Bank, in its Syria Economic Update (Oct 2021) states that the Syrian economy shrank by roughly 50% since the war started, and the Syrian pound depreciated 70-fold relative to the US dollar while hyperinflation raised the reference value of a typical food basket by 238% in 2020, and another 55% thus far in 2021. Combined, the impact on wages for Syrian workers has been significant.

Estimates of overall reconstruction costs for Syria exceed hundreds of billions of USD[12]. However, a recent World Bank damage assessment covering 14 Syrian cities estimates the total costs for physical infrastructure reconstruction to be in range of USD 6.3-8.5 billion[13]. All major bulk networks have been impacted, while housing, water and sewerage systems, schools, hospitals, public buildings, energy, road, and communication networks servicing users have been damaged, destroyed or eroded through lack of maintenance.

Among the over 6 million refugees who have fled Syria, are the small and medium business owners escaping the conflict or driven away by elites cornering the commercial sector, civil servants who held positions in local government offices, and those who had been the operators and managers of various infrastructure and service delivery networks, in addition to thousands of professionals in every sector.

With the prospects for a cessation to the war, and emergence of peace and stability necessary to begin rebuilding the state's infrastructure anytime soon becoming increasingly dim, the aid community continues to seek the means to improve life for Syrian citizens, deliver what services they can, and prepare communities, towns and cities to recover and rebuild when conditions permit. For now, there are a wide range of challenges limiting opportunities to support Syrians beyond attempting to meet their immediate humanitarian needs, and growing concern that these limitations may contribute to further prolonging an already protracted crisis.

10 World Food Programme Syria Brief: November 2021; (updated January 22, 2022) https://www.wfp.org/countries/syrian-arab-republic.

11 While numbers and sources vary, between 80% (https://reliefweb.int/report/syrian-arab-republic/syria-economic-crisis-compounds-conflict-misery-millions-face-deeper) and 90% (https://www.un.org/press/en/2021/sgsm20664.doc.htm);

12 With ongoing war the cost of reconstruction is a moving target. Depending on sources, cost estimates range from USD 280 billion to as high as USD 1 trillion. However, even the most conservative estimates are above the USD 280 billion threshold. See: "Reconstruction in Syria Challenges and Policy Options for the E U and its Member States", SWP Research Paper 11 Stiftung Wissenschaft und Politik German Institute for International and Security Affairs, Muriel Asseburg, July 2020.

13 World Bank Draft Syria Joint Damage Assessment (February 2022): Physical Infrastructure sectors include: Transport, Electricity, Water Supply and Sanitation, and Agriculture, and cross-cutting issues including Environment and Governance. Damage values are largely determined through remote sensing, satellite imagery, social media, partner assessments and news reports.

A. Various escalating sanction regimes between 2011-2021

Many international actors including the USA, EU, Arab League, Turkey, Switzerland, Canada and Australia have imposed a range of escalating sanctions against individuals, institutions, and the Syrian state since mid-2011. Of note, and with relevance to this paper is the "Caesar Syria Civilian Protection Act of 2019" (the Caesar Act) and Executive Order 13894: "Blocking Property and Suspending Entry of Certain Persons Contributing to the Situation in Syria", signed into law in December 2019 by (then) President Donald Trump. Its content and intent were extended by President Joe Biden on October 8, 2021, for an additional year[14]. To date, none of the preconditions for lifting of the sanctions have materialized, and the prospect of them being realized any time soon are minimal. Nevertheless, in late 2021 the US Treasury's Department of Foreign Assets Control amended it sanctions regulations by expanding authorisations for NGO's to engage in certain humanitarian and early recovery activities and transactions[15]. This adjustment creates opportunities for expansion of the remits of some aid agencies to enhance their support to Syrians in need. At the time of writing, very few of the sanctions imposed by the US, EU and other countries are softening however, and those countries remain resolute that the objectives of peaceful transition and other conditionalities are met before any lifting of sanctions may be considered.

Figure 3: Main sanction regimes

Main sanction regimes

EU - The Council of the European Union[16] has as of November 15, 2021, decided to add four recently-appointed Syrian ministers to the list of persons and entities subject to targeted EU restrictive measures in view of the situation in Syria bringing the total to 287 persons targeted by the travel ban and asset freeze. The list also includes 70 entities, which are subject to an asset freeze.

The goal of the EU sanctions, as it is with the US and others is to put pressure on the Syrian authorities to halt repression and negotiate a lasting political settlement of the Syrian crisis in line with UN Security Council Resolution 2254. The sanctions currently in place against the Syrian authorities were introduced in 2011, in response to the violent repression of the Syrian civilian population. They also target companies and prominent businesspeople benefitting from their ties to the national authorities and the war economy. Restrictive measures also include a ban on the import of oil, restrictions on certain investments, a freeze of the Syrian central bank's assets that are held in the EU, and export restrictions on equipment and technology that could be used for internal repression and on equipment and technology for the monitoring or interception of internet or telephone communications.

14 "Notice on the Continuation of the National Emergency with Respect to the Actions of the Government of Syria", White House Presidential Actions May 6, 2021. See: https://www.whitehouse.gov/briefing-room/presidential-actions/2021/05/06/notice-on-the-continuation-of-the-national-emergency-with-respect-to-the-actions-of-the-government-of-syria/.

15 See: US Treasury Expands Syria Nongovernmental Organizations General License, November 24, 2021, https://home.treasury.gov/news/press-releases/jy0505.

16 See: Council of the European Union website: https://www.consilium.europa.eu/en/press/press-releases/2021/11/15/syria-four-new-ministers-added-to-eu-sanctions-list/.

Canada - Under its Special Economic Measures Act, began imposing a series escalating sanctions in 2011 primarily halting the flow of chemical weapons or their precursors into Syria, and in response to the humanitarian crisis and breach of international peace and security in the region. It has subsequently enacted the Special Economic Measures (Syria) Regulations which stipulate restrictions; subject to certain permissions and certificates and exemptions, on dealing with 'designated persons' and prohibiting causing, assisting or promoting a range of import/export items (excluding food for human consumption), and financial services. Australia, the Arab League and Switzerland have also enacted restrictions like those of other countries, and with the common aim of ending the conflict and provoking political transition towards a transparent and democratically elected government.

While the efficacy of sanctions[17] is hotly debated, they are nevertheless a reality for Syrian citizens and the wide range of institutions from domestic small businesses to large local and international corporations as well as the international aid apparatus.

US - By far the most robust of the sanctions has been the US Governments "Caesar Syria Civilian Protection Act" (Caesar Act) June 17, 2020[18]. The primary and secondary sanctions, while purportedly *"…are not intended to harm the Syrian people"*[19] have nevertheless: seriously affected local markets by disrupting supply chains; caused significant devaluation of the Syrian lira deeply impacting its overall economy and bolstering black market currency exchanges and catalyzing the rise of the oligarchs; increased the depth and scale of poverty for its citizens; and, skewed the 'playing field' in favor of select institutions with financial dealings outside of Syrian territory to the further detriment of the country's domestic economy. From the perspective of non-sanction targeted agencies such as those of the UN or humanitarian system organizations, implementing programmes and projects within Syria are complicated by all these impacts.

The Caesar Act (Section 401) of the Caesar Bill) and its associated Executive Order, statutes, regulations, provisions, etc. provide the following summary of the six preconditions for sanctions to be lifted, which relate to reduced hostilities and human right abuses by parties to the conflict, enhanced humanitarian access and freedom of movement and the possibility for the "safe, voluntary, and dignified return of Syrians displaced by the conflict".

17 See: A Comprehensive Review of US and EU Sanctions on Syria. Middle East Institute, August 6, 2021 (https://www.mei.edu/publications/comprehensive-review-effectiveness-us-and-eu-sanctions-syria).

18 In the 1st session of the US Congress in January 2019, the Senate passed the Bill creating the Caesar Syria Civilian Protection Act. The summary (above) of conditions required to lift sanctions was drawn from Title IV General Provisions, Section 401 Suspansion of Sanctions, pp 25-28. (Note: preconditions relating to Syria's engagement with chemical, nuclear and biological weapons treaties and conventions are omitted in the final Act).

19 See: US State Department Caesar Syria Civilian Protection Act Fact Sheet 17 June, 2020.

B. A softening of relations between Syria and some Arab countries.

Since its inception in 2011, multiple international state actors have engaged in this conflict; resourcing, influencing or notably in the cases of, Russia[20], Iran and Turkey, actively participating and allied with national or opposition parties. Neighbouring countries including Israel/Palestine, Lebanon, Jordan, and Iraq have been impacted and are, to varying degrees also engaged.

In recent years however a 'softening' of relations between Syria and some Arab countries has emerged, notably with Jordan and the United Arab Emirates who have begun opening high level diplomatic relations. Others, including Egypt and Saudi Arabia have maintained lower-level relations throughout the crisis. Many Arab States continue to remain reluctant to re-engage despite the growing sentiment that the current government seems likely to continue and Syria will eventually be re-admitted to the Arab League at some point in the future. This softening, while not by any means a normalization of relations with Arab States, is largely driven by geo-political issues related to the presence of Iranian military, prospects for an economic stabilization that would improve the investment and business environment, and opportunities for the Syrian government to rebuild its infrastructure and economy[21].

C. Continued fragmentation of authority across the country:

Despite the above conditions, the current state of conflict in Syria also sees the national authorities inexorably exerting control over much of its territory. Exceptions include the entire North-eastern and northern border sub-districts (nahiya) within Idlib, Aleppo, Ar-Raqqah, Al-Hassakah and Deir-ez-Zor Governorates where opposition parties, rebel armies and other actors either control or are involved in active warfare against the Government in Damascus and its allies. This has not been without consequence for the general population, and the entire infrastructure networks throughout the country.

While sanctions intended to stimulate a political transition have been thus far ineffective, the national authorities control multiple diverse allies sharing common ground on the battlefields. Whilst loyal to the Government of Syria, many of these allies are themselves engaged in internecine conflicts over; territory, control of aspects of the war economy, ethnic divisions, competition over placement in the regime's hierarchy, and multiple other factors[22].

Finally, while efforts are being made on multiple fronts to ease the burden of sanctions and lessen the impact of conflict on Syrian citizens the UN Special Envoy for Syria's efforts to introduce "step-for-step" financial, political or diplomatic incentives to national authorities in exchange for concessions related to humanitarian access are yet to gain traction[23].

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20 Note: On February 24, 2022 Russian Federation military invaded the Ukraine raising widespread international condemnation. The impact of Russian military operations focusing elsewhere than Syria will have potential impacts on how their support to national authorities plays out in coming weeks and months.

21 Note: In spite of sanctions, war, and a failing economy, national authorities have since 2014 convened the annual "Re-build Syria Exposition", a trade show courting potential investors, developers and contractors with interests in the (eventual) reconstruction of the country's industrial, agricultural and infrastructure sectors. See: http://www.re-buildsyria.com/.

22 For a treatise on aspects of the Syrian political economy, see: Research Project Report No. 8 "Formality, Informality, and the Resilience of the Syrian Political Economy" (June 2021) and, Discussion Paper No. 35, "The Political Economy of Syria's Physical Fragmentation and Dependence" (August, 2021), Geneva Centre for Security Policy, Syria Transition Challenge Project.

23 Mena News Article (11 February, 2022) See: https://menaaffairs.com/pedersens-step-for-step-approach-declined-by-syrian-opposition/.

Figure 4: Softening relations with Jordan

> "A telephone call last month (October 2021) between Assad (Syrian President Bashar al-Assad) and Jordan's King Abdullah II marked the highest-level contact between Syria and a U.S.-allied Arab country in years. The visit by the Emirati foreign minister, Abdullah bin Zayed al-Nahyan, with Assad in Damascus last week furthered the sense that Syria's isolation from its neighbors could be coming to an end…
>
> These contacts signal a new readiness to accept the inevitability of Assad's survival among Arab countries that backed the anti-Assad uprising and expelled Syria from the Arab League, analysts say." ***The Washington Post, Liz Sly, Sarah Dadouch November 18, 2021***

D. Complex challenges for aid organizations in Syria

Aid agencies including UN and INGO's must individually register, maintain presence, and negotiate a plethora of permissions related to mobility outside of Damascus, visas for incoming staff, access to currency for operations, accommodation, offices or sub-offices, among others within a system where approvals are unreliable. This has been characterized by donors and aid agencies alike as 'stonewalling' while preventing aid from reaching certain areas and interfering with humanitarian mandates throughout the state-controlled parts of the country.

Challenges of corruption and fraudulent activities remain a concern for all aid actors in Syria and has been the subject of much investigative journalism and media attention especially through 2021 and early 2022. The volatile exchange rate and gap between the official exchange rate in comparison with the black-market rate, has fuelled much concern relating to whom international aid financial transactions may inadvertently benefit.

In response to such concerns the UN has engaged constructively with all scrutiny of its operations in Syria and has worked to maintain robust and bespoke systems to support risk management and mitigation in relation to risks as they present and evolve. The UN is also currently considering the addition of further mechanisms to bolster existing due-diligence mechanisms with a specific Human Rights based orientation.

Delivering aid within this environment will likely continue to present potential for reputational risk of unintentional support to national government, contravening key sanction restrictions and requiring consistent and continuing risk mitigation efforts. Donors[24], aid agencies, and legitimate partners alike are exposed to this risk and as such are important stakeholders to the design and application of mitigative responses.

24 Furthermore, the US has been increasingly concerned with their assertions that their (and presumably other donor) funds have been 'weaponized' by the Syrian Government (see operational aid context section below) diverting aid to support military activities and close allies[24].

E. Vested interests in maintaining the current war economy

Prior to the outbreak of the war in 2011, the national authorities had embarked on planning several initiatives to modernise and upgrade much of the bulk and networked infrastructure throughout the country. These initiatives considered among others, shifting to more 'green' forms including reducing waste, transitioning to renewable energy, and improvements to operation and management of most service delivery streams. Since 2011, the financial and economic environment has drastically changed. While the national authorities are pre-occupied consolidating and protecting power in parts of the country under their control and continuing military operations in those areas that are not, the socio-economic state of the entire country has dissolved into a 'war economy'. Currently in government-controlled areas, it has been reported that the economy can often be influenced by local powerful leaders and elites[25], who can control access to business opportunities, exerting power over commercial sectors, driving inflation and profiting from commercial activities, influencing banks and forex systems, while constricting perceived competition.

In most major urban centers, the impacts of the above can be acute. However, in rural and hinterland areas, where 'control' is further complicated by powerful militias with their own agendas, ongoing internecine territorial conflicts and 'rent-seeking' tariffs, the impacts on rural farmers and other communities can be drastic. In these areas also, the cost of transportation can be driven up by extortionate 'road taxes' further fueling inflation[26].

In both cases, there are vested interests in maintaining the state of the war economy, negatively affected the most vulnerable communities. Nevertheless, despite these conditions, it is anticipated that multiple public and private parties, platforms and consortia will eventually be prepared to invest billions of dollars in capital for Syria's reconstruction including private sector investors and IFIs.

F. Closures of border crossings

The UN Security Council extended the authorization for transport of aid by UN agencies through the Bab-al-Hawa border crossing in July, 2021. Consequently, with the Dar'a/Al Ramtha border crossing along the Amman-Damascus corridor, there are only two formal entry points for UN imports of aid and other goods (see Fig 6 Status of border crossings…below). Access into non-government-controlled areas in the North-East or Northwest is either through regions where aid convoys and outposts have been targeted through Bab Al-Hawa, or face complex and unpredictable interference and hampered access by government forces if traveling from Jordan through Dar'a-Damascus routes

These aid supply chain limitations have direct impacts on millions of vulnerable people and are exacerbating need throughout Syria particularly in those areas not controlled by government. With additional challenges imposed by sanctions, importing materials essential for rehabilitation of essential infrastructure, electronics, computers, and construction materials is made even more difficult.

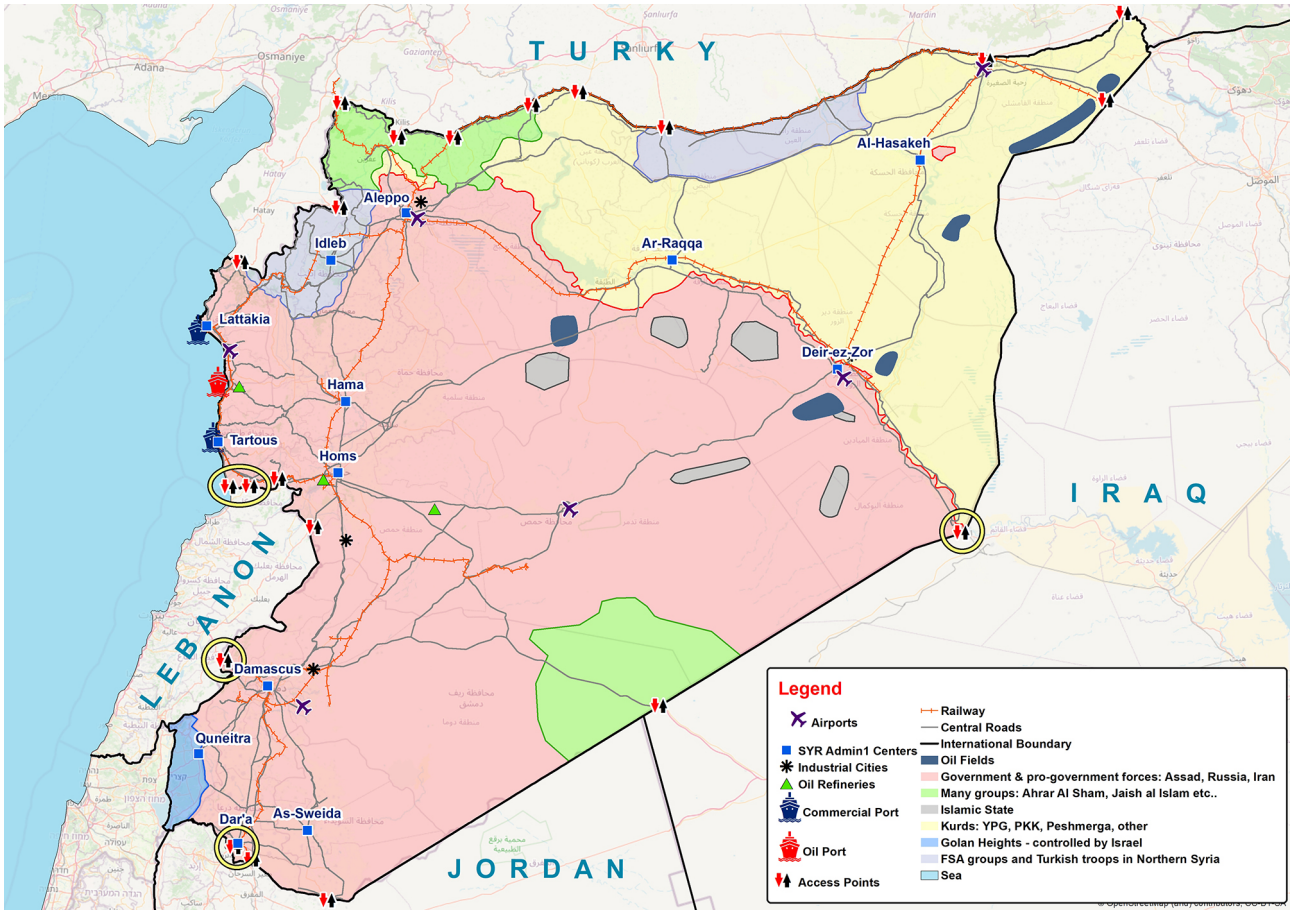
25 See: ." July 2020: Muriel Asseburg, Reconstruction in Syria: Challenges and Policy Options for the EU and its Member States, SWP Research Paper 11, Stiftung Wissenschaft und Politik German Institute for International and Security Affairs

26 UN-Habitat, Decentralisation and local governance: Pursuing area-based approaches that support accountability in the restoration of basic services and economic recovery in Syria (2022).

Figure 5: Border closures in Syria

> *"From 2014 until early 2020, the Security Council authorized four border crossings for the provision of humanitarian aid into Syria. This was reviewed and renewed annually to maintain the flow of humanitarian aid into areas that are not under the control of the Syrian government. In 2019 and 2020, Russia and China vetoed the full reauthorization of cross-border aid, removing al-Yarubiyah and al-Ramtha and then Bab al-Salam from the list of approved humanitarian border crossing points. As a result, only one border crossing, Bab al-Hawa, remains active in the current configuration under UNSC resolution 2533 as a formal humanitarian crossing point into Syria. On July 10, the cross-border mandate will expire and the last access route into Syria is at risk of being closed."*
>
> https://reliefweb.int/report/syrian-arab-republic/syria-millions-lives-stake-if-cross-border-aid-channel-closes

Figure 6: Status of border crossings into/out of Syria, Live map.



G. The UN and its influence in Syria

At an operational level, the UN is engaged deeply through most of its funds, programmes and agencies in providing critical support to Syrians both within the country, and in surrounding countries impacted by the conflict and hosting refugees. However, at a global scale, the UN, through both the General Assembly and the Security Council have long been engaged at diplomatic and political levels concerning Syria.

Figure 7: UN Global engagement with Syria

UN Resolutions and mechanisms for the investigation of crimes.

At a global level, the United Nations has been preoccupied with Syria for decades. Its long history of raising concern and subsequent Security Council and General Assembly resolutions addressing past and current issues in Syria. These resolutions since 1993 have addressed Syria's role in the Arab-Israeli wars from the early 1970's, through its 30-year occupation of Lebanon until 2005, and more recently the civil war raging since 2011. Further, the UN Human Rights Council passed its resolution S/17/1 (August 2011) establishing the: "Independent International Commission of Inquiry (IICI) on the Syrian Arab Republic" with its mandate to investigate all alleged violations of international human rights law since March 2011 in the Syrian Arab Republic. The IICI continues its work today.

Of the 22 SC Resolutions passed and implemented by the UN since 1993 UNSCR 2254 (December 2015) set out an aspirational *"…road map for a peace process in Syria, setting out an early-January (2016) timetable for United Nations-facilitated talks between the Government and opposition members, as well as the outlines of a nationwide ceasefire to begin as soon as the parties concerned had taken initial steps towards a political transition."* One year later the UN General Assembly endorsed A/RES/71/248 (December 2016) establishing the "International, Impartial and Independent Mechanism" (IIIM) to assist in the investigation and prosecution of those responsible for the most serious crimes under international law committed in Syria since March 2011.

Multiple other UN resolutions have been promulgated, however in sum, Member States have attempted over the past decade to address both the political and humanitarian impacts of the conflict from multiple angles, and there is unanimity of the fundamental principle stated within SCR 2254 that any resolution to the conflict would be a, *"…Syrian-led, Syrian-owned political transition to end the conflict… facilitated by the United Nations which would establish "credible, inclusive and non-sectarian governance"."*

In spite of the efforts of the UN and its member states however, there appears to be growing scepticism of their intentions as reflected in the recent report of the Chair of the ICII. Nevertheless, as long as the conditions provoking these resolutions continue, there is little likelihood that investments required to address the country's infrastructure and associated services will materialize, and Syrian citizens will continue to suffer their lack as noted recently by the Chair of the IICI:

"…Excellencies. Syria will go down in history as an example of the failure of multilateralism, of our inability to put aside differences for the cause of peace and security, development and human rights. I ask you, when will Member States reign in the actors over whom they have influence and cease providing arms and support for parties that commit egregious crimes? When will all constraints on aid be removed, including those caused by obstacles to cross- border or cross-line delivery, or by sanctions? When will we truly reorient efforts and energy towards making Syria a safer, more rights-respecting environment in line with interests and aspirations of the Syrian people?"

Paulo Pinhiero, Chair of the Independent International Commission of Inquiry on the Syrian Arab Republic. Closing remarks in his address to the 76th Session of the UNGA Third Committee, 25 October 2021
-quote-

In setting out the context within which the aid sector can better meet both existing deep needs within the Syrian population, and navigating possible pathways to better their living conditions by improving access to key infrastructure and services, there are political, logistic, security, and legal challenges that need to be overcome. Nevertheless it is clear that deeper poverty, deprivation and further erosion of Syrians life and livelihoods will continue if access to water, energy, sanitation, communications and transportation cannot be addressed.

04

The State of Infrastructure and Services in Syria

With a troubled history spanning decades, and with year 2022 marking 11 years of a civil war that has destroyed or damaged much of the physical, economic and social infrastructure in the country, it is no surprise that the institutions of governance at all levels have suffered as well. The in-depth assessment and analysis of governance in Syria is the subject of a separate paper in this series[27]. However, in developing holistic strategies to repair and improve infrastructure and services it is worth noting in brief the various institutional mechanisms, their strengths and weaknesses, and capacities for governing, managing, operating and delivering those services.

All sectors defined in this report have mandated institutions governing various aspects of the entire networks. These mandates define the network of institutional partners including 'communities' that any third-party agency engaging in rehabilitation or reconstruction regardless of the sector, or the scale of interventions would be required to work with. Further, there exists a wide range of applicable law and regulation governing the commissioning, operating and maintenance of all aspects of Syria's infrastructure. There are multiple references to laws requiring updating, and regulations being adapted to new conditionalities, or major gaps in legal frameworks governing all infrastructure and service sectors reviewed in this report. (For example, the limited implementation of Law 107 due to lack of competence and capacity at LAU levels, or the adaptation of existing environmental law/regulation to promote 'green' reconstruction.)

Government in Syria is structured in three primary levels i.e. National, Governorate and Local Administration Units representing respectively state, regional and municipal governance institutions. Of relevance to the infrastructure sectors covered in this paper are firstly, the Ministry of Local Administration and Environment (MoLAE) and its multiple directorates and affiliate agencies. Under Presidential decree, Law No. 18 (2016) the Ministry is responsible for a wide range of sectors including: "Securing services for citizens; community cohesion, decentralization, local government, planning, environment, reconstruction, urban regeneration, and general policy of state[28]." Secondly, at governorate and local levels, a key piece of legislation sets out the roles and responsibilities of a fully decentralised governance structure in Syria.

Law 107[29], the aspirational decentralisation strategy promulgated in 2011, envisions placing governance at the closest proximity to citizens, empowering regional and local governments to operate democratically and transparently on all aspects of the country's development. Certain functions are decentralised to the regional Governorates in coordination with the Supreme Council of the Local Administration, which has the ultimate authority, led by the Prime Minister, for implementation of Law 107. These regional functions include preparation and oversight on implementation of spatial plans at all scales within the region, and in line with priorities set out both by the state, and by local administration units at city and municipal scales. Law 107 sets out the role for local administration units, led by elected councils which "*…within the general policy of the state, are responsible for the affairs of the local administration and all the activities conducive to developing the province economically, socially, educationally, and architecturally.*[30]" This mandate includes responsibility for "*…the fields of planning, industry, agriculture, economy, commerce, education, archeology, transport, roads, irrigation, drinkable water and sanitation, electricity, medical care,*

27 UN-Habitat, Decentralisation and local governance: Pursuing area-based approaches that support accountability in the restoration of basic services and economic recovery in Syria, 2022.
28 https://en.wikipedia.org/wiki/Ministry_of_Local_Administration_and_Environment_(Syria).
29 Law 107 EnglishFormatted.pdf, Chapter 3.
30 Ibid Ch. 3, Article 30

social affairs and labor, services and public utilities, quarries and metal resources, disaster management and firefighting, traffic control and driving license centers, environment, sports and youth, and other joint projects among the administrative units."

However, as noted in the forthcoming local governance paper[31], in the 10 years following the promulgation of Law 107, shortages of finance and competent staff have limited its full implementation, and most are unable to fulfil their responsibilities to deliver even basic services. Additionally, with many infrastructure systems damaged or destroyed, services normally delivered by traditional providers; usually smaller scale private companies, are also not able to operate.

The repair and improvement of all infrastructure sectors necessarily involves mapping, planning and programming to address weaknesses and gaps both in their legal and regulatory systems, as well as capacity limitations in the institutions that govern, manage and operate them, including here certain components have been privatised, or delegated to third parties, ensuring their sustainable functions over the longer term. For these purposes, it is useful to develop a comprehensive 'typology of infrastructure'[32] including their primary components, note the institutions charged with commissioning, operating and maintaining those components, and begin building a compendium of applicable law that governs the supply and distribution of services associated with each level of the infrastructure type to determine where the weaknesses, gaps and omissions in their respective regulations exist. This typology is completed by assigning the relevant institutional structures accompanying each type - from consumer to 'owner/producer' providing a framework within which responsibility and accountability can be traced. This paper identifies key infrastructure and services as:

- Roads, bridges and public transport;
- Public spaces, parks and gardens;
- Energy and communication networks;
- Water and sanitation; and,
- Solid waste management.

Figure 8: Need for technology transfers

> *The conflict has led to a general deterioration of the capacities of the institutions responsible for environmental management in cities. However, already in 2010 the Syrian government mentioned an urgent need for "technology transfers", training and capacity building for the purposes of environmental management. (URF Thematic Paper on Environment, p. 21)*

A brief analysis of the organizational and legal frameworks governing the key infrastructure sectors covered in this report reveals minimal regulatory requirements for key resource sectors including water (and hydroelectricity), transportation, solid waste management, and development of public space, many of which are relevant in other sectors or thematic aspects of the other URF pillars, and more widely analyzed in the other URF Thematic Reports.
It is worth noting that other elements of bulk and networked infrastructure including ports (land, air and sea), social systems (housing, health, education), economic systems (agricultural, commercial, financial and market) are all in some manner inter-dependent with the partial typology of infrastructure and services noted above.

Further, both 'energy' and 'water' systems require rehabilitation throughout the network from upstream production (including refining/treatment)

31 UN-Habitat, Decentralisation and local governance: Pursuing area-based approaches that support accountability in the restoration of basic services and economic recovery in Syria, 2022

32 There are multiple examples of these typologies for useful reference. See for example: The American Society of Civil Engineers publication; "Infrastructure Report Card" which represents the organizations opinion on the condition of various infrastructure every 2–4 years.

to transmission and downstream distribution to users. Transportation infrastructure, including public transportation is limited to vehicular transport systems with movement of people and goods by air and/or rail, is not addressed. Sanitation and solid waste systems comprise both the physical and operational systems necessary for functional service delivery. Finally, issues related to procurement and rehabilitation of public space, parks and garden are primarily land management based, and to the extent that they exist within each city's Master Plans, under the aegis of local authorities.

Figure 9: Closed vs. Open Infrastructure systems

Infrastructure/services: Closed systems vs. open systems

Where systems respectively generate and distribute services, or are dependent on an external supply. "Closed systems" are the low-hanging fruit that once set for completion increase reputational values of all parties. For example closed system sectors (at sub-municipal scales) include: Waste management (liquid and solid); land administration (within the master plans for public space); transport (urban/peri-urban networks, public transport). Other areas of interest in this report are "open systems" entirely dependent on external production/transmission. Energy (all forms), Water (hydro, irrigation, industrial and domestic); Transportation (Primary and trunk roads, rail, air and marine infrastructure); Communications (telephone central and substations, linear and wireless distribution/management) are all systems that require upstream capacity to deliver services to consumers.

The following analysis first examines those **open systems** where production and transmission of energy, water, communications, and trunk roadworks are requirements to deliver downstream infrastructure and services in urban and rural settlements.

Secondly service delivery for those bulk production sectors, as well as the **closed system** sectors related to public space and waste management are examined at the urban scale and drawing on existing data in three representative cities.

Repair and replacement costing in both the global and national markets is complex in any country including those in more stable political environs. Syria, impacted internally by sanctions, conflict, inflation and devaluation of its currency, and externally with the price volatility of oil and gas, imported metals, building supplies and chemicals, as well as global transportation backlogs due to Covid, means any estimates are at best only a guide.

Global trends in developing green energy are also playing out within Syria, with several thermal energy plants built and interest and commitment to further developing renewable energy infrastructure throughout the country. This could favorably impact end-user costs in time. Nevertheless, damage to infrastructure networks is extensive, and where transition to alternate sources of energy and water generation and transmission, existing systems will require rehabilitation and upgrading.

The following sectoral assessment reviews both macro (upstream) status of open system (bulk) infrastructure including its organizational, legal and/or regulatory systems, and aspects relevant to the urban/spatial scales where the key infrastructure components have been assessed.

A. Open systems:

i. Energy:

The energy sector, comprised of oil, natural gas, hydro and renewables is overseen by multiple national authorities and governed by several legal and regulatory frameworks. Oil and natural gas are under the authority of the Ministry of Petroleum and Mineral Resources, and managed by several state-owned companies namely, Syrian Petroleum Company and separate entities for Transport, Storage and Distribution, and Gas. All these companies work through PPPs with private contractors. There is no overarching legal or regulatory framework, however legal obligations for foreign oil and gas companies are governed by case-by-case Parliamentary laws issued by the state.

All electricity generated and distributed throughout Syria is owned by the state under the authority of the Ministry of Electricity and managed by the Public Establishment for Electrical Energy Production (PEEEG) and the Public Establishment for Transmission and Distribution of Electricity PETDE), both state owned utilities. There is no specific regulatory system however the Ministry operates under Electricity Law 32 (2010) which creates space for small private operators and industry to feed energy into the national grid, by developing renewable energy sources, and shedding surplus energy respectively.

A second law, the Energy Conservation Law (2009) was enacted in recognition that Syria's oil and gas reserves were finite, and new measures were required to rationalise consumption, address inefficiencies in distribution, and promote development of alternative energy production including renewable and atomic sources[33]. The National Energy Research Center and National Atomic Energy Commission respectively have mandates for oversight, coordination, and report directly to the Prime Minister's Office. The Ministry of Water Resources has exclusive responsibility for the three major dams that produce hydroelectricity.

In its 2017 analysis of Syria's energy sector, the International Atomic Energy Agency (IAEA) determined that electricity production was distributed across the following resource sectors: Petroleum (44%); Natural Gas (41%); "Biomass" (14%); and Hydro (1%)[34].

Severely hampered access to electricity is one of the main drivers of deteriorating socio-economic conditions in the country. Between 2011 and 2021, the Syria's total electricity production dropped significantly to almost 57% and the generation capacity dropped to 65%. (See table below)

Total energy production[35]		
2011	49	billion kwH
2021	21	billion kwH
reduction	28	TWh
reduction percentage	57%	TWh
reported deficit	12	TWh

Power plants generation capacity		
2011	8500	MW
2021	3000	MW
reduction	5500	
reduction percentage	65%	

33 Country Nuclear Power Profiles 2017 Edition: Syrian Arab Republic (updated 2017).
34 ibid p.6, Fig.4
35 Ministry of Electricity (Sheikhy report)

This drop in electricity generation capacity has various causes, including:

1. *Reliance on natural gas and petroleum for energy production*
   The electricity generation sector[36] is heavily reliant on petroleum and natural gas, with a combined 87% of Syria's electricity production dependent on these resources. However, Syria's oil production dropped off a cliff in 2011, going in three years from more than 300k barrels per day to around 20k barrels per day in the years 2014-2020,[37] [38] representing a more than 90% drop in production. Furthermore, even though the country's three hydroelectric dams under the aegis of the Ministry of Water resources (Al Thaora, Tishreen, Al-Baath) represent a significant combined winter capacity of 1150 MW, dryer seasons, the limited quantities of water passing from Turkey, and their location in SDF controlled areas led to a minimum production of electricity from hydro sources. This was, however, also already true before the 2011 crisis.

2. *Damages to key power plants and distribution networks*
   Of particular importance were the disruption of the Aleppo (1,065 MW) and Zezoun (300MW), plants which combined (1365MW) make up 15% of the national energy production. Total damages to the networks, and plants accrue to 4.3 billion USD. The backlog in repairs and scheduled maintenance for other thermal power plants in 2022 are estimated by the Ministry of Electricity at more than 400 million USD.

3. *Potential renewable energy alternatives are not yet at scale.*
   As much of the oil and gas resources originate from Der-Ez-Zor and other contested areas,[39] the challenge of resource provision for the operation of thermal power plants is unlikely to be resolved soon. There are some renewable energy projects planned to address this, notably:

   33 MW - PV panels in Industrial Zone Sheikh Nagar (Aleppo);
   100 MW - PV Panels Industrial Zone Adra (Damascus);
   300 MW – PV Panels near Tishreen Energy (Damascus), which add up to 433 MW.

   Furthermore, several small PV and wind turbine projects of 1-10 MW are connecting to the grid at various locations.

   However, for renewables to make up for the lost capacity of 5000 MW, the amount of planned renewable energy projects would need to multiply 10-fold. There is some formal stimulus for this. For example, under Electricity Law 32 (2010), small private operators and industry can feed energy into the national grid, by developing renewable energy sources, and shedding surplus energy respectively. However, payment to suppliers by the national authorities is done in Syrian Pounds at the official Euro-Pound exchange rate, which severely reduces it attractiveness. The state furthermore currently does not guarantee the purchase of entire production capacities for larger projects which could have made investment more attractive by providing some security.

4. *Restrictions in access to loans and spare parts.*
   Direct damages to this sector were estimated to be about 2,8 billion USD, which does not take into consideration lost oil revenues. The sanction regime imposed by various states have complicated the import of spare parts and access to low-interest loans for repairs.

Due to the lack of total capacity, load shedding (rebalancing the supply and demand over the whole network, e.g., by switching off supply to some customers), occurs more than 18 hours a day in major regions. Load shedding has become a de facto rationing policy, and most cities only receive a few hours of electricity per day. This has led to the proliferation of thousands of small off-grid projects to address domestic demand during load shedding periods.

36 All electricity generated and distributed throughout Syria is owned by the state under the authority of the Ministry of Electricity and managed by the Public Establishment for Electrical Energy Production (PEEEG) and the Public Establishment for Transmission and Distribution of Electricity PETDE), both state owned utilities.

37 Oil and natural gas are under the authority of the Ministry of Petroleum and Mineral Resources, and managed by several state-owned companies namely, Syrian Petroleum Company and separate entities for Transport, Storage and Distribution, and Gas. All these companies work through Public Private Partnerhsips with private contractors.

38 https://www.ceicdata.com/en/indicator/syria/crude-oil-production

39 See: Oil and Gas resources map on Country Nuclear Power Profiles 2017 Edition: Syrian Arab Republic (updated 2017)

In 2020 virtually all (98,5%) energy production was under the control of the national authorities with 24.575 GWh produced and only about 383 GWh produced in SDF-controlled territories.[40] If transmissions between national authorities-held areas and SDF held areas are fully reinstated, energy deficits, currently estimated at 12TWh (representing only 48% of the total reduction in energy production between 2011-2021) may rise even more.

Contrary to the system for the supply of water, all electricity production projects contribute to and draw from the national grid. The loss of production capacity anywhere in the network is felt nationally and in all sectors.

For the Syrian people, these effects are severe and permeate all aspects of life. These include, among others:

- Access to water. With sporadic access to electricity, operating costs resulting utilization of generators increase drastically, while allowing the stations to operate only at a fraction of design capacity. Lack of access to water has led to community tensions, reduction of water intake and a significant draw on household budgets.
- Access to health. About one-third of public hospitals run on generators, deeply impacting the ability to provide care, as for example energy fluctuations can damage or hamper the adequate functioning of medical equipment and cold storages.
- Access to food. Many of the irrigated surfaces rely on electricity powered wells. Interruptions of crop irrigation can affect productivity of certain crops to up to 70%, reducing food production and leading to an increase of food prices.

40 EUI – Powerplants in Syria 2020 dashboard. https://app.powerbi.com/view?r=eyJrIjoiNTMxNjQ0YmUtNmJiMS00YmUzLThmZDMtNmRjMjM3OTRiZDMwIiwidCI6IjM3ODI2Y2RjLWUyMWMt-NGFjMS05ZGY2LTEyYWNlNzMwNDhlMiIsImMiOjl9&pageName=ReportSection. UN-Habitat,Pursuing environmental sustainability and climate resilience through urban recovery in Syria, 2022.

ii. Water.

The water sector is completely under the aegis of the Ministry of Water Resources and its various Directorates for (inter alia) irrigation, drinking water, sanitation, and international waters and dams. Within each Governorate a Public Establishment for Water and Sanitation manages regional level resources and networks which represent the only regulatory authorities at sub-national scale.

The legal/regulatory frameworks for water resource management in Syria, are dated and insufficient for the scale of rehabilitation and upgrading required as a result of damages and degradation of the sector over the course of the conflict. This includes new or updated regulations to address: the over-exploitation of groundwater for agricultural purpose; desertification as a result of climate change, pollution as a result of lack of sufficient water for sanitation and other issues which further exacerbate water scarcity and impact people and communities in parts of Syria. As it stands, the sector is co-governed on issues related to water resource scarcity and pollution by MoLAE, MoWR and MoAAR under the following regulatory instruments[41]:

Environmental challenges	Key actors		Existing institutional plans and regulations
	SDG	**Ministry**	
Water resource scarcity and pollution	6 & 12	MoLAE MoWR MoAAR	2012 - Law No. 12 on Environment 2010 - Law No. 26 on Regional Planning 2011 - Decree 107 on Decentralisation (under review) 2011 - 10th Five-Year Plan (2007-2011) which set out to establish 200 water treatment plants 2009 - Standard No./3474 to prevent disposal of treated water in watersheds. 2008 - Standard No./2580 to prevent treated water in the general sewerage network. 2005 - Law 31 on water resources protection and efficient water consumption and supply.2003 - National strategy and action plan for the environment

The water sector challenges in Syria are multiple, impacting all aspects of Syrian society.
Access to water in Syria due to its arid and semi-arid geography has historically been tenuous. Since the conflict began however, much of the infrastructure required to produce, store, treat, distribute and dispose of water has been damaged or destroyed.

Syria sources all its water from rainwater, permanent and temporary rivers, springs, and wells. However, war, climate change, and economic crises have resulted in physical damage to production capacity, degraded maintenance and management of water resources, and provoked illegal over-tapping of wells and aquifers. As noted in the UN-Habitat Thematic Paper on Environment and Climate Resilience, also produced as part of this series, *"Droughts, less rain and higher temperatures leading to increasing water scarcity, land degradation, desertification, and forest fires are some of the stressors that impact both rural and urban Syria with accelerating effects."*

Three key dams, the Euphrates, Tishreen and Al-Baath produce hydro-electric power, irrigation for large scale agriculture, regulate water flows providing flood protection, and stimulate further agricultural development along their shores. In a report on costing of various infrastructure repairs undertaken by UN Habitat, the combined damage estimates are in the order of US$ 1.8 billion solely for repairs and upgrading the dams and hydro-electric generation. Additional required sub-station and transmission systems rehabilitation and construction costs are not tallied but would be comparative with other

41 UN-Habitat,Pursuing environmental sustainability and climate resilience through urban recovery in Syria, 2022.

countries. Further, water storage dams (including the above three, provide capacity of around 19 billion cubic meters in 163 basins throughout the country. These dams distribute the majority of Syria's water consumption sectors including agriculture (at 88% of all water produced the largest consumer), industry and commercial users, and individual drinking/ domestic use.[42]

Access to treated clean water for domestic consumption has also diminished during the course of the conflict. While comprehensive costing for rehabilitation of water filtration and treatment facilities are limited, indications are that many of these are no longer functional[43].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iii. Communication:

'Communication' refers to all aspects of ICT sector and includes fixed and mobile networks including access to broadband, internet, and trunk infrastructure as well as postal and package delivery systems.

Syria's communication system is structured around: three key submarine cable systems, (Alasia, BERYTAR, UGARIT) landing in Tartus, and linking to Cyprus, Lebanon and Egypt networks[44]. There are additionally two satellite supported earth stations, (Intelsat and Intersputnik) and cable/microwave relays to Iraq, Jordan, Iraq and Turkey.

The telecoms sector has been heavily impacted as a result of the war leading to frequent disruptions to the entire network. Operators continue to attempt repairs but lack of basic infrastructure including electricity and security hamper their efforts[45].

As of 2020, there were 2.89 million (or 17 out of 100 persons) subscribers to Syria Telecom's fixed line

42 UN-Habitat, Costing of the infrastructure units in Syria, 2020.
43 See also: Too Big to Fail, May 2021, ICRC, and Collapse of Infrastructure, April 2021, ICRC Syria
44 See: https://www.submarinenetworks.com/en/alasia.
45 https://www.cia.gov/the-world-factbook/countries/syria/#communications.

Figure 10: Relevance of ICT in development

> **Development Relevance:** The quality of an economy's infrastructure, including power and communications, is an important element in investment decisions for both domestic and foreign investors. Government effort alone is not enough to meet the need for investments in modern infrastructure; public-private partnerships, especially those involving local providers and financiers, are critical for lowering costs and delivering value for money. In telecommunications, competition in the marketplace, along with sound regulation, is lowering costs, improving quality, and easing access to services around the globe.
>
> *International Telecom Union, 2021*

network. This is roughly 67% of subscribers in 2010[46]. For individual and household fixed line connections, this trend is similar in many other countries as cellular telephony expands and improves.

Mobile penetration according to the International Telecoms Union (ITU) is fairly high for the region but remains limited to 3G levels for the majority of the population, with some access to 3G LTE. Two mobile companies, Syriatel and MTN provide access through 'build-operate-transfer' (BOT) concessions with the government. While figures vary, in 2020 there were just over 95 mobile subscribers estimated per 100 people, down from a 2019 peak of 114 per 100 people.

Rural and remote areas continue to rely on satellite communications which are currently expensive and often not secure.

Fixed broadband subscriptions remain relatively low with less than 9% of the population paying for access to high-speed public internet service. Again, statistics vary with the ITU reporting 2017 values and the CIA World Factbook reporting 2018/19 estimates for internet users and secure internet servers[47]. However, both sources note the growth in access for internet users since 2010 to roughly 34% of the population served by a distribution of 227 secure servers per 1 million people.

46 All data from International Telecom Union (ITU), see: https://data.worldbank.org/indicator/IT.CEL.SETS.P2?end=2020&locations=SY&start=2010&view=chart.
47 Ibid: Defined by ITU as: "The number of distinct, publicly-trusted TLS/SSL certificates found in the Netcraft Secure Server Survey."

The state of Syria's postal system:
Syria Post is a state-owned company that was founded on October 7, 1975, to contribute and improve the country's social, economic, and scientific development. It is overseen by the Syrian Telecommunication and Post Regulatory Authority and is responsible for all postal and correspondence services in the country.

However, as with all services in Syria, the postal system has been impacted by the conflict, and is reliable only in certain parts of the country. Access to correspondence, and in particular goods normally delivered through the postal system, are increasingly provided by private international and local delivery organizations including DHL, UPS and others with offices and logistics capacity in Syria.

iv. Transportation

The Ministry of Transport is responsible for all forms of transportation infrastructure in Syria including air, rail and land-based transportation. As with other Ministries, there are a range of sector specific Public Institutions, General Directorates, and joint cross-border companies that administer all aspects of transportation throughout the country.[48] At a regional level, governorates assume authority over regional transportation infrastructure in all three sectors.

Multiple sources[49] state that before the conflict, the major road networks throughout Syria were in poor condition because of poor construction, heavy traffic loads, and lack of maintenance. Since 2011 however, in addition to damage throughout Syria's road networks and the destruction of key bridges, rubble and debris have accumulated on most urban networks making passage difficult and, in some cases leaving certain neighborhoods completely cut off. Work, schools, recreation sites, health facilities and market access are all impacted.

48 Ministry of Transport website: http://mot.gov.sy/web/orginal/spage.php?cid=1&id=18.
49 Case Study – The State of Aleppo's Roads, Colombia University 2016 (with data from UNOSAT, UNITAR).
Also article: Syria's Roads – Waiting for Investors https://english.enabbaladi.net/archives/2019/09/syrias-roads-waiting-for-investors/.

B. Urban context for three cities, closed systems:

To find common ground for improving aspects of the infrastructure required to meet immediate needs for urban residents in Syria, a review of local (or closed system) infrastructure requirements and priorities for stakeholders in Aleppo, Dar'a, and Deir-ez-Zor (See Annex A: Summary City Profiles) was considered for the purposes of this analysis as representative of all other Syrian cities. An assessment of the cross-cutting and common features of these three cities, and suggestions related to supporting minimal functionality of these sectors in future follows below. Further, an example of a detailed damage cost assessment for Homs city is presented as indicative of typical costing for infrastructure repairs relevant to other cities. The damages to the urban fabric in cities did not affect the housing stock, but rather affected the local infrastructure networks and their service facilities (water, sewage, electricity, etc.) at the neighborhoo

i. Aleppo

After four years of crisis from July 2012 to December 2016, Aleppo was recognized as the most damaged city in Syria.

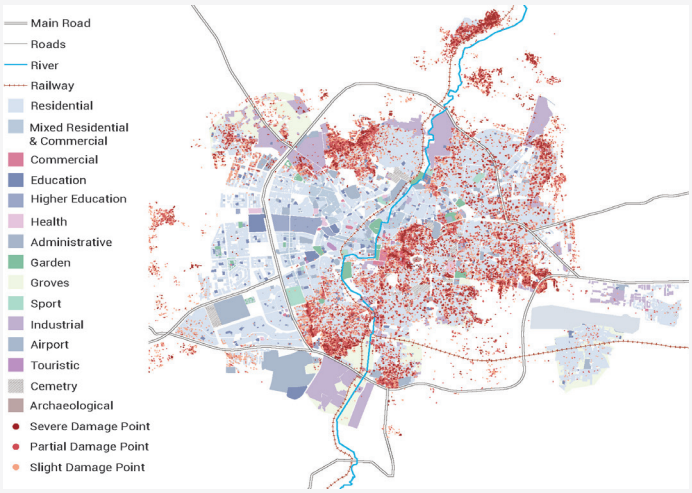
Damage to buildings is extensive and although there has not been a systematic detailed assessment of habitability of damaged buildings, demolitions have taken place across the city. Additionally, some damaged buildings have collapsed, resulting in fatalities.

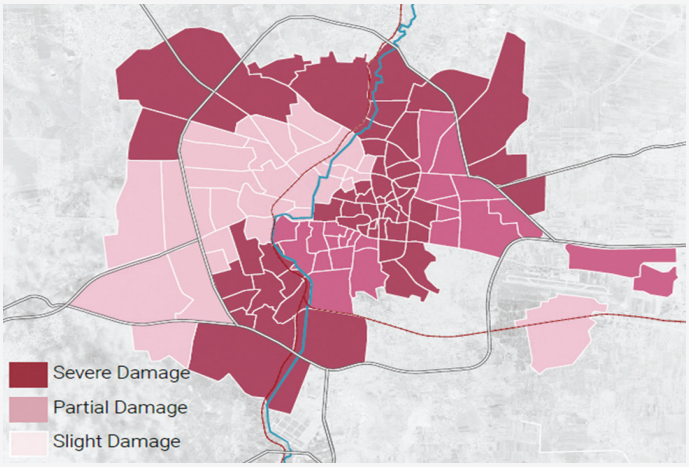
The destruction particularly affected the old city and Aleppo's eastern and southern areas.
Rapid damage assessment through satellite imagery concludes:

- That 46% of neighborhoods area is severely damaged.
- 14% suffers partial moderate damage.
- 40% is slightly / not damaged.

Residential buildings are completely rehabilitated by residents, after national and international organizations undertake the rehabilitation of public spaces and roads.

The Aleppo city engineers' syndicate is highly involved in the rehabilitation process along with the local community.



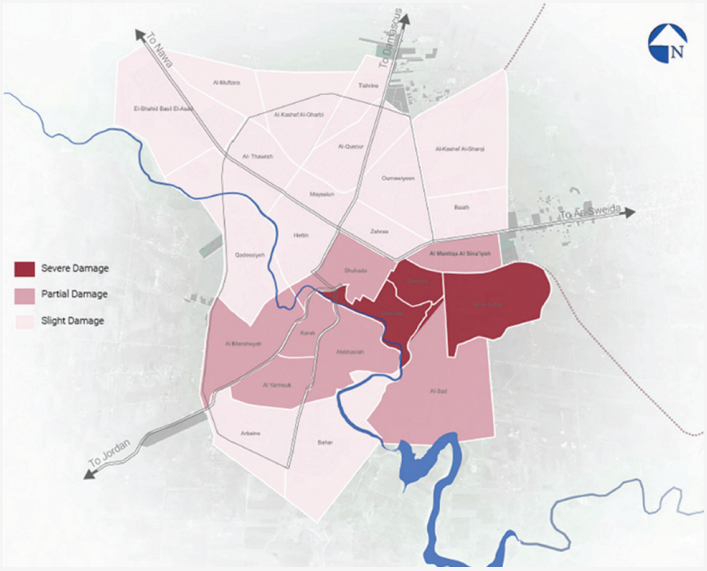


Damages in Aleppo city at Neighborhoods level, UN Habitat -Aleppo city profile, 2020

ii. Dar'a

In terms of overall area damage in Dar'a city, including buildings, and networks, the analysis concludes that:

- 3 Neighborhoods suffered severe damage to building. structure and infrastructure (mostly in the camp area).
- 7 Neighborhoods have been partially damaged (central neighborhoods)
- 15 Neighborhoods have slight or no damages (northern and southern neighborhoods).

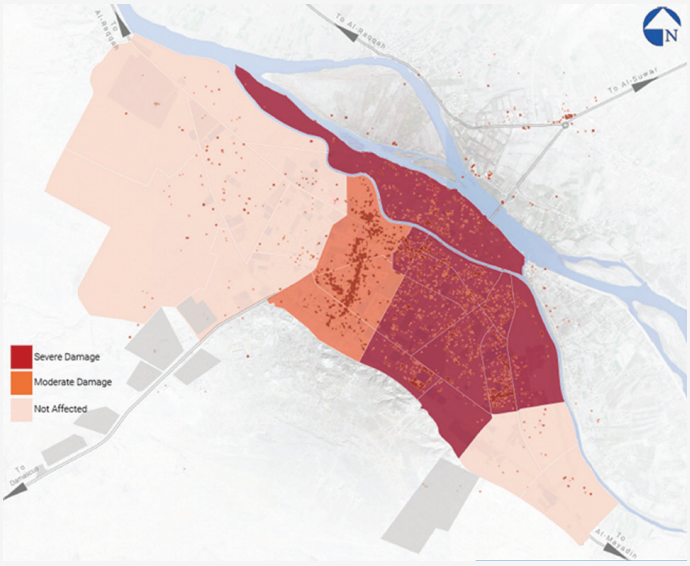


Damages in Dar'a city at Neighborhoods level, UN Habitat - Dar'a city profile, 2020

iii. Deir-ez-Zor

Damage assessment was conducted in 2018 by Deir-ez-Zor municipality in coordination with the engineer's syndicate. It was concluded that:
39% of pre-crisis residential areas have been damaged (moderate to severe damage):

- 58,686 Housing units are not damaged.
- 28,997 Housing units are partially damaged.
- 9,184 Housing units are severely damaged

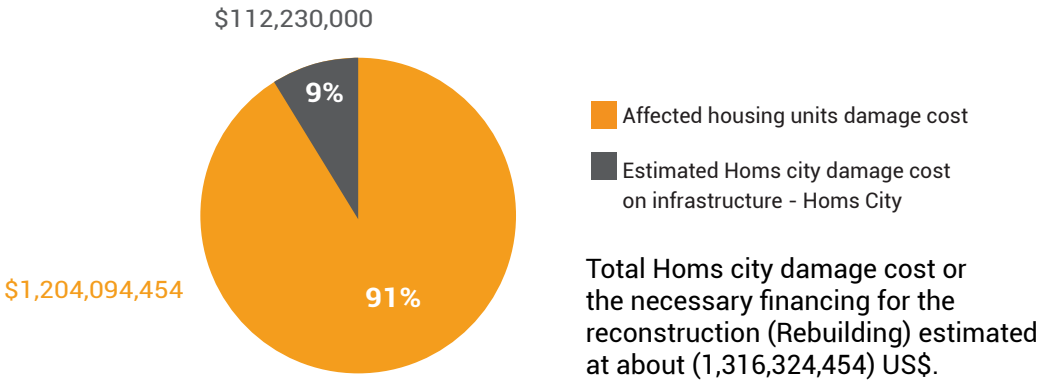


Damages in Deir-ez-Zor city at Neighborhoods level, UN Habitat - Deir-ez-Zor city profile, 2020

Damage costing analysis – Homs city study[50]

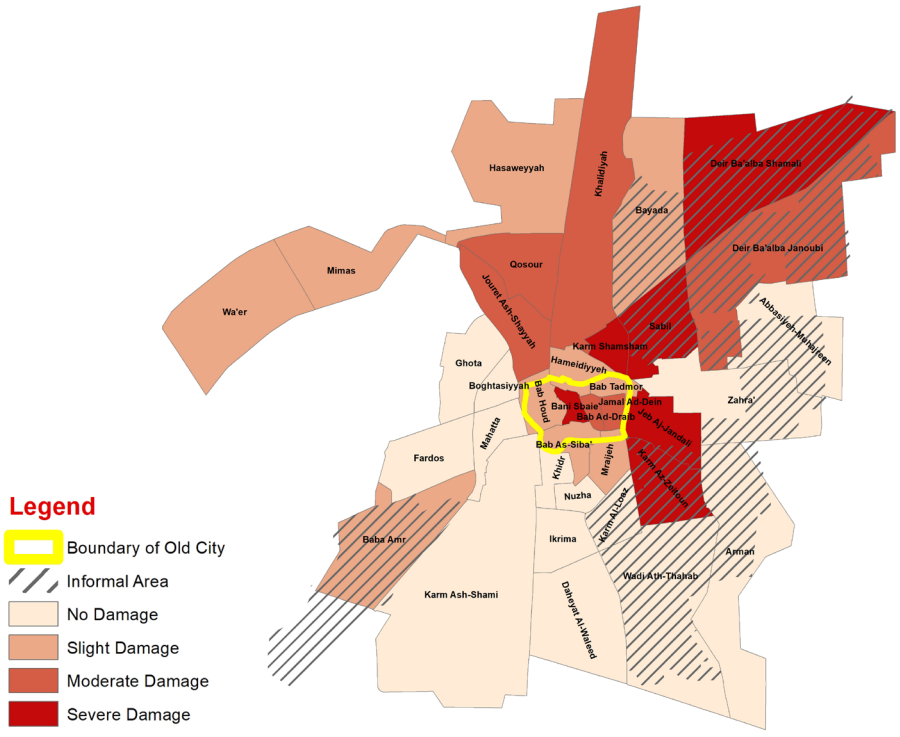
At the beginning of the year 2022, through the assessment of the damage to the infrastructure Fig(12), the value of the lost opportunities because of the conflict in the city of Homs is supposed to be estimated, as the city was expanding in all sectors at a rate of more than two percent annually. The results showed a cost-of-damage analysis, that costs of damages to the housing stock in the city constituted the largest proportion of the damages in the city and constituted about 91 percent of the total costs.

Figure 11: Total damage cost in Homs City, 2022



Total Homs city damage cost or the necessary financing for the reconstruction (Rebuilding) estimated at about (1,316,324,454) US$.

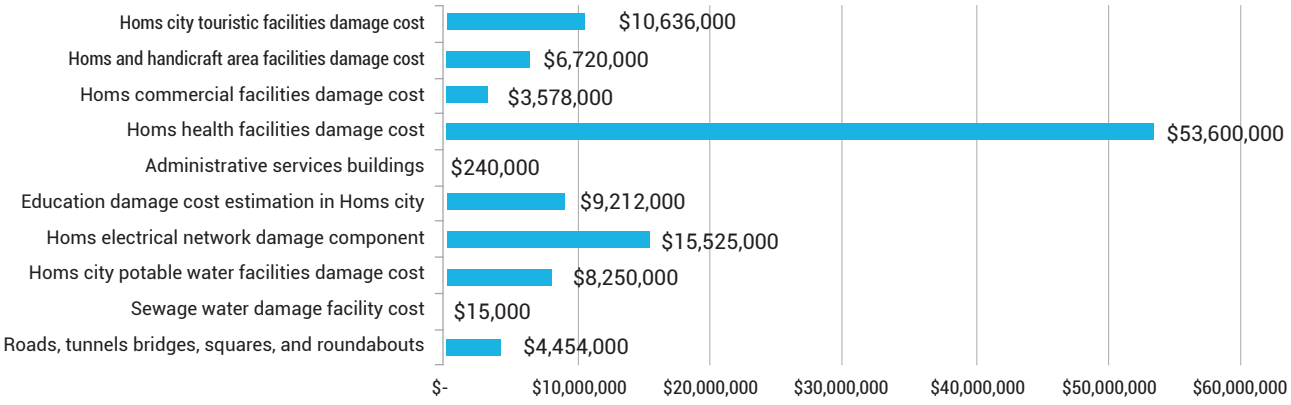
Figure 12: Damages in Homs city at Neighborhoods level, UN Habitat - Homs response plan & Digital tools/URF, 2022



50 URF- Homs response plan & Digital tools Homs city - Urban damage costing, 2022

The damage costs on infrastructure networks and service facilities in the city were analyzed according to the following (Road, sewerages, drinking water, electricity and communication, health education, commercial, Tourism, administrative services) in the city"(Fig 13)

Figure 13: Costs of damage to infrastructure networks and service facilities in the city of Homs



iv. Analysis and observations

General observations reveal common problems and challenges across all three cities in relation to the infrastructure sectors reviewed in this report. These could therefore be considered somewhat generic in infrastructural challenges across all cities directly affected by the conflict in Syria. With varying degrees in depth and scale even within discrete spatial scales, smaller 'quick win' interventions are natural entry points for programming, providing they eventually contribute to medium to longer term objectives for fully restored functionality of services for affected populations. This particularly applies to the imperative within the HRP to invest in basic service provision, where opportunities for future aid programmes can leverage these early investments for future improvements.

In addition to the similar damage and recovery elements within the city profiles, all cities report the deterioration of local public service capacity at municipal and regional levels, which in turn creates challenges for full implementation of laws promulgated to facilitate decentralisation. These are key deficiencies particularly where mandates to own, rehabilitate, finance, manage, and generate revenues from service delivery are passed down to the municipal authorities, and ongoing technical support programmes are essential capacity building requirements complimenting other infrastructure projects underway, regardless of the functional thresholds planned.

Under appropriate political conditions, situations where destruction or damage to infrastructure as a result of war or other disasters can provide opportunities to leapfrog longer term development trajectories. Particularly in urban environments where pre-damage infrastructure systems were inefficient, old and deteriorating, or simply unsustainable and ultimately targeted for upgrading, opportunities for modernisation using current technology and materials, for example can be taken advantage of. In the case of Syria, where conflict has caused widespread damage and disruption of most urban and rural services supplied through its infrastructure networks, there exists opportunities for upgrading and modernization should the conditions for reconstruction become possible.

Where previous physical and institutional weaknesses compromised services, or where unsustainable exploitation of resources damaged the environment, or where new technology has emerged increasing sustainability and efficiency; all provide space to leverage strategic inputs to restore service functionality with better outcomes. These efforts are not without their own challenges. However, achieving improved local public service delivery outcomes is

possible if adequate recovery plans[51] are in place prior to major works being undertaken.

Given that mobilisation of large-scale financing to rehabilitate key infrastructure is unlikely to occur for some time, and unlocking barriers imposed by sanctions less likely, maximising what limited resources are available through aid funding is critical to improve lives for urban residents. While currently very low, improved local authority revenue capacity may contribute to the self-financing of smaller scale infrastructure rehabilitation efforts The immediate focus should be on strengthened own-source revenue collection by local authorities, with related transparency measures to demonstrate the use of own-source revenues to tax- and fee-payers, and develop a more clear inclination towards accountability in local public service provision in general, in line with Law 107. These issues are addressed in more detail in the URF local governance paper.

These resources include leveraging humanitarian aid used for temporary infrastructure, human resources and expertise, and minimal funding earmarked for key infrastructure improvements. Furthermore, as all sectors assessed in this report are in some manner interlinked to broader upstream systems, visioning a future state of 'maximal functionality' that builds on catalytic early interventions to create forward momentum and advance the restoration of service functionality, eliminates wasted capital, and maximise the impact of minimal functionality thresholds in neighborhoods where aid agencies are working. In this planning scenario it is critical that all efforts by all stakeholders including aid agencies, are 'joined up', i.e. Ensuring no 'investment' within this continuum is lost.

The URF's 'recovery ladder' approach where a continuum of linked inputs categorized as Absorptive, Adaptive or Transformational is useful in planning immediate, medium and longer-term impact activities that set baselines for resilient recovery. Within this framework and typically throughout human settlements in Syria, there are a range of potential interventions that could meet the above criteria and achieve the objectives of meeting critical need, while leveraging other agency inputs, and creating sufficient momentum for stakeholders to play key roles in their own recovery and future sustainable development. Some examples to illustrate this approach are suggested in the following table:

City/Inputs:	Absorptive	Adaptive	Transformational
Aleppo: Energy Water Communications Transport Sanitation Public Space	Temporary solutions focusing on equitable energy access for all such as provision of generators and fuel in areas not receiving or having limited access to electricity.	Rehabilitate or replace damaged transmission poles (permanent) and feed sub-grids with temporary generator output; (which then become permanent back up resources once grid is functional)	Introduce, where supplies are available, solar street and public space lighting permanently reducing demand on grid and creating market space for smaller-scale renewable entrepreneurs.
Dar'a: Energy Water Communications Transport Sanitation Public Space	Reducing groundwater pollution by providing small-scale primary sedimentation basins and plantation ponds for treating wastewater in areas not connected to the main sewerage network	Providing additional plantation ponds for primary water treatment prior to outflow into sewerage estuaries and/or recycling for irrigation.	Develop existing (defunct) water treatment plant infrastructure for non-mechanical treatment of larger volumes of wastewater until sufficient capital is available for rehabilitation of plant and sewerage network.
Deir-ez-Zour: Energy Water Communications Transport Sanitation Public Space	Clear rubble and debris along key transportation routes providing access and egress for solid waste removal to both temporary dump sites.	Provision of additional segregated [e.g., Organics, paper, plastics, glass, and metals] solid waste containers for community/neighborhood -scale disposal [and recycling].	Rehabilitate primary landfill site and equip with necessary compaction and earth-moving machinery and waste incineration equipment.

51 Recovery Plans have been developed by UN Habitat for 83 locations.

Note 1: These are illustrative examples; all of which reflect common needs in all cities and meant as indicative of linked/incremental planning through the recovery ladder approach. They represent the principle of "working small – delivering large" as each intervention can be considered 'transformative' leading to the next within an integrated continuum. There are multiple other entry points noted in the City Recovery Plans which can be implemented in a comparable manner. In general, these should be least-cost, high impact[52] inputs meeting immediate needs, but setting baseline investments linked to future improvements, and positively impacting other linked sectors.

Note 2: A comprehensive stocktaking of inputs by all parties in all cities (agencies, civil society organisations, and/or government) such as the 4WS mapping should be monitored in real time, to ensure opportunities for subsidiarity can be taken. Determining for each sector, who is doing what, how that input could be leveraged (i.e. How does step 1 influence/benefit step 2…), who could do the leveraging, and who, or what institution would inherit and continue operating without further assistance, will establish more sustainable pathways to recovery, exit planning and eventual further development of both closed and open system infrastructure.

Note 3: Within the limitations imposed by sanctions on supply chains for infrastructure components, and the threshold of minimal functionality of infrastructure and associated services, the development 'ceiling' would be where repair/rehabilitation trajectories end with transformational inputs that will contribute in time to longer term recovery and development trajectories.

Note 4: As noted throughout the three city profiles / recovery plans, governance capacity constraints exist at both municipal and governorate levels.

Note 5: A guiding principle for costing of infrastructure rehabilitation should consider least-cost/highest impact assessments within a full recovery continuum that recognizes inter-dependency across all sectors and where 'impact' (also) catalyzes both a positive influence on upstream objectives for each sector, as well as incremental influence on associated systems.

However, in addition to the global constraints outlined in Section three above, there remains a series of challenges to consider and overcome in planning and programming repairs and improvements to key infrastructure sectors in a manner that contributes to longer term goals of building sustainable and resilient service delivery for all Syrian citizens.

52 There are multiple useful tools for analyzing least cost highest impact interventions and activities. Many are modelled on economic 'return on investment' (ROI) methods, others specific to certain sectors, and still others that can be adapted to social or development gains. In the case of Syria, these could be applied throughout the stakeholder hierarchies from individuals, to communities, and to various levels of governance.

05

Preconditions for transitioning from humanitarian to recovery responses

The previous sections outlined how national and international political contexts in Syria constrain all aid delivery systems and represent a complex set of limiting factors that make the prospect of achieving "…widest and most lasting impact" for larger-scale infrastructure rehabilitation somewhat unrealistic at present. At operational levels, there exist additional challenges that, while typical in many humanitarian scenarios, are further complicated in Syria due to these factors. These include coordination and coherence challenges amongst hundreds of organizations, differing operational paradigms addressing mandates and due diligence, positioning aid appropriately within relief-recovery trajectories, multiple approaches to 'resilient recovery' and emerging shifts in donor priorities, among others.

A. Multiple agencies - multiple mandates

There are a large number of aid agencies present in Syria. For example, some 160 international organizations were included in the Syrian Humanitarian Response Plan 2021. According to the OCHA FTS (Financial Tracking Service), these agencies together appealed for US$ 1.752 billion for a range of activities in support of Syrian citizens. These organizations work with hundreds of local NGOs, community groups, product and service providers, contractors and other stakeholders and in the process provide valuable wages for thousands of Syrians.

However, as in most countries in need of humanitarian or any other aid – the number of external organizations operating in-country with finite aid funds, generates inter-agency friction, pressure, and competition that often results in discontinuity and isolated, disconnected programmes that foster nonv-subsidiarity and undermine collaboration. Furthermore, agencies with specific humanitarian mandates are often called upon to implement larger-scale projects delivering temporary infrastructure including supply of water, sanitation, shelter/housing, education and health facilities, for example, often with limited coherence with longer-term urbanization or development aims.

B. Limited wiggle-room within humanitarian principles

The imperative for humanitarian action is clearly stated in the Codes of Conduct, Humanitarian Charter, and Sphere Project's Minimum Standards for Humanitarian Response. These are bolstered by UN GA (General Assembly) Resolutions 46/182 (1991) and 58/14 (2004) which articulate the four Core Principles of humanitarian action. These are: Humanity, Neutrality, Impartiality and Independence[53].

The International Red Cross and Red Crescent Movement, since the proclamation of its Fundamental Principles during its 20th International Conference in 1965 further adds: Voluntary Service; Unity; and Universality[54].

These core principles guide the work of hundreds of humanitarian organizations and establish both ethical and practical frameworks ensuring that those in need receive what is available. Furthermore, with the principles of neutrality and impartiality, and the imperative to engage with ALL parties to ensure access and ability to meet the needs of the most vulnerable populations, humanitarian organizations are (usually) enabled to operate across and within conflict zones. In Syria, this principle ensures to the extent possible, access by some organizations in militarized areas controlled by opposing forces.

However, also a key aspect of the 'Impartiality' principle is the limitation that "Humanitarian action must be carried out on the basis of need alone". This aspect of the principle is widely and diversely defined both by humanitarian and 'development' based agencies, donors, governments and parties to conflict. This principle demands that both donors and aid agencies do not deliver support outside that which is required to meet immediate needs. This is the key principle defining the schism between humanitarian and longer-term recovery, rehabilitation and development-based activity, and whilst long recognized by most on both sides of the 'divide' there has been little movement to adjust this principle globally to enable more effective subsidiarity across the timelines of humanitarian, recovery/reconstruction and peace-building action.

This clear divide is unequivocally stated in multiple documents including most importantly the "Parameters and Principles of UN Assistance in Syria" in the fifth parameter, i.e. *"Only once there is a genuine and inclusive political transition negotiated by the parties, would the UN be ready to facilitate reconstruction"*[55][56] Implementation of these parameters and principles will be overseen by an Inter-Agency Task Force bound by rigorous standards *"…with the view to taking all reasonable steps to avoid the diversion of or interference with aid assistance."* A *"Regional Dialogue Mechanism on the Principled Delivery of Assistance in Syria"* was established in 2021 to serve as a platform for debate and dialogue between the UNCT and donors on due diligence related to aid in Syria, within the framework of the Principles and Parameters.

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53 ***Humanity:*** Human suffering must be addressed wherever it is found. The purpose of humanitarian action is to protect life and health and ensure respect for human beings.
Neutrality: Humanitarian actors must not take sides in hostilities or engage in controversies of a political, racial, religious or ideological nature.
Impartiality: Humanitarian action must be carried out on the basis of need alone, giving priority to the most urgent cases of distress and making no distinctions on the basis of nationality, race, gender, religious belief, class or political opinions
Independence: Humanitarian action must be autonomous from the political, economic, military or other objectives that any actor may hold with regard to areas where humanitarian action is being implemented.

54 (see: OCHA on Message "Humanitarian Principles" June 2012) https://www.unocha.org/sites/dms/Documents/OOM-humanitarianprinciples_eng_June12.pdf.

55 Parameters and Principles of UN Assistance in Syria, October 2017.

56 The 'principles' largely mirror the humanitarian principles with the additional directive, *"The UN shall* ***work directly with communities and households, such that UN assistance is delivered with uniformity throughout Syria, regardless of zones of influence."*** The parameters make reference to longer term development-oriented activities are outside the defined humanitarian remit *"…will need to be reflected in other frameworks that are by nature a longer negotiation with government."* due to the complexity of the legal and political context in Syria.

C. Preconditions for a transition to recovery and stabilisation

Beyond the universal "Do No Harm" principle, the UN Charter, and the various UN resolutions related to human rights there are no parallel universal principles or codes of conduct guiding the work of organizations engaged in resilience/longer term development programming. There are a myriad of bespoke internal performance and due diligence policies such as those used by the development banks, agencies, funds and programmes of the UN, among others, however they are not uniform and demand different standards for different entities.

This includes engagement within that 'grey area' where the demand for humanitarian support wanes sufficiently for development partners to engage more deeply in recovery, reconstruction, and ultimately sustainable development. At an existential level, the Sustainable Development Goals do set out a universally accepted framework within which recovery, reconstruction and development work may function (please see SDG 11+ paper as part of the URF series which outlines a model for monitoring using SDGs). Other global normative frameworks also provide guidance for development organizations including those related to the UN such as the Sendai Framework for Disaster Risk Reduction, and the 'New Urban Agenda' among others. None of these however provide more robust accountability, risk mitigation or the due diligence requirements demanded of agencies working in humanitarian environs. In Syria, as a precondition to moving beyond direct immediate needs for aid; donors, agencies and other stakeholders have developed several tools to address this gap in order to extend the support horizon to address, within the acceptable thresholds of minimal functionality, resilience and recovery needs for infrastructure and services.

i. First precondition: managing risk and due diligence

At a more grounded level, certain operations of aid agencies in Syria are developing programmes within the framework of 'Environmental and Social Safeguards' (ESS) systems; a set of social, environmental and conflict sensitive/due diligence measures providing oversight and risk management frameworks. An ESS mechanism ensures, through cyclical 'scans', that project viability is maintained from design through implementation and completion. 'Risks' are primarily focused on emerging conditions however, there are also due diligence requirements to prevent misappropriation or usurpation of funds or project assets to exclusionary individuals or institutions.

An additional risk management framework specifically related to land use also provides clear guidelines for agencies engaged is a wide range of activities including: the rental of land, housing and warehouses by the UN; Explosive Remnants of War (ERW)/landmine clearance; debris management; shelter and shop rehabilitation; infrastructure and public space rehabilitation; and land-based agricultural intervention. UN Habitat's "Due Diligence for Land-Based Programming[57]" builds on housing, land and property (HLP) rights experience in post-conflict environments where; mass return and resettlement, limitations in governance, and weak institutional capacity for land administration including restoration of lost HLP rights, can trigger secondary or tertiary conflict.

Both ESS and HLP frameworks are useful monitoring approaches for aid programming related to restoration of infrastructure to minimal functionality; and ensuring rights to housing, land and property are recognized, particularly regarding debris removal and disposal, easements for various distributed infrastructure networks, public space, and land and property use by international agencies, within both formal and Informal areas in Syrian cities. Further, both systems offer guidance on conflict-sensitive programme assessments and analysis

Neither sets of operational due diligence systems make reference to an obligation, or even recommendations for agencies in both humanitarian and longer-term recovery contexts to forge alliances,

57 UN-Habitat, Technical Guidance Notes, Due Diligence for Land-Based Programming, 2022.

agreements or collaboration to link and transition humanitarian efforts with recovery/reconstruction activities. Such principles of subsidiarity across the humanitarian-development divide would ensure continuity of aid throughout the trajectories of crisis to stable states and avoid wasting humanitarian 'capital[58]'. However, together they form an operational framework within which progress can be made rehabilitating critical infrastructure and services, improve the lives of Syrians and mitigate reputational, operational and ethical risk for donors, agencies, partners, and communities.

ii. Second precondition: formal request for support

A second precondition to engaging the UN agencies, funds and programmes in resilience programming, and as noted in the 'Parameters' policy, is that of a formal request by a Member State for support. The process is generally led by a Foreign Ministry delivering on behalf of the state or one or several line Ministries, a written request for assistance from the United Nations. This is not a precondition normally required for humanitarian operations, and as donors and international leaders condemn the current government as illegitimate, and those in control of other areas of the country not representative nationally, no credible 'partners' for development can be engaged. However, within the pretext of 'common ground, common purpose' relationships between various line ministries, local authorities may provide fewer formal barriers to engaging appropriate partners in setting longer-term goals and delivering early inputs to achieving them. In Syria, whilst control for planning and development is legally within the responsibilities of local authorities as regulated in Law 107, practically most decision taking remains under the authority of regional or national authorities due to capacity constraints within LAU's and limited implementation of the laws on decentralisation. Against such a backdrop, a modality for international support that puts an emphasis on accountability in local public service delivery, whilst increasing the space for civic engagement and encouraging sustainable recovery at different levels may prove highly valuable in terms of generating 'acceptable outcomes' for the Syrian people.

D. Wasted capital resulting from different aid paradigms

These two diverse engagement paradigms are generally and historically incompatible. Given that most donor countries fund both sides of this divide there exist in these countries parallel, often completely ring-fenced resources. This separation, however impractical, is generally recognized as one of the weaknesses in the international aid architecture. The strict adherence to the Humanitarian Core Principles, whilst protecting humanitarian space, prevents humanitarian organizations from 'investing' in any form of permanent infrastructure that might be perceived as contributing to aid dependence or venturing into recovery/reconstruction realms. On the other side, donors funding development agencies working in disaster or conflict affected countries limit (or defer) budgets for immediate measures projects leading to larger scale longer term recovery and reconstruction work when ongoing humanitarian programming is underway. These schisms regularly result in 'wasted capital' when millions may be spent on the commissioning and operation of large scale, temporary' IDP- and refugee-centric infrastructures that are eventually bulldozed, buried, or simply abandoned is one example, while other smaller scale investments such as hastily erected schools, health facilities, water systems wither as operational support from aid agencies eventually runs out of resources[59]. In virtually all countries in humanitarian

58 "Capital" in this context refers to the investments made in temporary infrastructure – for example, water production systems, liquid waste management systems, or in some cases (though not necessarily in Syria) construction of temporary road systems for food/medical aid transport.

59 One exception was the 1996 "Linking Relief, Recovery and Development"; a due diligence policy created by the European Commission as a means of streamlining and coordinating programmes funded by (then) DG-ECHO and other longer term recovery and development funding entities. However, while comprehensive and clearly forward thinking, it was never fully implemented. See: Improving European Development Cooperation: The Link Between Relief, Rehabilitation and Development, Actionaid, 2003.

crisis situations however, the issue of transition to early, medium, and longer-term recovery remains poorly addressed, and rarely accomplished smoothly.

This 'transition' is often mistakenly characterised as a linear process where Relief, Rehabilitation and Reconstruction, and Recovery are treated as sequential stages of development for countries experiencing and emerging from crisis. Consequently, aid flows (and expertise) remain partitioned and opportunities to advance through this continuum as and where conditions permit, such as at smaller discrete spatial scales in more stable areas are overlooked or under-resourced.

It is at these spatial scales where opportunities to transition through this humanitarian-development-peacebuilding divide ("triple nexus") can most often succeed through area-based planning and programming.

E. Positioning aid within the continuum of relief to resilient recovery

Relief efforts are in general, wholly within in the domain of humanitarian organizations. As the name implies, activities are specifically focused on the provision of life saving and life-preserving resources for victims and survivors of crisis. Rooted in the Humanitarian Principles as noted above, there is no mandate for provision of any form of permanent assets, rather services and associated infrastructure are temporarily provided until humanitarian assistance is no longer required. However, increasingly within the humanitarian aid sector, the term 'resilience' is incorporated in programme descriptions. For the most part, this is associated with ensuring the provision of humanitarian aid contributes to the resilience of its ***recipients,*** and not associated with the principles of ***sustainability*** as it is with programming through the recovery/ reconstruction and development sectors.

Rehabilitation and ***Reconstruction*** are both elements of recovery processes and differentiated by the treatment of damaged or destroyed elements of environmental, social and economic systems. It is within these trajectories that in many cases partial rehabilitation or reconstruction performed by humanitarian agencies in order to deliver immediate and essential needs takes place.

For example, in camp settlements, rudimentary water and sanitation systems servicing camps require upstream capacity and supply chains that require transportation infrastructure are often delivered. The extent to which these types of 'investments' are transferable or leverageable by others is rarely examined or understood. Furthermore, partnerships with relevant government institutions, third party agencies, capacity building or organizational development for ongoing operations and management are rarely addressed. Consequently, it is generally accepted that rehabilitation and reconstruction are mandates of non-humanitarian organizations, and the principles for integrating resilience in recovery programming solely within the remit of these organizations.

Recovery is understood to mean a state within which a degree of normalcy and stability has been achieved and humanitarian need is minimized. Essential services are being delivered by others, and development activities are prioritized.

The rigid partitioning of aid and the misconception that relief, rehabilitation, and reconstruction are linear stages of recovery prevents support programming that can advance recovery and development in areas where the potential is greatest. A more pragmatic approach would be an accepted principle that where recovery can be achieved, it should be supported. This approach provides incremental 'peace dividends', minimises humanitarian demand, builds social and political capital, starts addressing capacity limitations, and empowers stakeholders (including appropriate government institutions) to engage early in their own further recovery and development. It also suggests the need to mandate ***Subsidiarity***[60], or requirements for humanitarian and development institutions to establish protocols for leveraging early improvements delivered by the former towards longer term objectives of the latter; in particular with basic infrastructure and service delivery. Furthermore, in the Syrian context this idea of area-based urban recovery is aligned with an approach focusing on the triple nexus (including peace dividends) as well as potential entry points for accountability in local public service delivery, in line with permissive aspects of Syrian legislation on to decentralisation[61].

i. The Global Options: Global discourse on resilient recovery

Most of the contemporary discussions related to 'resilient recovery' today focus on designing recovery approaches to the COVID 19 pandemic and addressing the increasing impacts of the rapidly changing global climate. Whilst still valid in the Syrian context, the impacts of a 10-year civil war on its social, economic and environmental systems establish deeper, more complex challenges. Nevertheless, the principles remain relevant.

Multiple variations of the meaning of resilient recovery exist. Multiple organizations (including UN Habitat[62]) have both high-level policy and practice guides on their implementation. All, without exception envision leveraging relief, recovery and reconstruction trajectories to achieve some level of a 'better state' than that which existed prior to a destructive crisis. The term 'build back better' popularised following the 2005 Indian Ocean Tsunami recovery process is the primary guiding principle in most of these variations.

However, building resilient societies and settlements is not a short-term endeavor under any circumstances. It requires meticulous planning, strategic investment and long-term (often decades) development to meet and mitigate the impacts of any plausible critical events.

60 See "Principles of Subsidiarity" below.
61 Law 107: Legislative Decree no: 107/2011, the Law of Local Administration.
62 "Humanitarian Affairs and the Role of UN Habitat: Strategic Policy on Human Settlements and Crisis" 2008, UN Habitat including the "Sustainable Relief and Recovery Framework".

An example extracted from the ***Organisation for Economic Co-operation and Development (OECD)*** definition of resilient recovery states inter alia:

> "…Recovery policies also need to trigger investment and behavioural changes that will reduce the likelihood of future shocks and increase society's resilience to them when they do occur. Central to this approach is a focus on well-being and inclusiveness. Other key dimensions for assessing whether recovery packages can "build back better" include alignment with long-term emission reduction goals, factoring in resilience to climate impacts, slowing biodiversity loss and increasing circularity of supply chains." *(Building back better: A sustainable, resilient recovery after COVID-19, OECD 5 June, 2020)*

Similarly, the ***Global Resilient Cities Network*** (GRCN) in a preface to their Toolkit for a Resilient Recovery state:

> *"…Whilst the impacts of the Covid-19 crisis in our cities depend on their resilience, integrating further resilience qualities into recovery activities now represents a tangible opportunity for cities to build back better and achieve better human health and wellbeing outcomes in the long-term. Learning from past crises as well as a deep and multisectoral understanding of the ongoing crisis are also essential ingredients to plan next steps." (Toolkit for a Resilient Recovery, © Global Resilient Cities Network, 2020, p. 1)*

Figure 14: Examples of global programmes addressing resilience

The City Resilience Global Programme (CRGP)[1]; initially conceived based on post-conflict urban recovery experience in Somalia and Kosovo. UN Habitat designed a series of tools intended as an integrated urban systems approach to measuring the resilience of human settlements. Since its launch at the Rio + 20 conference in 2012, the tools have been fully developed to measure, plan and programme urban development strategies, and monitor resilience gains of partner cities around the world.

At the heart of the UN-Habitat's City Resilience Profiling Programme is the City Resilience Profiling Tool (CRPT). The tool is based on a dynamic urban systems model that assists urban stakeholders and practitioners understand better the interdependence between the five universal elements of all human settlements. The relationships between and across, spatial, functional, organizational and physical aspects of any settlement are critical to understand the principles of integrated urban recovery and development and improving the resilience of the overall urban system.

Sustainable Reconstruction (SR)[2]: While not a 'resilience[1]' focused approach *per se*, a generic framework outlined by Oliver Wyman clearly sets out a strategy for building back better in cities and towns impacted by conflict or disaster. As with all other approaches, it demands a clear understanding of context, supported by data gathered during a detailed baseline assessment. Challenges are defined and organized under the three pillars of social, economic and environmental development.

The SR approach dimensions key sub-sets of baseline analysis under each pillar and similar to the URF approach, sets out supportive programming and projects within the continuum of relief to reconstruction. Also similar to many models, the SR approach requires an analysis of applicable policy/regulation and key stakeholders engagement throughout planning and programme design. Furthermore, with project(s) defined, an extremely useful approach to prioritizing key interventions is noted.

1 City Resilience Global Programme | UN-Habitat (unhabitat.org)
2 Sustainable Reconstruction: A Framework Accelerating an Inclusive and Green Recovery (unpublished)

Whereas the justifiable focus of humanitarian interventions in Syria are on the immediate needs of survivors and victims; the role of longer-term reconstruction and development actors demands strategic design of a future stable state enabling large scale investment in modern, efficient, sustainable and resilient infrastructure throughout the country. Additionally, there is a process design requirement that sets out plans and programmes that include integrated, incremental, and leveraged inputs to achieve that future vision of more sustainable, equitable and resilient cities and other human settlements. Missing from most recovery trajectories however is the linkage between the two mandates.

The above examples are only a few of the hundreds of variations on resilience and resilient recovery that have materialised in recent years. Like the various mandates of various agencies present in countries in the midst of, or recovering from crisis, they present a bewildering and confusing set of choices for governments and other local agencies, organisations, and individuals. It is rare, in spite of considerable resources provided for 'coordination' to find coalitions or collective action using a single programme framework for urban recovery, however the Urban Recovery Framework (URF) utilised in the Joint Programme in Syria has established one such approach.

A final key point on resilience as stated above, is the need to have a clear and common understanding of what it actually means to be resilient. For example, in the UNCT and Strategic Framework documents, the term is used widely throughout both documents. However, it remains unclear what or how these strategies actually increase the resilience of their intended targets. People, systems, communities, institutions are resilient when they have un-impeded access to services or resources, are enabled to be fully self-reliant, and are only dependent on external systems that are robust and have ensured continuity.

In the case of Syria, a clear goal might be something similar to (for example): "The UN system sets out through its humanitarian and early 'resilient recovery' programming to: a) create conditions for Syrian families to **readily** access services to meet their needs; b) enhance capacity for institutions and organizations to independently manage and operate critical infrastructure networks to **reliably** deliver those services; and c) facilitate stimulation of local economic growth trajectories aimed at generating revenue and operational resources to ensure **continued** provision of those services."

All of these imply an increased measure of self-reliance – autonomy – capacity – decreasing reliance on external input and at the core – use terms like reliability, continuity, and ready access (all attributes of resilient systems) and all related to the achieving the goal of resilience rather that its pursuit.

D. Sector based aid impacts: Fragmentation of aid and asymmetric assistance

A second set of challenges with current aid structures in both the humanitarian and development communities is the separation of aid into a range of sectors addressing specific areas of need. This fragments aid delivery, skews recovery trajectories and potentially creates asymmetric support programmes that hinder both exit plans for humanitarian agencies, and entry planning for longer term recovery/reconstruction/development focused support.[63]

The needs assessment frameworks for humanitarian and development processes are nearly identical in their sector definitions, yet to date no operational linkages are systemically made for exit/handoff; entry/leverage programming. The IASC Cluster system strengthens this approach, and the 16 targeted sectors of the SDGs also fragment interest, resources, and approaches to integrated recovery programming. Similarly, Post Disaster Needs Assessments (PCNA) and Recovery and Peacebuilding Assessment (RPBA) models used by the development banks and others are similarly structured yet, as noted above, there are historically no mechanisms, policy or guidance on streamlining transition or direct collaboration across the two aid modalities. Nowhere is this sectoral separation of aid flows most impactful than in urban settings where the various sectors are interdependent and interlinked[64].

63 For example,food centric vs. supply chain/production/labor centric; camp/temporary shelter vs. in situ incremental housing; avoiding 'wasted capital', etc. See Lecture Presentation: "Barriers to Recovery" MIRA/PCNA Slide (DL 2018).

64 Note: the Global Alliance on Urban Crises (GAUC) was developed with the specific goal of creating a platform upon which humanitarian agencies, long term development organizations, academics, local government representatives, and other experts could co-develop knowledge resources for humanitarian operations within urban environs and set up platforms for collaboration and subsidiarity that can effectively bridge the relief-reconstruction divide.

Increasingly however, aid organizations supported by the donor community are adopting area-based approaches in urban settings to identify discrete spatial zones within which integrated holistic aid support can be planned and implemented[65]. These spaces can be defined at any scale for any purpose including residential, commercial or industrial neighborhoods but must be linked to broader municipal, district or even regional scale urban development plans to ensure balanced, strategic recovery and eventual development goals are met when conditions permit.

E. Gradually shifting perspectives amongst some donors

Since the early days of the war in Syria, the international donor community have provided billions of USD for humanitarian relief to those millions of Syrians both within the country and those who were able to flee to other countries who have been affected by violence and victimisation by multiple parties to the conflict.

The two largest and most influential donors concerning Syria are Germany and the USA followed by the European Commission and Canada. During the March 2021 'Brussels V Conference' the Governments of 40 countries pledged a total of 11.2 billion Euros for 2021 including carryover funding for 2022 and beyond. The funding commitments are comprised of €3.6 billion (US$ 4.4 billion) in total funding for 2021 and €5.9 billion (US$ 7 billion) in loan pledges[66] with an additional €1.7 billion (US$ 2.1 billion) intended for meeting longer term programming[67]. Distribution of these funds include programming in the region most affected by the Syrian crisis namely (in order of scale of support), Lebanon, Jordan, Turkey, Iraq, and Egypt. With their contributions exceeding half the pledged funds, both Germany and the US exert considerable influence over the current manner and outcomes of foreign aid in Syria.

The majority of the other donors follow similar strategies to these four, and among all donors clearly the overwhelming majority of financial support to Syria is intended to meet immediate humanitarian needs of its citizens. Whilst there is discussion among implementing partners and (some) donors, and several smaller-scale programmes underway[68] related to transitioning financial support towards more recovery and reconstruction related activities wherever plausible within Syria, that transition has not yet fully materialised. Nevertheless, some important shifts have emerged.

It is encouraging to also take note of the overall distribution of 2021 pledges where the largest portion of funds (42%) are allocated for "multi-sectoral" programmes delivered by the UN (56%) and NGO's (25%). On the other hand, the total amount of pledges for 2021 represent only a portion (16%) of the USD 10.1 billion estimated cost of the UN Syria Humanitarian Response Plan (HRP), which responds to humanitarian needs within Syria, and the UN Regional Refugee and Resilience Plan (3RP) which covers protection and humanitarian needs as well as 'resilience' in the countries hosting refugees[69].

However, there is also continuing concern that much of the humanitarian aid funding going into Syria is at risk of being co-opted through state laws that purportedly pressure aid agencies to work only with government vetted partners, funnel operational funds through the central bank at preferential forex rates, and indirectly fund human rights violations[70]. With these major donors, the reputational risk of providing implicit support to the 'national authorities' has an explicit limitation for agencies and stakeholders seeking to improve the lives of Syrian citizens by

65 The Urban Recovery Framework, detailed below, provides essential guidance for inter-agency programming within specific spatial zones.
66 Loan pledges refer to lending targets, which depend on the recipient's willingness and ability to comply with the terms and guarantee requirements of the lender, and in this case are more focused on neighbouring host countries rather than direct financing within Syria.
67 Post-Brussels Financial Tracking Report 12, September 2021.
68 See: Annex B: Summary profiles of ongoing programmes addressing resilience in Syria
69 EC "Supporting Syria and the region: Post Brussels conference financial tracking, Report twelve, September 2021.
70 Extract from Human Rights Watch: World Report 2021: Syria.

(for example) rehabilitating key infrastructure and enhancing associated services. Consequently, by allocating the vast majority of aid funding to meeting the immediate humanitarian need, there is minimal potential reputational risk, as the beneficiaries of humanitarian assistance are the citizens in need rather than national authorities per se.

Nevertheless, recognizing there is little likelihood of a negotiated outcome commensurate with meeting conditionalities of the sanctions, there is an emerging shift among some donor countries supporting some

Figure 15: US Principles of Humanitarian Early Recovery

Principles of Engagement and Redlines:

- Early recovery in Syria does not mean reconstruction or support to the central government, normalizing relationships with the regime, nor removing pressure on Assad to engage in the political process.
- Early recovery projects, on their own, are not sufficient to create the conditions that can enable large-scale safe, voluntary, and dignified refugee returns. The conditions for large-scale refugee return to Syria are not in place, as the UN High Commissioner for Refugees (UNHCR) has made clear. The UNHCR, humanitarian organizations, and ultimately Syrian refugees themselves, are in the best position to assess whether areas are safe for voluntary and dignified refugee returns.
- Early recovery programs should be people-centered and informed by well-established communication channels with communities and participatory approaches put in place by humanitarian coordination bodies.
- Early recovery activities are often best implemented through area-based approaches that prioritize communities rather than a sector or target group.
- Programs and interventions should be driven by independent assessments of needs; be protection sensitive, especially to the potential to exacerbate tensions or increase harm to vulnerable individuals; based on sound contextual analysis; and built on local capacity.
- Early recovery projects, like all humanitarian assistance will be provided based on need, regardless of the location.

aid agencies working beyond the horizons of strict humanitarian mandates, and multiple international influencers recommending shifts in aid architecture to address needs beyond emergency humanitarian aid.

A statement from the Geneva Centre for Security Policy in August 2021, advised; "The UN's main mission in Syria must gradually focus its attention away from humanitarian aid and toward more sustainable approaches in support of stability and local resilience, shifting the logic of aid from sector-based humanitarian silos to area-based approaches focused on leveraging community capital and resources.[71]"

Though not specifically focusing on area-based approaches, the US government has recently published its policy position on "Humanitarian Early Recovery[72]" programming that; while it doesn't

71 Discussion Paper No. 35, "The Political Economy of Syria's Physical Fragmentation and Dependence" (August, 2021), Geneva Centre for Security Policy, Syria Transition Challenge Project.
72 "U.S. Humanitarian Early Recovery Programming in the Syrian Context" (November 2021).

supersede planning trajectories beyond meeting humanitarian needs, it does set out a series of assumptions, conditions and principles under which humanitarian agencies widen their scope of programming to activities; "…that build self-reliance, resilience, and improve access to basic services and livelihoods, as feasible."

While not entertaining activities that "…support (to the) central government…" this policy does however note that implementing agencies and partners consider: "To effectively carry out early recovery programs, implementing partners will need to engage with local authorities and communities to assess the status of local services and to ensure the equitable and sustainable delivery of those services to Syrians in need."

Other donors are contemplating or developing policies along similar lines to the US, and efforts to re-focus aid programming to improve rather than sustain life for Syrians seem likely to influence the role of aid in Syria in the near future.

Aid organizations, both from humanitarian and recovery/development sectors are responding. The ICRC for example published two reports stressing the imperative for international aid organizations to address critical deficits in key infrastructure. In the first, "Syria – Critical infrastructure failure risks devastating consequences" while making reference to the key sectors of energy and water, states; "If action is not taken, whole essential service systems could collapse in the next decade. The inability to stabilize critical infrastructure systems over the past decade has led to this looming threat of failure. The question is not if, but rather when." The second document entitled "Too Big To Fail, Drinking Water Facilities" further elaborates the consequences of not urgently addressing water production, treatment and distribution infrastructure and argues, "…that over the next decade, multi-year, multi-million investments are necessary to keep such large critical infrastructure operational, thereby mitigating the humanitarian consequences that would result from a collapse in service delivery and ensuring access to at least a minimum level of essential services required to safeguard public health."

Both ICRC publications heed the complete adherence to international humanitarian law, including those restrictions imposed by sanctions and UN policy, however they further argue that Syria's infrastructure systems are "…far from recovery…" and many smaller projects have already been implemented that fall within the parameters of these restrictions and limitations.

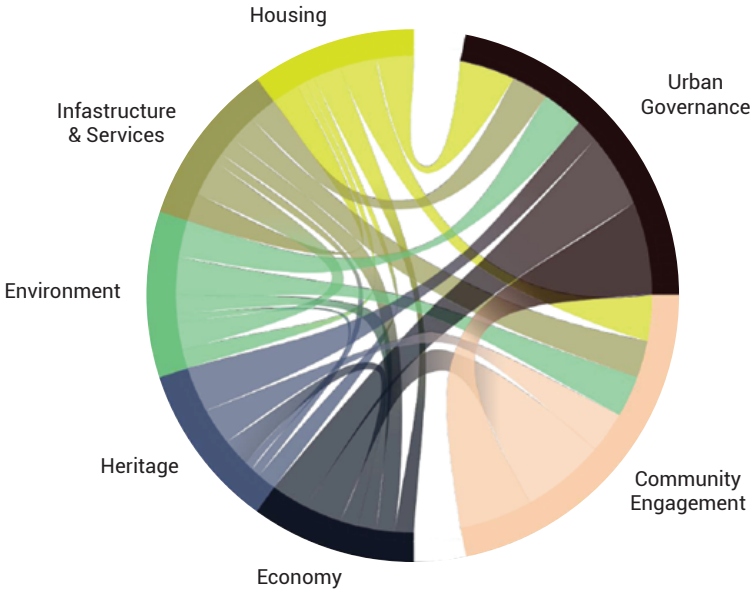
Finally, anticipating the need to think longer-term whilst addressing short term critical humanitarian need, the UN Strategic Framework[73] 2022-2024 positions the restoration of basic infrastructure such as water and energy as preconditions for increasing access to other services related to local livelihoods and economic recovery, housing, health and sanitation, education, mobility/transport public space and safety. Further, this first Pillar, "Availability and Access to Basic and Social Services" establishes baselines for achieving the outcomes planned under the remaining three Pillars focusing on socio-economic recovery, 'resilient' return, and people resilience (sic) and institutional responsiveness. The SF also proposes a hybrid implementation strategy fully supporting humanitarian needs under the HRF, but including a focus on 'resilience' fully in line with the UN SCR 2254, and leveraging those aspects of the HRPs "…third strategic objective on increased resilience and access to basic services." within a multi-year planning process guided both by national priorities and key SDG targets. In short, "… the largest part of the UN work in Syria will still focus on responding to the humanitarian crisis under the HRP, while the Strategic Framework will focus on multi-year resilience and early recovery activities." including through area-based approaches, joint programming, and participatory community-level engagement.

73 "U.S. Humanitarian Early Recovery Programming in the Syrian Context" (November 2021).

F. Urban Recovery Framework: Forging subsidiarity and fostering resilience:

Illustrating one process design approach in Syria, UN Habitat's Urban Recovery Framework (URF) integrates resilience across its 7 pillars where planned activities are deemed either Absorptive, Adaptive or Transformational achieving incremental 'resilience dividends' along the pathways to recovery and reconstruction and ultimately creating baselines for sustainable urbanisation and development.

Figure 16: Sectoral inter-dependencies within URF area-based approach.



Building on experiences working in conflict situations throughout the region, the URF has developed five broad aims: **(i)** to strengthen institutional arrangements to deliver urban recovery at scale; **(ii)** to develop multi-sector programming that is designed to go to scale; **(iii)** to mainstream resilience (build-back-better) in all interventions; **(iv)** to contribute to addressing the root causes of conflict and improved urban governance; **(v)** to facilitate a transition of a post-conflict response to sustainable urbanisation, and the achievement of the Sustainable Development Goals (SDGs)[74].

The URF addresses key recovery elements of all urban systems namely; housing, economy, ***infrastructure and service***[75]**,** governance, community engagement, environment and cultural heritage. These pillars are addressed both through in-depth sector, and area-based, cross-sectoral analysis and interventions. Key activities related to the urban planning domains define the process design aspects of the URF approach namely:

- Analysis includes activities that create a better understanding of the conflict context, such as damage assessments and costings, conflict and root cause analysis, or the impacts of conflicts on people and services in different neighborhoods in cities. Implementation modalities include, among others, urban profiling, damage and needs assessments and situation reports.
- Planning covers activities that allow for better allocation of resources in space and time, such as the development of urban or national recovery

74 UN Habitat, Urban Recovery Framework in the Arab States Region, Explanatory Note January 2021.
75 Note: Understanding functional infrastructure and services are critical foundation processes in relation to all other pillars is key to creating better living conditions for Syrians in country, and establishing (in part), conditions under which Syrians outside the country may return.

plans, national visioning processes, but can also include urban renewal plans or Housing, Land and Property Rights (HLP) intervention frameworks, and are usually developed in cooperation with government partners. It can also include the development of policy papers that identify challenges and opportunities for urban recovery.

- Programming builds on planning and analysis, and covers, among others, the implementation of relevant projects addressing the seven URF pillars (Economy, Heritage, Social Cohesion, Housing, Services, Environment, Governance). Many implementation modalities are possible, such as resilience programming, joint programmes implementing action plans, or support for the development of enabling laws and policies that contribute to improved urban recovery. Projects are categorized as projects that contribute to short-term ('shock absorbing'), medium-term ('adapting'), or long-term ('transformative') processes.
- Monitoring includes the tracking of urban recovery data through the identification of critical key performance indicators for urban recovery (e.g. "urban functionality", "damage and reconstruction to houses", "access to services"), linked to SDGs, setting up mechanisms for the production of the data, and managing and communicating these results through open data platforms.

Cross cutting these 7 pillars, phase-based activities or inputs designed under the URF approach are categorised as; 'Absorptive', 'Adaptive' or 'Transformational' and defined as:

Absorptive: responding to immediate needs for stabilization, including need for basic services and livelihoods.
Adaptive: medium-term response, including conditions for improvements within the current legal and organisational setting.
Transformative: longer-term, including disruptive and bounce-forward measures towards modernization of local administration.

These phase-based activities represent the 'recovery ladder' approach that is central to the URF, and which potentially provides a common framework within which a wider range of agencies including those with a humanitarian mandate, may collaborate and their inputs leveraged to advance recovery trajectories through the phases.

The URF is a proven approach to resilient recovery, developed and tested in Syria, Iraq, Libya and Yemen, and contributing to joint agency programming in Syria. Through its application, designing integrated recovery plans (see Fig 12: Example of Integrated Recovery Framework, Homs below) are generated guiding future programme development and implementation.

Figure 17: Example of Integrated Recovery Framework, Homs

Strategic Framework for Homs Integrated Recovery Plan:

The Urban Recovery Profile of Homs provide a comprehensive overview of Homs city's interlinked return challenges, in the context of major conflict impacts. The process includes extensive community consultations and wide-ranging analysis on damage levels, infrastructure and service functionality, environmental degradation, economic barriers and options for local economic development, rights protection (including HLP issues), threats to urban heritage, local governance issues, social cohesion issues, etc. Return considerations are further informing the Recovery Plan and proposed priorities. It is anticipated that the comprehensive recovery plan will provide a strong platform for area-based return support and joint programming, and that it will likely generate future funding support. The process is aligned with Urban Recovery Framework (URF) which can be described as *an enabling institutional and policy framework and related programming to support resilient urban recovery*

at scale and the renewal of the social contract. The cycle of analysis-planning-implementation-monitoring tailors the URF process to the recovery of Syrian cities.

The approach for Homs Integrated Recovery plan has been developed with three broad strategic objectives:

I: Vision and mechanisms for integrated and bottom-up recovery prioritization
II: Economic recovery and strengthened value-chains
III: Service functionality restoration in support of resident and displaced communities

The process was conducted based on the wide participation and engagement with local community. Their involvement was principal in the different activity stages at city scale with the most relevant being at the neighborhood level. Between December 2021-January 2022, UN-Habitat did elaborate a detailed field assessment in the 21 targeted neighborhoods (selected on set of most vulnerable criteria), based on the consultation process and training on the field with local community representatives. The assessment aimed at the better understanding of displacement dynamics at the neighborhood level in relation to damage impacts on the building and neighborhood scales, as well as characterizing the situation of internally displaced persons, return origins and analyzing related findings.

The process follows the sequenced methodology steps:

- Understand urban contexts and arrange the needs through a multistakeholder approach, involving local actors, private sectors, local authorities and engage with civil protection needs
- Mainstream urban dimensions in the discussion and priorities, including tools and modalities, and field detailed damage assessment analysis
- A multi-sectoral approach, supporting existing services, infrastructures, and systems through an integrated approach rather than creating parallel system of sectors delivery.
- A Digital tools training using virtual tools and applications for safer city access and social cohesion strength.
- Develop sectoral studies for: Local Governance, Local economy, Environment and Hosing costing, main sectoral needs, and priorities.

One relevant output is infrastructure functionality assessment and priority need at city and neighborhood levels, in addition to the costing estimation for funding actions.

Source: Homs recovery Plan, April 2022

06

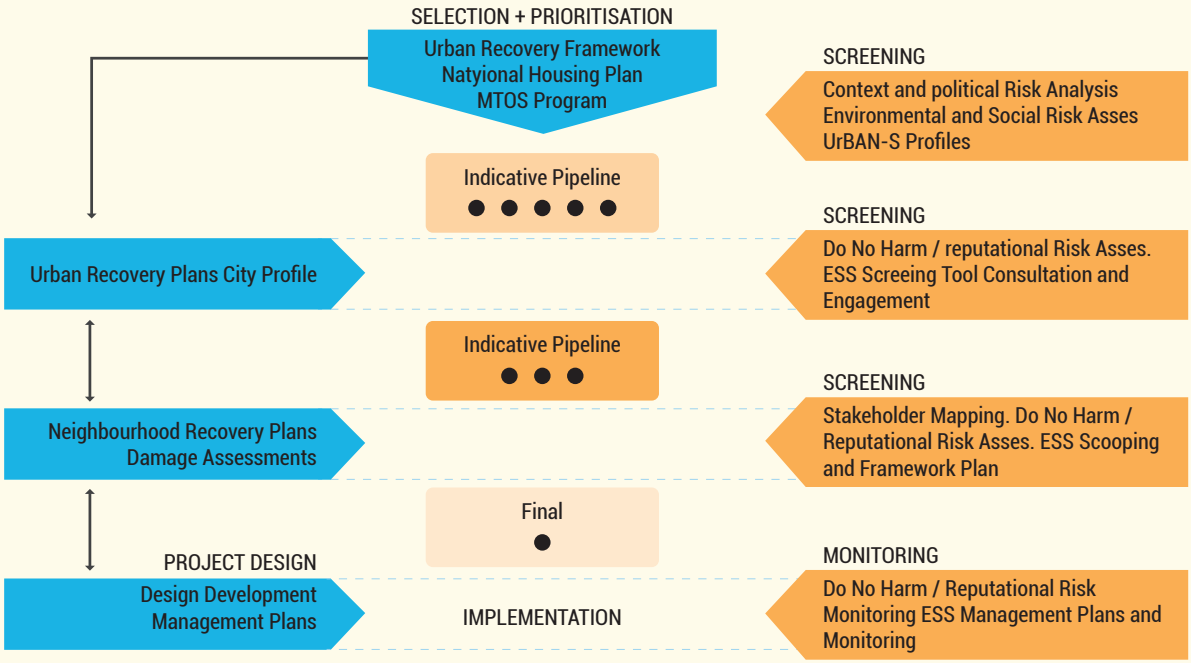
Policy Options and Considerations

In spite of all the challenges, barriers and limitations noted above, there is growing momentum among donors and agencies aligned with the quote above and the perspectives of this paper namely, *"What is the case for rehabilitation and recovery interventions for infrastructure and services in the Syrian context as it exists today?"*

URF: Monitoring and Due Diligence

Robust monitoring must accompany interventions to ensure sound prioritisation and equitable distribution of support as international response progresses from humanitarian to early recovery. A rigorous due diligence system has been developed and tested in different locations and applied through all stages of the URF process. This includes:

a. City and neighbourhood level profiling – context and political risk analysis, environmental and social risk assessment;
b. Risk screening for indicative recovery plan priorities;
c. Environmental and social risks screening for project packages with a green/ red light system for approval, and;
d. Environmental and social management plan with mitigation measures for risks on each project.



A coherent recovery monitoring framework for localised recovery plans in Syrian cities can be supported by the SDG11+ tool, designed to enhance urban baseline data and improve targeting. A careful selection of 37 SDG indicators strikes a balance between understanding the status of needs, services, systems and capacities at decentralised levels, capturing activity outcomes against several levels of engagement form the neighbourhood to city to national levels.

Clearly the question has been pondered and approached by both donors and aid organizations in Syria. Even more clearly whilst there is commitment by all external partners, and resources being marshalled to improve the lives of Syrians beyond meeting their immediate needs, there is an understandable trepidation and cautionary approach by all parties to mitigate a range of reputational, financial, social and peace-building risk. Due diligence frameworks such as those applied in the Urban Recovery Framework maintain robust risk screening, analysis, planning, consultation and monitoring cycles throughout programme design and implementation to counter and mitigate realization of these risks to all stakeholders.

A. Options for utilizing existing programmes to foster resilient recovery:

In examining policy considerations needed to answer this question and overcome those barriers and challenges, there already exists within Syria options to capitalize on this emerging momentum for change. Area based approaches, such as the URF, can provide a foundation for joint programming in Syria, as well as opportunities for both physical and institutional development related to the key infrastructure/service sectors in discrete, small-scale and achievable scales. Furthermore, while capacity constraints at government levels are limiting factors, area-based, people-centred recovery programming add capacity that local authorities and other stakeholders may not have, whilst ensuring the introduction of accountability mechanisms in local public service delivery. The principles of people-centred recovery; engaging people in their own recovery, capitalising on local expertise, and harnessing momentum to accomplish specific goals increases human and social capital, builds cohesion and ownership, and empowers communities, all addressing overarching goals of the URF, whilst eventually reducing costs for costly, externally-steered aid operations.

The projects and programmes noted by the ICRC in the above-mentioned reports also illustrate the willingness and capacity of humanitarian agencies to engage in strategic and incremental improvements to critical infrastructure. While honouring the limitations and restrictions imposed on their engagement, the ICRC for one, nevertheless recognizes the potential for even greater humanitarian need should these key sectors and services not be improved.

Additionally, there are several other funds, programmes and aid strategies addressing resilient recovery which are also under implementation both within Syria, and in neighboring countries impacted by the Syrian crisis. The common thread across all of these is their focus on addressing immediate needs of people in cities and towns throughout Syria and where the delivery of resilience 'benefits' provides potential entry points for further development or improvements when conditions permit. These programmes include: *The Joint Programme on*

Rural Urban Resilience, an Adaptation Fund project focusing on climate change induced water shortages, activities delivered under the *Syrian Humanitarian Fund, and the Syrian Recovery Trust Fund.*

With these potential resources in mind, and with the understanding that under the current conditions noted above, the principle of 'minimal functionality' where thresholds of functionality are defined, and with the primary aim "*…to use targeted critical infrastructure and services interventions to support the conditions for community led urban recovery and to address barriers facing returning populations*[76]". Implemented strategically, the goal of minimal functionality represents a possible 'bridge' connecting the humanitarian imperative to meet only immediate needs and the longer-term objectives to transition from crisis to recovery and onward to development of modern, sustainable and resilient infrastructure in Syria.

Deconstructing this long-term goal to address immediate needs in Syrian cities, achieving the minimal functionality goals for systems and services that can be addressed, represents the aims of the activities implemented within the Urban Recovery Framework guiding the Joint Programme, and through the development of strategic Integrated Recovery Plans, can bridge limited infrastructure funding available within humanitarian operations with longer term funding and create conditions for self-financing to continue to rehabilitate, refurbish and improve both physical and functional aspects of urban infrastructure. (See Example of Integrated Recovery Framework for Homs Figure 12 below)

B. Options for Financing infrastructure[77]:

i. Global context:

In countries affected by complex crises such as in Syria today, financing infrastructure is extremely complicated and consequently often opaque to potential investors. Furthermore, due to its high short-term capital demand and very long-term asset life with returns on investments (ROI) solely dependent on revenues derived from end-users[78], most private investors are wary even in situations where complex crises do not exist. More often today, governments are relying on public-private partnerships (PPP) where public funds are blended with private capital for both design-build and operating agreements. In all cases, capital investment instruments used in financing infrastructure construction, maintenance, upgrading and operational systems is a fundamen Figure 18: Options for financing large-scale infrastructure

76 Support to the Restoration of Minimal Functionality of Infrastructure in Urban Areas in Syria, January 2020.
77 World Bank, https://ppp.worldbank.org/public-private-partnership/financing/project-finance-concepts and OECD Infrastructure Financing Instruments and Incentives (2015).
78 Note: for certain infrastructure where end users do not pay fees or tariffs directly, such as roads for example, governments need to create other incentives for construction, operation and maintenance investors.

Figure 18: Options for financing large-scale infrastructure

Box: Public-Private Partnerships

Traditionally, PPP based large-scale infrastructure construction or major refurbishment projects are financed in three modalities namely;

Government funded: Governments choose to fund wholly or partly the capital and operating cost of infrastructure and may look to the private sector to bring in expertise and increase efficiency.

Private corporate financed: An infrastructure operator may agree to finance a proportion of infrastructure capital cost, or improvements and upgrades based on its own equity and financial capacity.

Project finance: Most widely used in Public Private Partnerships (PPP's), this model normally provides financing to a Special Purpose Vehicle (SPV) which has the rights to construct and operate whichever infrastructure system or component is being developed. The SPV is created specifically for this purpose and is usually a limited liability corporate structure composed of shareholders, lenders, grantors, the operator, construction entity, and input/output agencies. Sources of finance for infrastructure in these 'normalized' situations include Sovereign wealth funds, Commercial banks, Capital markets (either local or international), Equity funds and sometimes Export credit agencies where limitations on other sources are present. In developing countries, Export credit agencies can provide direct lending, intermediary loans to local commercial banks, and/or interest rate equalization.

Other typical funding/finance sources for developing countries include:

- Development bank institutions (DFI's) such as the International Finance Corporation (IFC), European Bank for Reconstruction and Development (EBRD), CDC Group (UK's development finance institution), DEG (the German development finance institution), Proparco (the French DFI) and European Investment Bank (EIB).
- Multilateral development banks such as the World Bank, Regional development banks, European Bank for Reconstruction and Development, or Inter-American Development Bank Group. In Arab states, the Islamic Development bank is also a source of major infrastructure finance.
- Bi-lateral agencies refers to the institutions or departments of donor countries that provide aid to developing countries often through grants to multilateral agencies, development banks or into trust funds.

ii. Financing bulk infrastructure projects in Syria today

Syria is not presently in a normalized nor a stable state therefore many of these options are not currently available to address the depth and scale of infrastructure damage, rehabilitation and reconstruction efforts, and a return to maximal functioning state.

The ultimate conclusion would be that presently Syria is not a conducive environment for large scale external investment or business associated with its infrastructure production and distribution networks due to the lack thus far of a political solution enabling capital inflow. Until it is, whatever work to improve services to its citizens would therefore need to be limited, small scale, and meet immediate needs only. However, within these constraints, the imperative to improve rather than simply sustain lives is possible and should be a principle guiding coordinated efforts by all parties. Work already undertaken through World Bank damage assessments and URF profiling (cited elsewhere) have paved the way by quantifying and mapping sectors in eventual need of rehabilitation and reconstruction.

From a legal perspective, however, Law 107 empowers local authorities to raise revenues[79] and finance[80] under certain conditions and represents one potential avenue for self-financing specific infrastructure rehabilitation projects in Syria. However, while multiple sources note that fiscal capacity within the local administrative units and councils is limited, this represents an opportunity for agencies involved in projects focusing on infrastructure and services to support necessary fiscal capacity building at pilot project scales initially, and beginning the process for local authorities to assume their responsibilities as set out in law.

iii. Municipal Self-Finance:

As noted in the local governance thematic paper, LAU revenues remain marginal at best with up to 90% coming from national transfers, minimal capacity for own-source revenue generation, and budgetary control in the hands of provincial governors, prospects for municipal self-financing for improving infrastructure and services remain low in most cities and towns.

Nevertheless, while the prospects of financing larger-scale infrastructure as noted above are limited, there may be further scope to undertake smaller, more directed investments at the municipal or urban scale. With complimentary capacity building programming related to municipal finance within local government institutions and meeting conditionality thresholds expected within Law 107, local administrations may implement plans to enhance their access to required revenues[81] and capital for infrastructure repair and rehabilitation.

There are multiple useful guidelines and programmes addressing financial capacity constraints at local government scale[82]. Many refer to innovations municipal governments have implemented to enhance access to resources outside of the typical 'assigned (shared) revenue' arrangements between national or regional governments as detailed in Law 107.

With the limitations sanctions impose, the drain on government resources that the Syrian conflict creates, political and fiscal barriers to inflows of capital for investment in infrastructure, and the limitations of 'minimal functionality' in place, the only likely finance for marginally improving services to Syrian cities could be through a modified self-finance option using own revenues where they exist, or through international aid channels. The URF's area-based approach provides an appropriate framework for implementation of this 'minimal functionality' approach at achievable scales and within constraints of sanctions and UN Policy.

79 Law 107, Section 10, Chapter 1, Article /134.
80 Ibid: Article 139. (1), (2), and (4).
81 Options typically open to LAU's include: Tax revenues, non-tax revenues, assigned (shared) revenue, grants-in-aid, loans and other receipts.
82 Note: Guidelines such as 'Financing Sustainable Urban Development' (UN Habitat 2021) offer useful frameworks and case studies illustrating a range of innovative programmes that any emerging local institution could benefit from.

07

Policy Design, Implementation and Monitoring

A. Policy Design:

Understanding the complex context within which key infrastructure and service deficits must be addressed is critical to improving life for Syrians in-country and creating conditions for Syrians outside the country, should they decide to return. Whilst some of the limitations and challenges summarized below are beyond the control of the aid community to address, several others are well within the realm of viable options, and in spite of the challenges, opportunities for measured, strategic integrated programming exist.

- **Multiple parties engaged in multiple conflicts:** The ongoing conflicts in Syria have drawn in multiple parties either directly, or by proxy supporting the government's position, or in support of opposition entities. Many of these have vested interests in maintaining the war economy, and internecine conflict over territorial control continues to complicate aid operations.

- **Neighbouring countries are impacted by the influx of refugees, as are several countries further away.** Since 2011, according to UNHCR[83] as of mid-2021, 6.76 million Syrians have fled the country. The majority (55% ~ 3.74 million) have settled in Turkey, with the bulk of others in Lebanon, Jordan, Iraq and Egypt within the region. Notably, in Europe, Germany is currently hosting the largest population of Syrian refugees with roughly 616,000 people while other smaller groups are scattered throughout several other countries in Europe and the Americas. The impact on many countries in the region, affect labour markets, educational and healthcare systems, infrastructure and service systems, already strained in some cases by refugees from other countries, domestic population growth, and weakened or fragile economies. Multiple countries are providing aid to support hosting countries, and international concern over facilitating conditions for safe, sustainable return has continued to rise over the course of the Syrian conflict.

- **International and Multilateral pressure for political transition:** Many governments have made attempts to end the conflict non-militarily through sanctions designed to pressure the current government to step aside and create conditions for a new democratically elected government, with little success thus far. Multilateral organizations such as the United Nations, European Union, and League of Arab States have also imposed a range of sanctions including those that limit access by the current government to resources provided through aid. Protocols designed to prevent inadvertent or indirect support to the national government, however, ultimately undermine potential for early recovery-oriented programmes, in particular where those programmes 'invest' in larger-scale infrastructure or rely on supply chains that are restricted.

- **Aid flows are skewed to meet immediate needs only:** Understandably, major donors are partitioning the vast majority of aid for humanitarian agency operations, and most other donors follow their influence limiting aid flows that are perceived to exceed the humanitarian mandate as outlined in UN Security Council Resolution (UNSCR) 2254 and setting thresholds of only 'minimal functionality' for infrastructure and service support. Nevertheless, some countries and multiple aid agencies have begun planning for a future state where recovery and reconstruction could begin. In the meantime, there are opportunities for smaller scale support to meet immediate needs for certain infrastructure and service delivery sectors.

83 UNHCR Refugee Data Finder: https://www.unhcr.org/refugee-statistics/.

These 'macro' level conditions above create a difficult, complicated and complex operational environment which aid agencies must navigate in order to function. Within the aid support continuum, these factors include managing:

- **Complex operational aid environment:** Within this context, the operational aid environment delivering support throughout the humanitarian/ recovery continuum is hampered by lack of access, limitations on importing certain goods, current government restrictions, fragile relationships between agencies and national government, absence of rule of law, heightened insecurity of aid personnel, and ongoing conflict in parts of the country. Different protocols are required for provision of aid in government vs. Non government-controlled areas, and structural impediments including the closing of border entry points exacerbate operational challenges.

- **Structural schisms affecting continuity of aid:** Prospects for recovery are limited both by the context noted above, and by structural constraints within the aid community. With the focus of donors on meeting the immediate needs of vulnerable Syrians and navigating the complex relationships with government and non-government parties, the perennial schism between organizations with a strict humanitarian mandate, and those whose focus is on creating better conditions for the well-being of the population in the longer term presents major challenges, in particular those related to infrastructure sectors. These structural constraints can challenge the potential for inter-agency subsidiarity where a continuum of support could transcend the mandates and leverage early investment in basic services by humanitarian agencies to catalyse longer term development gains. Some successful early efforts to establish this continuum are underway and represent innovative and novel approaches to continuity of aid throughout the crisis-recovery continuum.

    1. **Prospects for large scale infrastructure rehabilitation / reconstruction hindered:** Current political, geo-political, multi-lateral and donor limitations prevent any prospect for reconstruction and rehabilitation required to deliver services associated with bulk infrastructure. Nevertheless, with certain sectors including energy, communications, and water; downstream users are dependent on a certain level of upstream production capacity. Aid funding therefore must focus on projects implemented at smaller discrete spatial scales with achievable and allowable scope for infrastructure improvements using least-cost highest-impact approach in project design and ultimately providing incremental inputs to longer term goals for the eventual reconstruction of the infrastructure sectors in country.
    2. **Prospects for large-scale financing of bulk infrastructure through normal channels are limited:** by ongoing conflict, sanctions, and the fragile Syrian economy. Interim measures will rely primarily on various aid programmes delivering minimally functional urban scale improvements, that should be linked to long term future-state urban and spatial plans targeting resilient, sustainable and modern infrastructure systems throughout Syria.

- **Conditions for capital investment limited:** The normal methodologies for large-scale infrastructure investment required to rehabilitate, repair and upgrade both the physical and operational elements of transport, energy, water and communications systems at scale in Syria are not practically possible until a degree of political stability is reached throughout the country, and conditions permit the inflow of necessary capital, financing options and essential expertise. However, there does exist possibilities for external aid agencies to consider alternate financing models at smaller scale either through direct or indirect financing in line with aspirations set out in the Syrian Law 107 on decentralization.

- **Organizational and regulatory systems are weak:** Historically, the functions of local authorities in particular were reduced to a set of administrative demands as most relevant urban management and development decisions were taken upstream either at regional or national levels. Consequently, capacity was neither present nor required. When Law 107 was introduced in 2011 however, it was clear that the flight of competent professionals and the historic lack of decentralised law and regulations were key factors hindering its implementation. These two factors impact the operational and procedural requirements for functional organizations or institutions.

- **Capacity at many levels is weak:** With the flight of millions of Syrians from all walks, much of the inherent expertise in, administration, business and finance, and operational management has also disappeared. Consequently capacity, particularly at sub-national levels has been weakened, and whilst the law on decentralisation was promulgated with laudable aspirations to devolve governance 'closest to the people'; its full implementation has been hampered by these capacity constraints, as well as a paucity of regulation associated with the Law.

- **Legal and regulatory frameworks are not sufficiently robust.** Certain sectors have varying regulatory systems, often top-down without longer term operational regulations in place, occasionally project specific with minimal accountability requirements, dated and obsolete in some sectors, and in some cases completely missing from national, regional or local laws and regulation.

- **Infrastructure networks are interdependent and linked:** Roads, bridges and public transport, public spaces, parks and gardens, energy and communication networks, water and sanitation and solid waste management are interdependent and linked at all spatial scales. Care must be taken to balance inputs intended to increase resilience across all sectors understanding that weakest links between interdependent systems erode resilience of the entire system. Consequently, holistic early interventions, integrated in longer term urban plans can have positive, wider influence on larger-scale upstream infrastructure rehabilitation and reconstruction when conditions permit

- **Integrating skills transfer and organizational development:** Partners and stakeholders across all infrastructure sectors require support for capacity building on all aspects of planning, recovery, rehabilitation, management, and operations at local and regional levels. Within this environment, the roles of international aid agencies should ensure that missing competence is initially provided by third parties whose responsibilities must include capacity building strategies with clear provisional exit and handover pathways. Nowhere is this more important than supporting local authorities with building the technical, administrative, and financial/fiscal capacity for repair/rehabilitation and operation of infrastructure networks that deliver services to urban residents. Creating conditions for traditional operators to resume provision of services in Syrian cities is one additional key resource of aid agency exit planning and complementing project delivery with capacity building ensures future operability and sustainability.

- **Managing expectations:** Planning for maximal functionality of infrastructure systems and delivering inputs to achieve minimal functionality can create reputational risks for all stakeholders. Transparency and inclusion of key stakeholders in future planning is essential to managing expectations.

With limiting thresholds imposed both by sanctions and UN policy, aid agencies and donors alike need to ensure what is done or planned in support of the restoration of infrastructure to minimal functionality levels is measured, monitored and supported by evidence that all aid is provided within acceptable constraints. Further, the questions related to "should or could" the aid system address needs for infrastructure are increasingly overtaken by questions related to "how, and how much" can be reasonably undertaken to alleviate deprivation of Syrians bereft of access to services provided through these sectors. From this perspective the key question: "How do we develop the organizational, regulatory, procedural, and operational environments to implement repair and recovery processes for infrastructure and services for the widest and most lasting impact in Syria." suggests several policy implications for consideration by donors, aid agencies and other stakeholders.

B. Policy considerations:

The following sections outline suggested policy considerations derived from those conditions noted above and focused on implementation modalities which the in-country aid system could apply. All of the suggested considerations can, with certain due diligence approaches be monitored both for coordination and management purposes as well as for risk, impact and continuity.

ii. Guiding principles for addressing infrastructure and service delivery:

Given the complexities of the current context in aid delivery in general in Syria as noted above, and specifically limitations related to rebuilding the bulk infrastructure required to service communities through various transmission and distribution networks in open systems, and ensure capacity and regulatory systems are in place for closed system sectors, two key guiding principles are necessary to facilitate better coherence and strategic input to the restoration of the infrastructure sectors identified in this report:

The first:
"All inputs within the thresholds of minimal functionality should be considered incremental inputs to the longer-term objectives of recovery and development of Syria's infrastructure to modern, efficient, and sustainable standards, and rebuilding the essential services Syria's economy rests upon."

From this principle, all associated hard or physical elements as well as soft or functional elements of both open and closed infrastructure sectors and can be mapped out, planned, and appropriately addressed in time and when conditions permit. Furthermore, this principle ensures no 'investment' is wasted.

The second:
"Resources must be allocated towards more complete interventions focusing on critical infrastructure and service systems, to achieve a maximum positive impact for the Syrian people."

From this principle, the imperative to; constructively engage donors and agencies and other stakeholders including community members themselves across the aid spectrum, open space for donors who are funding or considering extending the horizon of meeting immediate humanitarian needs; improve lives of Syrian citizens in-country and contributing to the creation of conditions for Syrians outside the country to return and, setting in place conditions for future reconstruction, recovery and development of key infrastructure throughout the country when conditions permit.

These guiding principles are, in the Syrian context, universal and can be applied to address infrastructure sectors including those noted in this report at various spatial scales in both government- and non-government-controlled areas. Moving forward to increase impact, and improve conditions for Syrians beyond their immediate needs, may be achieved considering the following policy/principles to influence a shift in aid delivery for inter alia the infrastructure sectors addressed in this report.

C. Policy considerations at a programming level

1. **Planning for the future:** While current political, geo-political, multi-lateral and donor limitations hinder any prospect for larger scale reconstruction and rehabilitation required to deliver services associated with bulk infrastructure; planning for reconstruction in Syria should define a continuum targeting maximal functionality and meeting modern standards including those related to 'green recovery', 'building back better' and climate resilience for all essential bulk and distributed infrastructure systems. Interim measures will rely primarily on various aid programmes delivering allowable smaller-scale 'minimally functional' improvements, that should be linked to long term future-state plans targeting resilient, sustainable and modern infrastructure systems throughout Syria. ***This requires integrating both***

hard and soft components of infrastructure systems and service repair and improvements within the parameters of minimal functionality linked to longer term goals.

2. **Improving inter-agency subsidiarity through due diligence and integrated planning:** Existing monitoring systems such as the ESS and HLP due diligence frameworks provide useful approaches to measure impact and manage risk, and could be utilized to capture recovery gains and enhanced to facilitate inter-agency joint programming. These frameworks can be enhanced further to manage the risk of wasted capital, or 'orphaned' investments that may be deconstructed or ignored in future programmes. Interagency competition, lack of coherence, and asymmetric support undermine the integrity of recovery programming, erode trust with local development partners, undermine the quality of delivery inputs, and leave a patchwork of projects that often result in wasted capital. Donors can insist on interagency subsidiarity to ensure early investments produce legacy outcomes, linked in every case as contributions to longer term objectives for all infrastructure systems. Planning for future states of infrastructure networks and interdependent systems could include:
    - Subsidiarity Principle 1: Any programmes or projects where aid has a finite horizon must have a handoff protocol (i.e. comprehensive and complimentary exit/entry plans) in place with trusted partners such as other agencies, or local organizations.
    - Subsidiarity Principle 2: Aid donors must agree with planning horizons and facilitate, promote or provide alternate source funding where goals exceed minimal functionality thresholds critical to improving lives.
    - Subsidiarity Principle 3: transformative action must improve status quo rehabilitation and catalyze future reconstruction to modern standards including where possible, green development.

    Advance agreements between those agencies implementing minimal functionality level projects and those who will likely eventually be supporting larger scale 'maximal functionality' for Syria's infrastructure reconstruction ensure these principles can be applied elsewhere ensuring continuity and coherence. ***Within the overall ESS/ HLP due diligence framework therefore consider continuing forging alliances and solidarity by integrating subsidiarity principles across the aid agency/partner spectrum and leveraging partnerships to 'bounce forward' through the recovery ladder.***
3. **Leveraging all possible funding pathways:** In the absence of access to normal options such as domestic and/or international finance, capital investment, public-private partnerships and others, for financing repairs, improvements and management of key infrastructure sectors, virtually all investments will, until the political environment has stabilised and sanctions removed, be financed through various aid channels. In this regard, some donors are developing or implementing new policy and programming that within the parameters and limitations on aid in Syria seek to invest more in improving quality of life for Syrians. Explore common ground and points of convergence for repair and improvements to infrastructure and services with funding and programming frameworks already in place and addressing aspects of resilient recovery. These include for example: Aligning with emerging early recovery policies of US and EU donors, as well as ongoing programming with the Joint Programme on Urban and Rural Resilience, Syrian Humanitarian Fund, Syria Recovery Trust Fund, and Adaptation Fund.
4. **Working small delivering large for maximal impact:** Understanding, downstream minimal functionality requires (some) upstream capacity: focus on low hanging fruit (e.g., for water/ energy/comms (open systems)) and achievable products within closed systems at urban scales (i.e., Solid/liquid waste, transport, public space) to enhance reputational capital, trust, and enhance partner commitment, while improving lives and setting in place conditions for future development. Project planning and formulation within a continuum that envisions maximal functionality across all infrastructure networks and using area-based approaches that offer discrete spatial scales within which holistic incremental legacy outputs or 'recovery gains' to infrastructure and service delivery can be developed and services delivered in a manner that similarly improves institutional, regulatory, and capacity deficits with stakeholders. This requires development of criteria meeting the above conditions and using modified 'return on investment' indicators to measure, monitor and deliver maximum impact from project investments on (for example) access to services, and improvements to social, environmental,

economic and quality of life indicators.

5. **Strengthening legal and regulatory systems:** While the aspirational goals of Law 107 clearly outline legal requirements associated with decentralization of authority to the lowest levels of governance, there are capacity constraints hindering its full implementation. The laws and regulations governing key infrastructure sectors however are dated, highly centralised, weak and/or missing, consequently hampering efficient and transparent operation of service systems throughout Syria. It is useful to outline a typology of infrastructure including their primary components, noting the institutions charged with commissioning, operating and maintaining those components, and begin building a compendium of applicable law regulating the supply and distribution of services associated with each level of the infrastructure sector to provide a framework for systematically addressing weak or missing legal and regulatory elements and improving the governance for all infrastructure sectors.
6. **Managing expectations, enhancing reputational capital:** Planning for maximal functionality of infrastructure systems and delivering inputs to achieve minimal functionality can create reputational risks for all stakeholders. Transparency and inclusion of key stakeholders in future planning is essential to managing expectations. Given limitations on the allowable scope of infrastructure rehabilitation, (I.e., Minimal functionality, contextual and operational challenges, capacity limitations, complex aid systems, etc) improving key infrastructure and associated services to meet immediate needs of Syrians should focus on 'low hanging fruit' such as local production of water, energy, and communications (i.e.. open systems) and achievable products within closed systems at urban scales such as solid/liquid waste, transport, and public space improvements to enhance reputational capital, build trust, foster partner commitment, and build capacity for future larger scale rehabilitation and reconstruction.

D. At an operational level:

1. **Ensuring future sustainability and resilience by addressing capacity constraints:** Partners and stakeholders across all infrastructure sectors require support for capacity building on all aspects of planning, recovery, rehabilitation, management, and operations at local and regional levels. This includes establishing conditions; where possible, for drawing in additional resources such as harnessing and financing community led efforts, rebuilding opportunities for traditional service providers. Further, understanding that prospects for large-scale capital intensive financing of infrastructure through normal channels are limited by constraints of current aid policy, sanctions and operational environments, and in the long term, access to and management of capital and finance for infrastructure are essential, aid programmes could integrate discrete pilot programmes designed to build necessary fiscal capacity through direct financing pilot projects at local government levels (and in line with aspirations of Law 107) for smaller scale improvements of key urban infrastructure. With capacity constraints at all levels, marshalling resources from every sector is critical, and complementing aid-based delivery with capacity building to ensure future operability, resilience, and sustainability essential; particularly with infrastructure and service systems requiring long-term planning, oversight, and management.
2. **Planning balanced integrated approaches:** Understanding that infrastructure networks including roads, bridges and public transport, public spaces, parks and gardens, energy and communication networks, water and sanitation and solid waste management are interdependent and linked at all spatial scales. Restoration of infrastructure needs to be done based on broader urban planning processes and the land use plan. Interim interventions in the short and medium term need to be designed with a focus on holistic functionality of the services (for example; while repairing house connections for sewerage, support for sustainable operation of wastewater treatment facilities need to be integrated.) Care must be taken to balance inputs intended to increase resilience including climate resilience across all sectors understanding that the weakest links between interdependent

systems erode resilience of the entire system. Programming frameworks such as the Urban Recovery Framework provide space for partner agencies to strategically plan joint programmes addressing multiple needs for key infrastructure systems. Consequently holistic, integrated early support programming can have positive, wider influences on larger-scale upstream infrastructure rehabilitation/reconstruction while avoiding asymmetric development. Furthermore, when planning rehabilitation of infrastructure, options for decentralized solutions (such as micro grids for electricity, and decentralized treatment of wastewater with improved septic tanks) should be examined, considering the limitation in available resources and sustainability of the services. Finally, clear and common goals that articulate end-states of interventions intended to increase resilience of people (individually or collectively), institutions, systems (such as infrastructure) and organizations should be understood and form the foundation for planning and implementing 'resilient recovery'.

3. **Using existing tools, frameworks, and approaches to manage risk, forge interagency subsidiarity, plan long term infrastructure recovery, and deliver measurable improvements to key infrastructure.** Existing monitoring systems such as the Environmental and Social Safeguards (ESS) and Housing, Land and Property (HLP) due diligence frameworks provide useful approaches to measure impact and manage risk and could be utilized to capture recovery gains and adapted to foster subsidiarity across humanitarian and development divides. The Urban Recovery Framework (URF) already under joint agency implementation is a proven approach to realistic, achievable, high impact area-based programming improving the lives of Syrian citizens and establishing baseline inputs to longer term sustainable, resilient development trajectories.
4. **Financing for the future:** As prospects for large-scale capital intensive financing of bulk infrastructure through normal channels are limited by ongoing conflict, sanctions, a fragile economy, and fiscal capacity constraints at certain government levels, aid programmes could integrate discrete pilot programmes designed to build capacity through financing at local scales (and in line with aspirations of Law 107) for smaller scale improvements of key urban infrastructure within the constraints of current aid policy, sanctions and operational environments.

The above policy considerations are constructed to maximize the use of currently available resources from every possible source, adapting aid streams to ensure continuity across and through humanitarian/resilient-recovery transitions, and establish baseline inputs to key infrastructure sectors that will contribute in part to future full-scale rehabilitation, reconstruction, and development of Syria's infrastructure networks to a fully functional, modern, and resilient state.

08

Conclusion

This paper set out to explore the case for rehabilitation and recovery interventions for infrastructure and services in the Syrian context as it exists today.

Through exploring the complex contextual constraints and limitations, and specific assessment of the energy, water, communication, solid and liquid waste, and public space needs in a selection of cities while considering the increasing depth of poverty and privation among the Syrian population in-country; the paper attempts to stimulate debate and discussion among donors, agencies and policy makers, on making a case for enhancing current aid architecture beyond meeting the immediate, emergency needs of Syrians, to considering urgent needs for improving their lives and preventing increasing humanitarian need. In this case through the repair and rehabilitation of key infrastructure sectors to better deliver services that address the quality of life for those in-country, and those with aspirations to return. The case being made and considering the policy suggestions above including principles intended to maximise available resources and forge better subsidiarity among aid agencies; the potential to develop the organizational, regulatory, and operational environments to deliver repair and improvements in key infrastructure and service delivery can significantly impact the lives of citizens in a lasting and sustainable manner and leverage strategic shorter-term inputs for longer term gains.

In conclusion, at some point, hopefully in the near future, the war in Syria will end. However, it may take decades to rebuild an equitable modern society within which past enmities are minimized, social capital enhanced, economies thrive and citizens enjoy the benefits of functional social, economic, and environmental security once more. The position this paper takes is that in recognizing this could happen it is incumbent on those currently providing essential support to Syrian citizens in need, to do whatever is possible to set the country on a course to achieve those benefits at the earliest possible opportunity.

09

Annex A: Summary City Profiles

With data drawn from City Profiles undertaken by UN Habitat in 83 Syrian cities, these three case studies outlining infrastructure and service supply needs in Aleppo, Dar'a and Deir ez Zor have been selected as representative of typical demand in all Syrian cities.

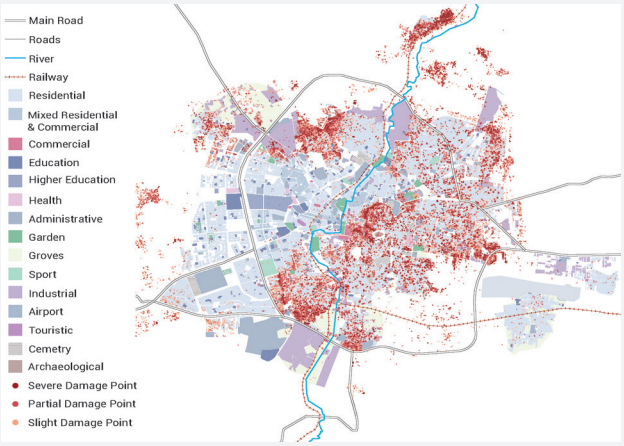
i) Aleppo[1]

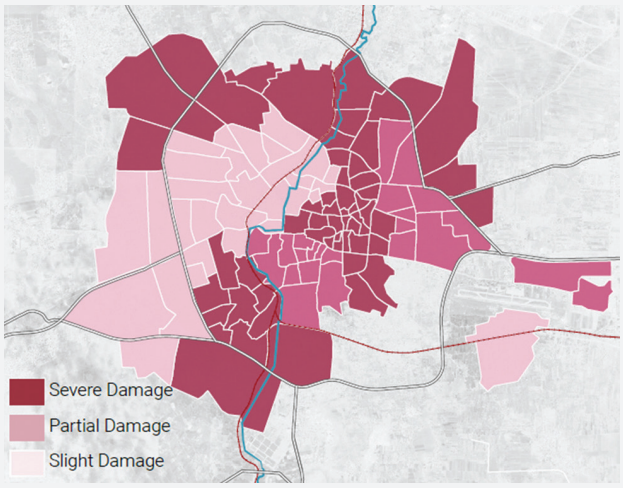
Aleppo damage overview:

- 46% of neighborhoods are severely damaged mostly in eastern and northern areas.
- 14% of neighborhoods are partially damaged.
- 40% of neighborhoods are slightly damaged (mostly western Aleppo).

The state of infrastructure:

- Aleppo city has suffered great damage, heavily affecting its infrastructure, analysis found that there is not a direct link between damages to housing and habitability levels. As people
- still occupy damaged areas due to a range of factors, which in turn affects functionality levels in Aleppo neighborhoods.





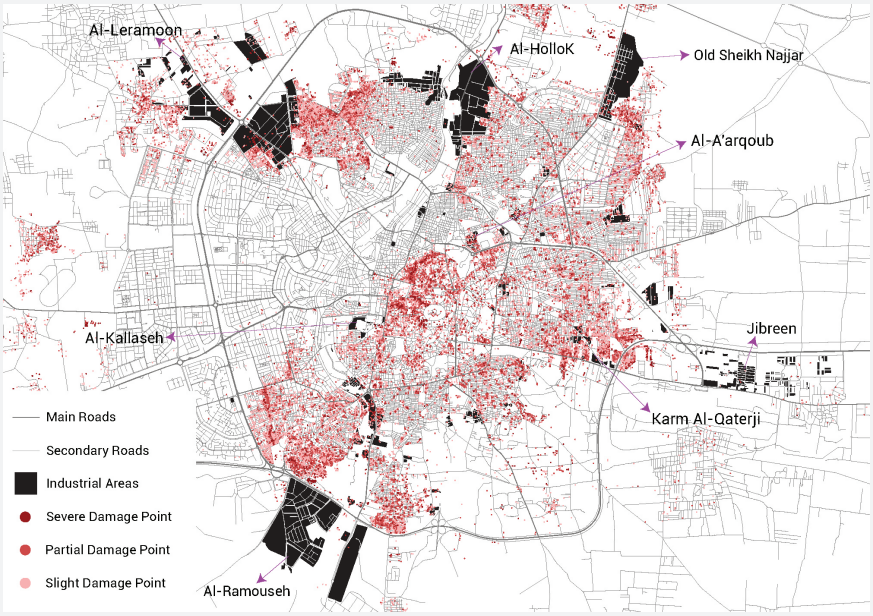
After four years of crisis from July 2012 to December 2016, Aleppo was recognized as the most damaged city in Syria. Damage to buildings is extensive and although there has not been a systematic detailed assessment of habitability of damaged buildings, demolitions have taken place across the city. Additionally, some damaged buildings have collapsed, resulting in fatalities. The destruction particularly affected the old city and Aleppo's eastern and southern areas.

1 UN Habitat, Aleppo City Profile, 2020.

Rapid damage assessment through satellite imagery concludes:

- 46% of neighborhoods area is severely damaged.
- 14% suffers partial moderate damage.
- 40% is slightly / not damaged.

Residential buildings are completely rehabilitated by residents, after national and international organizations undertake the rehabilitation of public spaces and roads. The Aleppo city engineers' syndicate is highly involved in the rehabilitation process along with the local community.



- The crisis was particularly devastating for Aleppo because it both forced the displacement of Aleppo's industrial base elsewhere and isolated the city from its rural base and surrounding markets.
- The main industrial areas, Sheikh Najar, Heidariya, Billeramoun, and Al-Ramouseh, shut down and were heavily looted during the crisis.
- 70% of the city's industrial production comes from small and medium-sized enterprises located in informal settlements, occupying 8% of the city's land use.
- These crafts were meant mainly for domestic consumption, but they increasingly provided a portion of exports to regional markets due to their relative competitiveness (demand for inexpensive, low-quantity shipments in the clothing industry for example).
- Approximately 91% of these crafts were directly affected, while the damage in official industrial areas is relatively light (22%).
- Loss of assets and production facilities is a common feature of many industrial establishments within the city and in the neighboring industrial and craft areas. Prior to 2011, urban areas of eastern Aleppo were "informal settlements" with more affordable living for migrant industrial workers that are currently necessary for revitalizing the industry sector and maintain its relative competitiveness, that calls for a different modality of thinking about informal areas in Aleppo city.
- As a result of the severe damages that the industrial and commercial centers in the city were subjected to (Sheikh Najjar, Al-Arqoub, Ramoussa, the old city, etc), many workers became unemployed, and that accompanied by a noticeable rise in the prices of basic commodities, which created a large gap between the need for consumption of poor and affected families and their purchasing power.

Aleppo still has a strong manufacturing base, and the Syrian market is eager to absorb its products due to the current complications that hinder imports. Significant activities in the contracting and reconstruction sector are noticed.

Damages in Aleppo city at Neighborhoods level, UN Habitat -Aleppo city profile, 2020

Key infrastructure related priorities:

Sewerage and sanitation:

According to data provided in the Aleppo profile:

1. Removing damaged network lines, treatment of wastewater pollution, and removing debris and sediments caused by lack of use.
2. Rehabilitation of minor damages to network lines, maintenance holes and storm water maintenance holes which were destroyed or blocked during crisis.
3. Repairing malfunctions in the network pipes and maintenance holes.
4. Some sewage lines are completely destroyed, and the process of damage assessment is ongoing in line with the rubble removal program set by the city council.
5. Coordination is made with donor organizations to replace inefficient sewage lines, as well as perform maintenance for the damaged machinery and support the provision of labor and machinery.

Water:

1. Rehabilitation of pumping centers in the northern, western and southern countryside.
2. Rehabilitation of damaged water networks as per the following priorities:
   - Sheikh Maqsoud, Ashrafieh, Jabriya, Al-Shaar, and Karam Al-Qatraji neighborhoods.
   - Huritan, Kafr Hamra, Bellermon Industrial area, Al-Reyada Association and Al-Rashideen neighborhoods.
   - The neighborhoods of Sheikh Saeed, Karm Al-Maysar, Al Harabla, Maqr AlAnbiaa, Jabal Badr and Ard Al Hamra, Sheikh Khader, Al-Haidariya, B'eedin.
3. Rehabilitation of the General Administration building in Suleiman Al-Halabi neighborhood, in addition to the Maintenance and Network Operations Department.

Energy:

During the crisis, transfer stations, transmission lines, and generation plants were damaged, so that electricity provision is limited to four hours per day or less. Furthermore, electricity access is uneven across neighborhoods; in the west, some neighborhoods have an average 12 hours of electricity a day, while in the east, most tneighborhoods have no electricity, and residents rely heavily on generators. The General Company for Electricity estimates that it requires some 2,600 transformers plus hardware, equipment and associated materials to replace remaining system requirements for Aleppo and its rural environs.

Solid waste:

Primary factors affecting the city council's capacity to manage solid waste has been the loss of close to 80% of its pre-crisis workforce and 66% of its equipment and machinery. Interim measures including both planned and spontaneous informal solid waste dump sites, large volumes of rubble, debris and household waste complicate and increase the cost of collection and transport to main landfill site(s) and lack of treatment capacity including recycling, recourse recovery, etc. overloads an already fragile system.

Transportation:

Key transportation issues relate specifically to expanding access to public transportation, provision of street lighting, and remediation of secondary roads in some neighborhoods.

Public space:

Most open spaces in Aleppo city sectors suffer the same issues related to access, damages, and deteriorating environmental conditions. Recreational public space in Aleppo is similarly affected and generally in need of maintenance or rehabilitation. Most public spaces in Aleppo city are connected to the main sewage network, however sewage connections have been damaged in some areas. The total area of recreational public spaces is insufficient in some sectors such as: Old Aleppo, Qadi Askar, Bab Al Nayrb, Ansari, and Al Sulaimaniyeh.

Detailed neighborhood assessments in Aleppo provide insights into community priorities within those scales. They report common concerns and priorities related to:

- Rubble/debris cleanup;
- Street lighting;
- Public space and gardens;
- Upgrading/repairs to access and internal road systems
- Repair top public buildings including schools and markets.

Communication:

The communication infrastructure is partially functional in Aleppo city, as many land line centers are damaged such as the. central telephone center in Al-Hamadanieyh service directorate. Mobile services are also affected by the lack of electricity supplies especially in eastern Aleppo.

ii) Dar'a[2]:

Key infrastructure priorities:

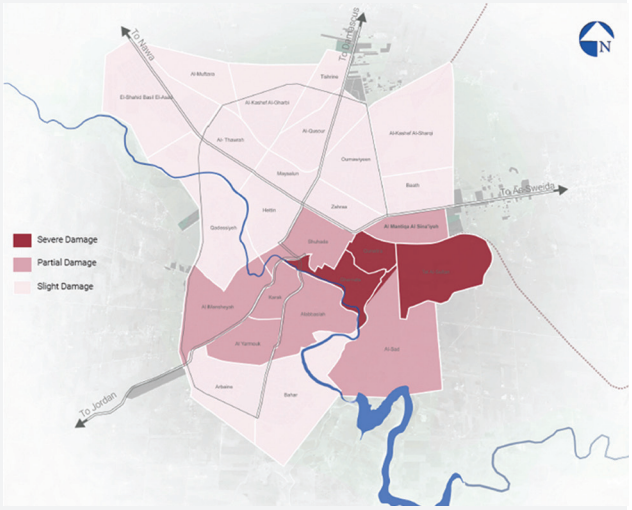
Dar'a damage overview:
In terms of the building damage rates in Dar'a neighborhoods, the analysis concludes that:

- 4 neighborhoods have suffered severe damage to structures, those are: Al Mansheyah, Al Yarmouk, Alabbasiah, and Al-Sad.
- 2 neighborhoods have been partially damaged in terms of structural damage, those are: Quneitra and Al Kark.
- 2 neighborhoods have minor damage to structures: Shuhada and Ghernata.
- 17 neighborhoods have no damages to their structures.

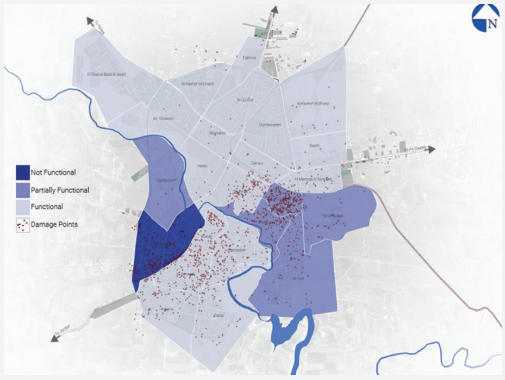
The state of infrastructure:
Infrastructure in Dar'a is either severely damaged (mostly in the south), or over strained due to the concentration of Dar'a's population in slightly damaged neighborhoods (the northern part), major needs are within social infrastructure (housing, WASH, education, healthcare,...). However, the economic infrastructure also suffers acute needs that require relatively larger financial resources.

In terms of overall area damage in Dar'a city, including buildings, and networks, the analysis concludes that:

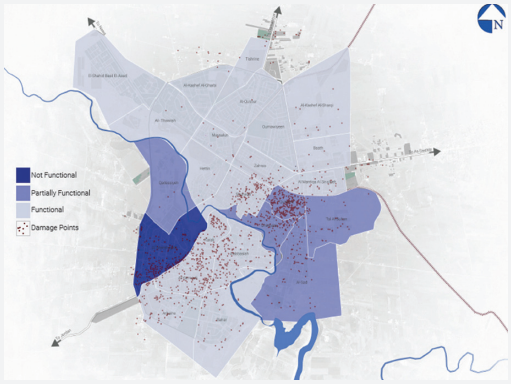
- 3 Neighborhoods suffered severe damage to building. structure and infrastructure (mostly in the camp area).
- 7 Neighborhoods have been partially damaged (central neighborhoods)
- 15 Neighborhoods have slight or no damages (northern and southern neighborhoods).



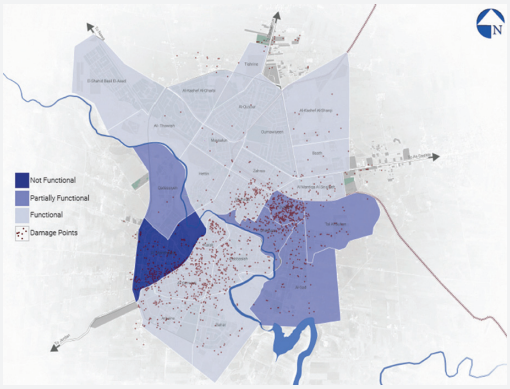
2 UN Habitat, Dar'a City Profile, 2020.



Damage on the Water Network:
Most damage on the water network is concentrated in Al Mansheyeh neighborhood, other locations such as Al Abbasieh, Al Kark and Al Sadd neighborhoods suffered partial damage.



Damage to the Sewage Network:
Al Mansheyeh neighborhood sewage network is severely damaged and in need of replacement and other parts of the network are partially damaged, mostly in the industrial area and Al-Zahraa neighborhood.



Damage on the Electricity System:
The damage on electricity lines and transformers is concentrated in Dar'a Al Balad, the industrial area, Quneitra and Ghurnata neighborhoods and Al Shuhada neighborhood

Damages in Dar'a city at Neighborhoods level, UN Habitat - Dar'a city profile, 2020

Key infrastructure related priorities:

Sewerage and sanitation:

Infrastructure has been severely damaged during the crisis, especially in the southern areas of the city (Al Balad). The northern area (Al Mahatta) has been slightly damaged due to pressure on networks and infrastructure because of the substantial increase in the population.

Short-term Urgent Response:

- Conducting awareness campaigns on the dangers of untreated wastewater drainage.
- Conducting awareness campaigns about the ramifications of irrigating crops with untreated wastewater.
- Maintaining the damaged sewage network.
- Supporting the General Company for Sewage and Sanitation with needed machinery, equipment and supplies, in addition to operational support.
- Implementing small and primary treatment plants for treating wastewater for small areas located on the outskirts of the city.

Water:

Dar'a is located within the Al Yarmouk hydro-basin, which is one of the few stable hydro-basins in Syria. The city receives its drinking water from two sources: the northern source near Attaman village (Ain Al Basal site 1.5 km to the north, with capacity of 50m3/ hour), which supplies Al Mahatta neighborhoods, and the southern source near Al Sadd lake (1 km south-east, with capacity of 10 m3/ hour), which supplies Al Balad, a part of the City of Dar'a facing major limitations to the supply to potable water. Key challenges include:

- Lack of fuel and maintenance have interrupted the operation of the southern wells, and few Al Balad neighborhoods receive water from the northern source. While water supply improved after the activation of Dar'a City hydration project in 2018, daily consumption rates of the residents have decreased to alarming levels owing to the inability of the Water Establishment to provide regular maintenance of pumping stations supplying pipelines into the city.
- In simple comparison, the network was originally designed to provide 70 – 90 liters per person per day (PPPD), while in 2020 this rate declined to 20 – 60 liters PPPD and has even decreased further in 2021.
- Al Yarmouk Hydro basin is dry. The uncontrolled digging of ground water wells has caused a major drop in ground water levels and was noticed due to the partial drying of Mezeireb lake.
- Al Mahatta area is strained by the influx of IDPs, unaccounted for in the design capacity of the water supply network.
- Damages in water network in Daraa al-Balad deprive more than 60% of the population from access to potable water and forced them to depend on unsafe and costly water trucking.
- There is a continued need to provide water disinfection products at the household level to prevent cross contamination of water and to avoid disease outbreaks.

Energy:

The damage to electricity lines and transformers is concentrated in Dar'a Al Balad, the industrial area, Quneitra and Ghurnata neighborhoods and Al Shuhada neighborhood. Consequently:

- The city's neighborhoods have approximately 12 hours of electricity per day through the public network. Nevertheless, the city often suffers from days of total blackouts due to vandalism or damage, or due to increased demand from the strained neighborhoods. Electricity supply to the southern side of the city is significantly less, and days of total blackouts are more frequent.
- A surge in privately owned generators is observed in Al Mahatta area, but most of the installed generators are dedicated for commercial services. Private medical care service, educational facilities and remaining local markets are the most impacted sectors by electricity shortages.
- Lack of electricity supplies to households is also contributing to water shortage as households' pumping equipment cannot operate during the limited water pumping hours.

Solid waste management:

Solid waste collection and disposal operations are extremely challenging in Dar'a city. Most of the municipal equipment and staff capacity has been lost during the crisis, while the total number of current inhabitants has not significantly decreased. The governorate has provided some support. However, the city is currently operating only 2 heavy vehicles and 4 tractors to collect the solid waste generated by 100,000 people in Al Mahatta. Additionally:

- Access to the city landfill (south of Al Bahar neighborhood, 12 km from city center) is totally

blocked, and currently, the governorate has established a temporary dump site 6 km north east of the city on a hill that overlooks an old quarry.
- The municipality needs to quickly increase its waste collection capacity, which requires additional equipment, as well as technical and financial support.
- Emergency solid waste transfer and management need to be developed for the city's neighborhoods, especially in Al Balad area where municipal service is almost absent.
- The river valley also lacks solid waste management services.
- Solid waste management is partially functional in Al Mahatta, but it is not functional in Al Ballad.

Transport:

There are only four state buses available across major hubs in the city covering only 30% of the city's need and leading to dangerously increasing crowding consequently increasing risk due to COVID transmission in spite of new laws requiring wearing of masks.

- Dar'a city entrances are all damaged (Yadoda, Othman, Kherbet Ghazaleh, Naeemeh).
- Al Mahatta and Al-Balad areas are connected by two functional bridges.
- Some roads are blocked due to debris. About 30% of debris has been removed from commercial markets, 60% to 70% of debris is still present in streets and vacant plots. Debris is being transported to quarry lands near Alshayah area.
- Debris removal from the main axis in the city centre, followed by rehabilitating the axis.
- Busra Roundabout is severely damaged and needs extensive rehabilitation works.
- The bus terminal on Naeema entrance and the one in the city centre must be connected by public transportation. Work has already started with the support of a private donor, however, the need to rehabilitate Busra roundabout is still present.

Public Space:

Generally, there is a limited total area of green open spaces (0.2%), public gardens are not functional in Dar'a Al Balad.

However, as part of the planning for nine of the most important parks, each was assessed against the criteria of access and linkages; uses and activities; comfort and Image; and sociability.

Key findings reveal only two of the parks meet 80% or more across all four criteria, and others scored less than 50% primarily due to limitations on use and activities. All parks met safety criteria and were suitable for use by girls and women and the highest scored criteria for all parks was 'Comfort and Image', however the lowest scoring criteria was 'Sociability'. Key factors reducing overall scores were related to access both to and within the parks throughout the city.

iii) Deir-ez-Zor[3]

Deir-ez-zor damage overview:

Like most cities throughout Syria, Deir-ez-Zor's urban areas suffered a disastrous toll from the war. After nine years of crisis, over half of the city's population were displaced leaving 13 of its 17 neighborhoods completely abandoned. Throughout the Syrian crisis, much of the city's infrastructure has been damaged, degraded, and in some cases destroyed.

The state of infrastructure and services:

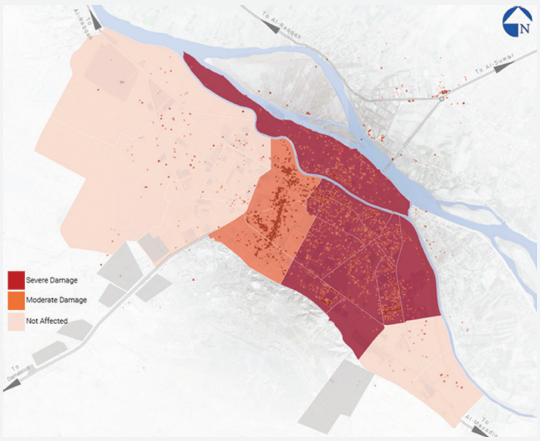
- The lives of Deir-ez-Zor residents have been dramatically altered, many families have been separated due to insecurity and displacement.
- Public services and facilities across every sector have been affected. All of the city's eight bridges were damaged, dividing neighborhoods on the north-east side of the river and ceasing transportation and trade to cities further north, including Al Hassakeh and Al Qamishli.

3 UN Habitat, DEZ City Profile, 2020.

- Connection to the national power grid was disrupted, disabling the city's electricity supply. Starting from 2015 up until 2018, the city suffered an almost complete blackout from the electricity grid, forcing residents to rely primarily on generators.
- Municipal services and administrative capacity were severely impacted. Many primary government functions were either transferred to other locations or discontinued due to damage and insecurity, this includes courts and notary services, officiating of property transactions, and other licenses and official documentation.
- The economy, environment, food security, governance, urban infrastructure and various other basic services and community functions have been severely impaired. They will all require significant reinvestment.

Damage assessment was conducted in 2018 by Deir-ez-Zor municipality in coordination with the engineer's syndicate. It was concluded that: 39% of pre-crisis residential areas have been damaged (moderate to severe damage):

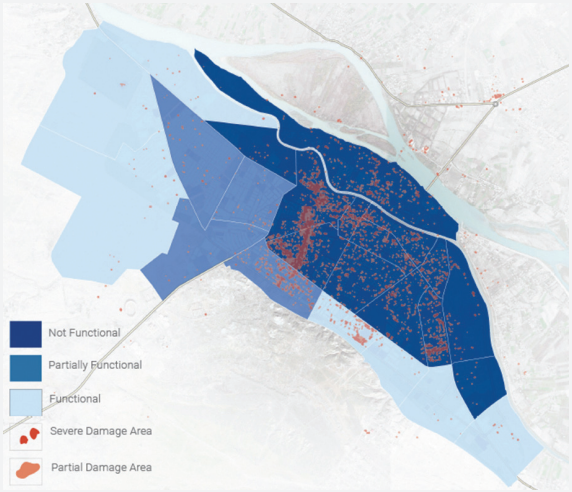
- 58,686 Housing units are not damaged.
- 28,997 Housing units are partially damaged.
- 9,184 Housing units are severely damaged



Drinking water:

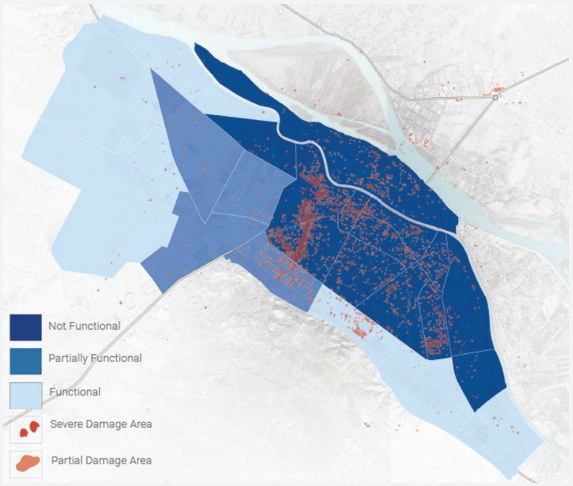
During the crisis, most water stations in the city were damaged. The water networks were also damaged and destroyed, which led to the suspension of water delivery to large areas, in addition to contamination of drinking water by wastewater in several areas of the governorate. This was a result of poor performance of operating treatment stations.

- The city of Deir-ez-Zor was mainly fed by 5 main stations distributed as follows: Al-Basel Station (with a production capacity of 120,000 m3 / day), the old station (40,000 m3 /day), and the Damascus Road Station (16,000 m3 / day) and two other stations: Othomania and Hawijeh Sukr (11,500) m 3 / day. A number of stations have been restarted to pump drinking water: Al-Basel station (1,200 m3 / hour) in addition to the Damascus Road stations (560 m3 / hour) and the old station with a capacity of 1850 m3 / hour.



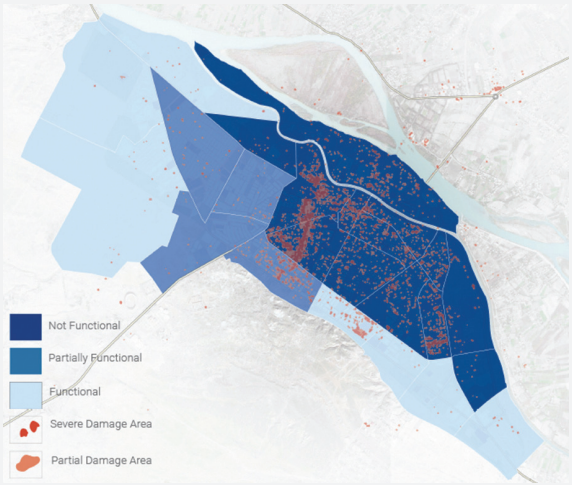
Sewerage system:

The length of the main sewage network in the city is 200km. Due to the crisis, maintenance and rehabilitation operations have stopped since 2012.



- After the lifting of the siege on the city in 2017, the city council supervised and implemented maintenance operations for the network. About 4 km of subsidiary lines were rehabilitated and maintained in addition to two main lines with a length of 125m, A part of the main sewage pipeline in the city, which passes along the river with a length of 5,875m, was rehabilitated in cooperation with the Red Crescent.
- The sanitation network for the teachers' housing area was rehabilitated.
- The sewage network has been rehabilitated in Al-Hamidiya neighborhood and part of Al-Jubaileh neighborhood.
- The governorate wastewater flows into the course of the Euphrates River, where about 30,000 cubic liters per day go into the river every day, which causes high pollution levels.
- The sewage sector in the city lacks equipment and financial resources.
- The Ministry of Water Resources is working to expedite the implementation of the sewage treatment plant and the pumping station.
- Implementation of the Deir-ez-Zor wastewater treatment plant was initiated in 2011, however it stopped due to the crisis. It is necessary to accelerate the implementation of this project due to sewage waste pollution into the river, especially during periods of drought and lack of rain, as the level of river runoff and depth of water weakens.

Energy sources and supply



- Electricity is not sufficiently available through the electricity grid, as electrical infrastructure has largely been destroyed. Local electricity provision occurs mainly through privately owned generators and is reliant on subsidized fuel. The General Organization for Electricity has reportedly been repairing electricity networks, stations, and transformers.
- The damage rate of the electricity networks is estimated at 90%, whether because of destruction or because of the looting of transformers and wires, in addition to significant
- damage in most of the electricity stations.
- Two out of 13 sub-stations feeding from the general generating station are currently operating through a 400 kv line, which is loaded with tension of 230 kV, through a 125 MV transformer. The needs of the governorate to activate all stations are estimated to be at least 5000 transformers.

Damages in Deir-ez-Zorcity at Neighborhoods level, UN Habitat - Deir-ez-Zor city profile, 2020

Key infrastructure related priorities and challenges:

The main challenge is to restore the economic and social identity of Deir-ez-Zor Governorate after the crisis, particularly obstacles such as infrastructure in the main market and industrial zone are completely destroyed.

IDPs, who have not yet returned to their original devastated homes, are living under difficult conditions and lacking basic services.

Collapsed infrastructure, suspension of investment projects and bad economic situations resulting in the deterioration of the investment reality, and poor private sector contribution.

Social disintegration, tribal conflicts, forced displacement, domestic violence, and extreme poverty are among the main threats to the community.

Decreased municipal capacities due to large immigration among technicians and administrators, in addition to limited municipal investment and financial capacities.

Insufficient water supply to a number of eastern neighborhoods in Deir-ez-Zor city.

Sewerage and sanitation:

The governorate wastewater flows into the course of the Euphrates River, where about 30,000 cubic liters per day go into the river every day, which causes high pollution levels. Therefore, the highest priority is eliminating pollution from the city:

- Rehabilitation of the damaged sewage network in some residential areas.
- The general maintenance of the sewage network including cleaning septic tanks, opening blockages in the network, and repairing broken network ducts.
- Cleaning the rain drainage network and septic tanks within the city from rubble and dust.
- Treatment of pollution within rivers and water bodies:
- Rehabilitating and extending the main line of the city's sewage network, while studying the possibility of implementing a pumping station to divert the sewage course from the Euphrates River to the vicinity of the city.
- Accelerating the implementation of a wastewater treatment plant for Deir-ez-Zor City. Environmental Protection.
- Rehabilitation of the damaged sewage network in some residential areas.
- Protecting water resources, especially drinking water wells in areas close to the city.

Water:

During the crisis, most water stations in the city were damaged. The water distribution networks were also damaged and destroyed, which led to the suspension of water delivery to large areas, in addition to contamination of drinking water by wastewater in several areas of the governorate. This was a result of mediocre performance of operating treatment stations.

The Water Directorate supervises a pumping station near Al Thawra neighborhood, which is the only station currently operating in Deir-ez-Zor city. However, water networks in agricultural areas outside Deir-ez-Zor city are largely non-functional, which has had a significant and negative impact on local agricultural production. In general, approximately half of the population (including residents, returnees, and IDPs) report water as a priority need (noting some geographic variance).

Since autumn 2020, unseasonably low levels of rainfall across the eastern Mediterranean basin. Poor precipitation during the 2020/2021 winter season negatively impacted several governorates in the northeast, including Deir-ez-Zor. At the same time, water flows into the Euphrates River from Turkey progressively reduced during the same period, falling from 500m3 per second in January 2021 to 214m3 per second in June 2021. As a consequence, the hydroelectric potential of the Tishreen and Tabqa Dams, significantly diminished, leading to reduced energy production capacity, which have resulted in power blackouts across northeastern Syria, and limited electricity to 1-2 hours a day in some locations. This, in turn led to reduced operations of vital water pumping stations, which impacted available drinking water across Al-Hasakeh, Ar-Raqqa, Deir-ez-Zor and Aleppo Governorates. In total, 54 of 73 water stations along the western bank of the Euphrates were significantly impacted by critically low water levels. The water shortages also posed a significant threat to agricultural production and food security, while contaminated water created

additional public health risks, with the Early Warning, Alert and Response System (EWARS) detecting a substantial increase in the number of acute diarrhea cases recorded in the northeast in May 2021 (17,166) compared to the same month in 2020 (7,355).

Energy:

Electricity is not sufficiently available through the electricity grid, as much of the electrical infrastructure has been destroyed. Local electricity provision occurs mainly through privately owned generators and is reliant on subsidized fuel. The General Organization for Electricity has reportedly been repairing electricity networks, stations and transformers.

An estimated 90% of the electricity networks have been destroyed as result of destruction or from the looting of transformers and wires.Two out of 13 sub-stations feeding from the general generating station are currently operating through a 400 KV line, which is loaded with tension of 230 kV, through a 125 MV transformer. The governorate needs at least an estimated 5000 transformers to re-activate all stations.

Solid Waste:

Deir-ez-Zor city suffers from a lack of machinery, equipment and labour affiliated to the city council, where the provided statistics are estimated as follows:

- Number of sanitation workers: approximately 125 workers.
- Number of mechanisms operating in the municipality: 3 compressors, 3 compressors under maintenance by the government, 1 compressor under maintenance, 3 tractors and 2 tippers.
- Number of serviceable mechanisms: 2 compressors, 4 tractors with trailers, 1 flap.

The total estimated daily household waste for inhabited neighborhoods is 150-175 tons per day. However, the percentage of households who reported not having access to garbage collection (free or paid) for garbage disposal is 78%

The site of the city's formal landfill is relatively remote (23km from the city center), therefore, and due to reduced municipal capacity (primarily the lack of sufficient operational collection vehicles), the municipality has been dumping at an old unmanaged dump site that is closer to the City (7 km from the city center). Although the formal city landfill and waste disposal facility outside the city was not directly damaged during the conflict, significant looting resulted in the compactors becoming nonoperational. Since regaining control of the area, the governorate has restored this facility and made it accessible for use. Nevertheless, random dump sites have grown in the vicinity of the city, especially for rubble and debris.

Transportation:

Deir-ez-Zor is located in Eastern Syria and the city is distributed on both sides of the Euphrates River. Consequently, connectivity to both sides is critical. However, all six bridges spanning the river have been heavily damaged or destroyed throughout the crisis. Additionally, many of the roundabouts connecting various neighborhoods and main and secondary roads have been damaged or remain closed due to rubble and debris, and street lighting destroyed in many parts of the city dependent on grid energy for lighting.

Public Space:

Limited access to open public space is only an issue in the city center, open space outside the center is roughly 25% of the city's total area and there are ample natural spaces along the riverbanks and separating neighbourhoods.

Communication:

The city's authorities were able to restore internet and telephone services in July 2018. The government has also procured the installation of new fibre-optic lines to cross the Euphrates River in order to improve Internet access and connectivity in the entire Al Jazeera Region, starting with Deir-ez-Zor City. The post office is operating from a temporary location, while private operators of mobile phone services are working to improve connectivity and coverage, including 3G services.

Homs city, 2022[5]

Strategic Framework for Homs Integrated Recovery Plan:

The Urban Recovery Profile of Homs provide a comprehensive overview of Homs city's interlinked return challenges, in the context of major conflict impacts. The process includes extensive community consultations and wide-ranging analysis on damage levels, infrastructure and service functionality, environmental degradation, economic barriers and options for local economic development, rights protection (including HLP issues), threats to urban heritage, local governance issues, social cohesion issues, etc. Return considerations are further informing the Recovery Plan and proposed priorities. It is anticipated that the comprehensive recovery plan will provide a strong platform for area-based return support and joint programming, and that it will likely generate future funding support. The process is aligned with Urban Recovery Framework (URF) which can be described as an enabling institutional and policy framework and related programming to support resilient urban recovery at scale and the renewal of the social contract. The cycle of analysis-planning-implementation-monitoring tailors the URF process to the recovery of Syrian cities.

The approach for Homs Integrated Recovery plan has been developed with three broad strategic objectives:

I: Vision and mechanisms for integrated and bottom-up recovery prioritization
II: Economic recovery and strengthened value-chains
III: Service functionality restoration in support of resident and displaced communities

The process was conducted based on the wide participation and engagement with local community. Their involvement was principal in the different activity stages at city scale with the most relevant being at the neighborhood level. Between December 2021-January 2022, UN-Habitat did elaborate a detailed field assessment in the 21 targeted neighborhoods (selected on set of most vulnerable criteria), based on the consultation process and training on the field with local community representatives. The assessment aimed at the better understanding of displacement dynamics at the neighborhood level in relation to damage impacts on the building and neighborhood scales, Fig(A) as well as characterizing the situation of internally displaced persons, return origins and analyzing related findings.

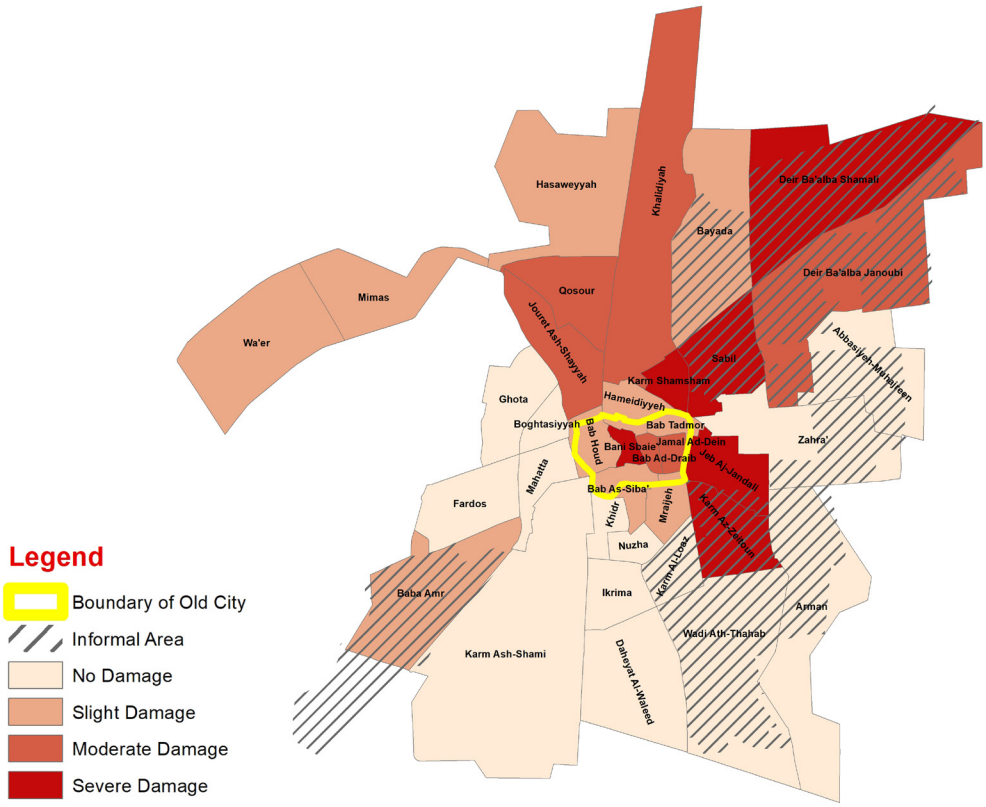
The process follows the sequenced methodology steps:

- Understand urban contexts and arrange the needs through a multistakeholder approach, involving local actors, private sectors, local authorities and engage with civil protection needs
- Mainstream urban dimensions in the discussion and priorities, including tools and modalities, and field detailed damage assessment analysis
- A multi-sectoral approach, supporting existing services, infrastructures, and systems through an integrated approach rather than creating parallel system of sectors delivery.
- A Digital tools training using virtual tools and applications for safer city access and social cohesion strength.
- Develop sectoral studies for: Local Governance, Local economy, Environment and Hosing costing, main sectoral needs, and priorities.

One relevant output is infrastructure functionality assessment and priority need at city and neighborhood levels, in addition to the costing estimation for funding actions.

5 URF- Homs response plan & Digital tools Homs city - Urban damage costing, 2022

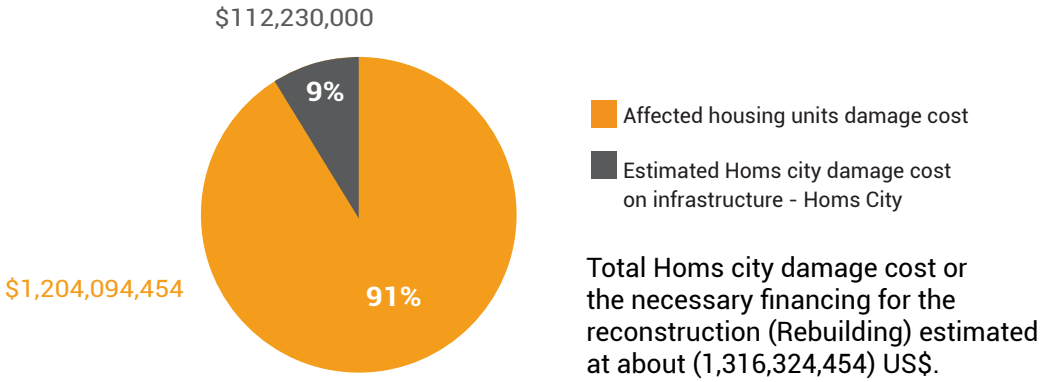
Figure 19: Map of The level of damage to the residential neighborhoods of Homs city



Damage costing analysis

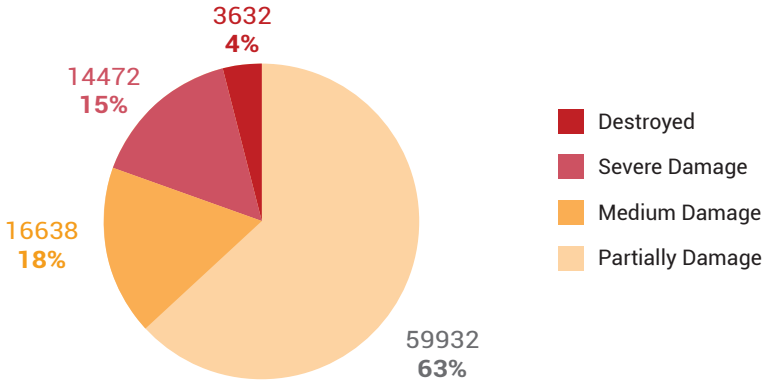
As a result of the Syrian conflict Homs governorate have been affected heavily specially the city of Homs and many areas such as Rastan, Houla, Al-Qaryatayn, Palmyra, Al-Hosn, and Al-Qusayr.
The detailed damage costing analysis in Homs city for several infrastructure facilities in the city, include ten sectors, due to the fact that main sector heavily affected by the conflict in Homs city was housing and it need to be analyzed in separate paragraph, within this we have 11 sector. It is also possible to estimate the costs of damages, or in other words, restore the situation to what it was, and in a better manner, according to the current approved prices, the adoption of several synonyms for assessing the infrastructure damage in Homs, especially the residential sector, is very important in terms of its comprehensiveness to take the issue of energy conservation and the adoption of thermal insulation of damaged buildings. Through this assessment of the damage to the infrastructure, the value of the lost opportunities because of the conflict in the city of Homs is supposed to be estimated, as the city was expanding in all sectors at a rate of more than two percent annually. The results showed a cost-of-damage analysis, that costs of damages to the housing stock in the city constituted the largest proportion of the damages in the city and constituted about 91%of the total costs, Fig (11).

Figure 20: Damage analysis in Homs City, that costs of damages to the housing stock and Infrastructure



1. Damage cost on Houses stocks:

The damage results were analyzed at the housing unit level based on the field assessment form indicating the housing types and occupancy. The total number of housing units in the targeted neighborhoods was estimated to 95,000 units. Only 4% (3632 units) of total housing stock is destroyed. About 19% of the housing units are structurally damaged. A structure assessment is required to secure the access and rehabilitation. The average percentage of moderate damaged housing units is about 18% (16638 units). The number of lightly damaged or affected housing units is estimated to (59932) housing units, representing 63% of the estimated housing stock in targeted neighborhoods (Table; 1).



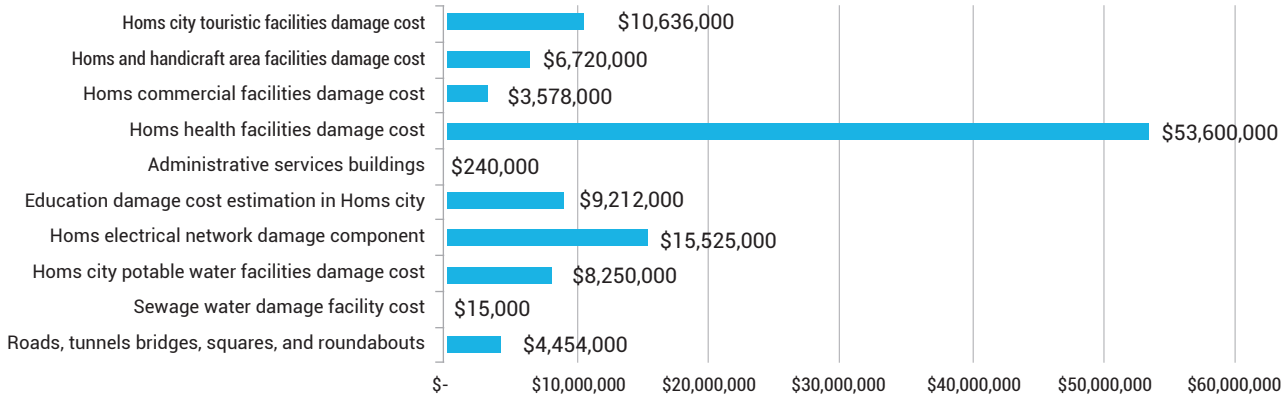
Table, 1: Damage costing on housing stock

Preliminary Estimated Total Homs city houses (190000)					
Preliminary Estimated Damaged Houses in Homs City (95000)					
FIRST ALTERNATIVE	DESTROYED	Severely damaged	Moderate damages (medium)	LIGHT (PARTIALLY) DAMGES	TOTAL
DWELLINGS	5500	13500	16000	60000	95000
Preliminary damage costs	$ 165,000,000	$243,000,000.	$ 230,400,000.	$ 576,000,000	$ 1,214,400,000.

2. Infrastructure networks and services facilities, Fig (12)

The damage costs on infrastructure networks and service facilities in the city were analyzed according to the following (Road, sewerages, drinking water, electricity and communication, health education, commercial, Tourism, administrative services) in the city"

Figure 21: Costs of damage to infrastructure networks and service facilities in the city of Homs



2.1. Road network, and utilities including, tunnels, bridges, squares, and roundabouts:

According to Homs governorate majority of roads, squares bridges and roundabouts not damaged and recovered. **Only following roads, squares and facilities need to be recovered in Homs city:** Main and secondary roads need to be rehabilitated with an area (160000) m2. Also one main road from Algawieh square to 8 Azar square with a length (1600) meter.Three squares (Almuasalat, Maared Alsayarat and Almahad Altigari) need rehabilitation. Installing sidewalk tiles for (25000) sq. Meter and curbs for these sidewalks with length (6500) Meter. Qosour neighborhood front with (40000) sq. meter area to be prepared for new facilities.

Total cost of all above mentioned recovery projects estimated at about (4454000) US$.

2.2. Sewerage networks and facilities, including wastewater treatment plants:

All main (12) sewage water lines in Homs city with total length of (76492) meter. Three Main lines was affected during the conflict (Line A, supportive line and line I). During 2016 line A and supportive line was repaired with cost of (50000) US$. The main sewer lines I, as the length of the damaged part of the line 10 m, the diameter is 140 cm, and it is located within Al Shaab Park, and t**he cost of repair is estimated to (15000) US$.**

Homs governorate had 7 sewage water treatment plants with total daily capacity (136125) m3.

The main and biggest one is Homs city sewage water treatment plant with daily capacity (132000) m3. Now days working with (70000) m3/day due to the fact that a lot of Homs population not returned yet.

Homs City Sewage Treatment Plant was damaged partially and maintenance carried out at a cost of about (200,000,000) S.P estimated to (4000000) US$ from the company's available funds and cooperation with donors and in operation.

Attached a word file (Homs sewage water) with all details of sewage water in Homs city and governorate.

Estimated sewage water facilities damage cost at about (15000) US$.

2.3. Drinking water supply systems including networks, water pumping stations, water treatment and purification stations:

a. Sources of drinking water:

Total Homs governorate drinking water sources are (365) with Average daily pumping m3/day (241343) m3 and (434000) customers, water losses (34%), Homs city (228000) customers. the per capita share of water in the city is 88 liters/day.

Homs city potable water sources are (34) with Average daily pumping (140595) m3/day, main sources are two spring sources (Ain Attanour, Ain Asamak) in addition to (9) wells in the mentioned spring boarder with Average daily pumping m3/day (123065), city wells (48 wells distributed over the city's neighborhoods, 26 wells were rehabilitated and put into service with a production capacity of (7400) m3/day and work is currently underway to rehabilitate the rest of the wells)

Estimated damages costs in Homs drinking water sources facilities governorate estimated at (12500000) US$, Since 2014 up to date more than (7000000) US$ spent for rehabilitation and recovery of water sources.

Affected sources during the period 2011-2020 in Homs city:

Al-Sultaniya Wells - Baba Amr Wells /1-2-3/- Al-Qusour Well - Al-Bayada Well – Dier Beaalba well- Al-Kasara Well - Maskan Al-Moalemen Wells/1-2/ - Mosque of Omar Bin Abdul Aziz Well - Bab Al-Dreeb Well - Hamediya Al-Taher Well - Karam Shamsham Well.

Recovered sources of Baba Amr, Bayada, Deir Beaalbeand Zahra wells.

Attached you find a word file with detail affected potable water sources, reservoirs(tanks) and network in Homs governorate and Homs city (Drinking Water Homs).

Estimated damage costs of unrecovered water sources in Homs city at about (2500000) US$.

b. Potable water network (transmission and distribution lines for raw, filtered, and ready-to-use drinking water):

Majority of damages recovery works in the networks is the maintenance of subscriber links, the installation of water meters and stops instead of the stolen and the necessary accessories.

Total damages cost in Homs governorate network estimated at about (11500000) US$, Up to date maintenance and recovery works of the network costs at about (3450000) US$ spend to rehabilitate and recover potable water network.

Estimated rehabilitation cost of unrecovered potable network components in Homs city at about (2750000) US$.

c. Potable water purification plants:

Homs city purification plant: The work has not been completed - the total completion rate is 65% where the work has been done (filtration basins - service building - external siltation - spillway line - mixing tank - pumping lines within the station - alum building - sub-transformation station - sand catcher) - the station needs to complete the work Providing electrical and mechanical equipment.

Estimated cost of remaining works in the potable water treatment plant in Homs city (1500000) US$.

d. Pure water tanks:

The total tanks (reservoirs) in the governorate (400), in Homs city (20) tanks (5 ground tanks and 15 high tanks), total damage tanks cost in the governorate estimated at (6000000) US$, some reservoirs(tanks) recovered with a cost (700000) US$.

Only one tank in the city affected during the conflict (Sultanieh high tank).

Estimated damage cost of Sultanieh tank at about (1500000) US$.

Total damage cost of potable water facilities in Homs city estimated at (8250000) US$.

2.4. Electricity network/system and landline (telephone) network/system with facilities including distribution and generation.

Homs governorate had (242) telephone centers with total capacity of (598343) ground telephone lines where (378081) ground telephone lines in operation. According Homs communication governorate all telephone exchangers in the city recovered except telephone exchanger of Bayada with (30000) landlines telephones (9000 lines is recovered and **remaining (21000) landlines telephones under rehabilitation and will be recovered) with estimated cost (3150000) US$.**

According Ministry of electricity reports, Electrical Energy sector in Homs governorate was as follows: two thermal power plants with installed capacity (1702) MW, (2) substations 400/230 KV and 400/230/66 KV with capacity (1150) MVA, (6) substations 230/66/20 KV with capacity (1355) MVA, (38) substations 66/20 KV with capacity (1402) MVA, (4840) km medium voltage (20) KV lines, (7370) km low voltage (0.4) KV lines, (4140) Transformers posts 20/0.4 KV and (505599) customers where household customers were (410496) customers.

Damaged electrical network components during the conflict in Homs city as follows:

Transformers 20/0.4 KV (146) transformers with total capacity (101) MVA
Recovered during 2014-2021 (55) transformers with capacity (45) MVA, not recovered yet (91) transformer with capacity (56) MVA.
Medium voltage 20 KV lines with a length (435) Km, recover during 2014-2021 (347) Km, not recovered yet with length (88) Km.
Low voltage Lines 0.4 KV (297) Km, recovered during 2014-2021 (158) Km,
Remaining unrecovered (139) Km.

Damage cost for unrecovered electrical network components estimated about (15525000) US$.

2.5. Education facilities (schools, universities, and institutes):

According to Syrian Statistical Yearbook 2011, in Homs governorate had (1525) schools with (238500) pupils of basic education, students of secondary and professional secondary stage, (773) kindergartens with (14846) children. There is no damaged universities or institutes in the governorate. A (628) of schools damaged within the conflict (370 schools in severely damaged areas and 4 schools destroyed). During 20104-2021 of these schools (248) recovered, In Homs city (21) schools need to be rehabilitated (recovered), these schools are: Ali Ibn Abi Talib, Abdul Muhaimin Abbas, Khawla Bint Al Azwar, Ibn Sina Professional, Belqis, Abdul Qadir Rajoub, Ugarit, Muhammad Ali Hanouf, Fatimid, Yarmouk, Ayham Rashid Dioub Professional, Asmaa High School, Tariq bin Ziyad, Marwan Zain al-Abidin, Yusuf Al-Azma, Abdul Bari Fahd, Seif Al-Dawla Al-Hamdani, Dia Al-Din Kalib, Nizar Tamer Khalil, Ayman Saleh Al-Ali and Seville school.
Average land area of each school is about (2000) m2, in general each school is a building consisting of a basement and three floors, with an area of 700 square meters for each floor (total building area is (2800) m2. Attached an excel file (Homs education damage cost facilities) with detail damage cost calculations.

Estimated damage cost of education facilities which need rehabilitation estimated at about (9212000) US$.

2.6. Administrative services buildings:

According all data related to administrative building received from Homs Governorate, majority of service building estimated within sectors, only two building needs rehabilitations- The branch building of the Engineering Studies Company in Homs has been renovated with two floors and two floors need to be rehabilitated and the health department building that belongs to the Homs city council.

Estimated area of two mentioned building (1600) m2, estimated rehabilitation cost of both building at about (240000) US$.

2.7. Health facilities, including hospitals, clinics, and health centers:

According to Syrian Statistical Yearbook 2011 Homs governorate health sector components reached (46) hospitals with (2842) beds, (217) medical centers and medical points, also (2961) Physicians, (1526) Dentists, (1725) Pharmacists, (718) midwives and (3597) nurses. According to Homs governorate data in 2021 the number of invested hospitals is (34) with a capacity of (1403) beds only, also (39) medical centers damaged and out of services with need to be rehabilitated, including (8) medical centers in Homs city. The biggest hospital in Homs governorate -Homs national hospital destroyed and it is necessary to be rebuild with (400) beds, land area (15000) m2, four floors with total building area (14000) m2, in addition to (8) medical center needs rehabilitation. Attached an excel file (Homs health facilities damage cost)

Estimated damage cost of health facilities in Homs city at about (53600000) US$

2.8. Commercial facilities (main commercial markets, wholesales) damage cost:

The heritage market area, the axis of the Al Sagha market and the Al Qasimi axis, need rehabilitation, with an area of (5200) m2.
The entrance to the heritage market and the Naoura market in the commercial center needs rehabilitation for the city, with an area of 3.5 hectares (35000) m2
Attached an excel file (Homs commercial facilities damage cost)

Estimated Damage cost for Commercial facilities (main commercial markets, wholesales) at about (3578000) US$.

2.9. Handicraft area facilities (workshops, factories… etc.):

Main project in Homs City is the new craft area in Deir Beaalbe neighborhood and it covers an area of (14.5) hectares (145000) m2. needs to be supplied with necessary services, needs (Substation 66/20 KV capacity 20 MVA,10 Transformers 20/0.4 KV capacity 1600 KVA, Low voltage network 2 Km cables, land lies Telephones, potable and sewage water network, Installing sidewalk tiles, curbs for these sidewalks and parking preparation.
Estimated cost of craft area needs in Deir Beaalbe neighborhood (4220000) US$.
Several needs of Hasaweyyah area estimated at about (2500000) US$.

Estimated Homs city handicraft area facilities damage cost at about (6720000) US$.

2.10. Tourist and entertainment facilities, including hotels, restaurants, stadiums, and historical places:

According Syrian Statistical Yearbook 2011 Homs governorate there were (52) hotels with (2026) room.
Hotels in need of rehabilitation in the city of Homs are: Mimas Hotel with area (400) m2, three floors and Raghadan Palace Hotel with area (800) m2 Three floors including one commercial, both hotels with total area (3600) m2
Gardens and playgrounds in need of rehabilitation in Homs city (Al Shaab Park area (350000) m2, Al-Dababir garden area (3000) m2, Al-Sham Road Gardens area (20000) m2, Al-Muhajireen Park area (35000) m2, Bab Hood garden area (14000) m2, Tripoli Road garden area (1800) m2), means all gardens in need of rehabilitation and recovery with area (423800) m2.
Estimated damage cost of touristic and entertainment facilities at about (10636000) US$.

10

Annex B: Examples of programmes addressing resilience in Syria

Among the many strategic programmes guiding operations throughout Syria are a number that specifically reference 'resilience' or resilient recovery

Syria Humanitarian Fund

https://www.unocha.org/syrian-arab-republic/about-syria-hf

Objectives of the ***Syria Humanitarian Fund (SHF):*** Under the leadership of the Humanitarian Coordinator, and in line with priorities in the Humanitarian Response Plan, the SHF mobilizes and channels resources to humanitarian partners to rapidly address the most critical emergency response needs for the millions of people affected by the humanitarian crisis in Syria.

Specifically, the SHF aims to support life-saving, protection, and life-sustaining activities by filling critical funding gaps; promote the needs-based delivery of assistance in accordance with humanitarian principles; improve the relevance and coherence of humanitarian response by strategically funding priorities identified in the HRP; and expand delivery of assistance to underserved and high severity areas through partnership with the best placed actors.

Syria Humanitarian Fund prioritizes: In general the fund is exclusively allocated to immediate life-saving humanitarian needs of Syrians within the country. However, it also prioritizes:

- *Social requirements such as …"protection support for women and girls including gender-based violence; reproductive health and women empowerment; people with disabilities and the elderly, education programmes for young people and life-sustaining needs in the most underserved, high severity areas and resilience programmes mainly for returnees in areas shifted control (sic)."*
- *"Leveraging on diversified SHF-partnerships…and (W)here possible local partners with access and capacity will be supported and prioritized in the implementation of SHF projects to enhance community engagement, ownership and improve their capacity…"*
- *Improving the relevance and coherence of the humanitarian response by (inter alia) "…(promoting) integrated programming/responses to identified needs…Priority sectors will be supported at national and sub-national level in and promote integrated programming/responses to identified needs."*
- "Strengthening risk management and accountability frameworks to enable effective use of resources and value for money…"

Adaptation Fund

Source: https://reliefweb.int/report/syrian-arab-republic/un-habitat-undp-fao-launch-adaptation-fund-project-address-climate

The "Increasing the Climate Change Resilience of Communities in Eastern Ghouta in Rural Damascus to Water Scarcity Challenges through Integrated Natural Resource Management and Immediate Adaptation Interventions" is sponsored by the Adaptation Fund and will be implemented by UN-HABITAT, UN Development Programme (UNDP), and the Food and Agriculture Organization (FAO), in cooperation with the Ministry of Local Administration and Environment.

The project will address climate change in the Syrian Arab Republic manifesting itself through various weather-related phenomena across different regions, particularly increasing temperatures and droughts in the short term and projected reduction of precipitation in the long term.
Targeting the municipalities of Al Mleiha, Zebdine, Deir El Assafir and Marj El sultan in Rural Damascus, the project aims to strengthen the capacities of national and sub-national government institutions and communities to assess, plan and manage climate change-induced and post-crises water and land challenges in an efficient, sustainable and climate resilient way.
A water supply system that is resilient to climate change will also be established with an improved wastewater treatment. Untreated wastewater is currently polluting water resources, irrigation channels, and soil. In addition, this system will use highly efficient irrigation technologies to benefit drought-tolerant crops and trees, and introduce climate smart agriculture practices and sustainable livelihood opportunities.

The Syria Recovery Trust Fund

See: https://www.srtfund.org/articles/1_overview

The Syria Recovery Trust Fund (SRTF) is a multi-donor trust fund initiated by the Group of Friends of the Syrian People and its Working Group on Economic Recovery and Development. It serves to channel grant funding from the international community in a transparent and accountable manner into projects inside Syria with the objective to alleviate the suffering of the Syrian people.

The Framework Agreement to establish the SRTF was signed on September 2, 2013. The parties to the agreement include the three original donors: the Federal Republic of Germany, the United Arab Emirates, and the United States of America, together with the National Coalition of Syrian Revolutionary and Opposition Forces (SOC) as the legitimate representative of the Syrian People, and the German Development Bank KfW as Trustee. Denmark, Sweden, Finland, Japan, the United Kingdom, Kuwait, France, Italy, and the

Netherlands have over time signed on to the Framework Agreement. In June 2014 Turkey joined the SRTF as a permanent member. Turkey is part of the SRTF governance structure in its important function as host country to the Fund's operational management. As of November 2015 Jordan is also part of the SRTF governance structure in its important function as a second host country to the Fund's operational management.

The purpose of the SRTF is to reduce the suffering of the Syrian people and assist the SOC in providing essential services to Syrians. Through the SRTF, donors pool their funds to finance priority projects for essential services in sectors such as water, health, electricity, education, food security, solid waste removal, as well as other sectors including rule of law, agriculture, transportation, telecommunication, public enterprise, and housing.

Implementing Entities are considered eligible if they are one or more of the following:

- Local councils, municipalities, and other local regional and national public administrative entities in Syria;
- Public service providers and utilities;
- Non-government legal entities (such as local and international civil society organizations), International Organizations, International NGOs and other public or private entities acceptable to the Management Committee (MC); or
- UN agencies, programs and funds.

The SRTF objectives include a focus on simultaneous restoration of essential services including electricity, water and sanitation, health, education, food security, and solid waste removal while strengthening capacity of various local service providers.

URBAN RECOVERY FRAMEWORK

UN HABITAT
FOR A BETTER URBAN FUTURE