KPMG

Post-war Reconstruction of Economy: Case Studies

KPMG in Ukraine

Content

Foreword

The escalation of the eight-years conflict between Russia and Ukraine following the full-scale invasion of Ukraine at the end of February resulted in a rise in inflation while exacerbating supply chain pressures globally. The impact of the sanctions on Russia and the uncertainty around the supply of some key commodities from Russia and Ukraine was particularly felt in Europe and few other countries which used to have some of the strongest trade connections with both countries.

The Russian invasion continues to cause massive destruction of Ukraine's infrastructure – including water supply, sanitation, mobile and electricity networks thereby further endangering the Ukrainian citizens. According to a recent economic update by the World Bank, Ukraine's economy is projected to shrink by 35 percent by the end of 2022. It is also expected that the number of people living in poverty in Ukraine will rise to around 25 percent by the end of this year, compared to 2 percent prior to the war. The World bank in collaboration with the Government of Ukraine and the European Commission have published an analysis of Ukraine's reconstruction and recovery needs in the form of Rapid Damage and Needs Assessment (RDNA), which estimates the total cost to be $349 billion as of 1 June 2022. This figure is growing as the war continues.

The Government of Ukraine with the support of international organizations like the World Bank, the European Union, and the European Bank for Reconstruction and Development (EBRD) as well as countries like USA, UK and others are committed to help Ukraine recover from the crisis and mitigate the economic and human cost of war. Since February 2022, the World Bank has mobilized around US$13 billion in financial support to Ukraine, of which about US$11.4 billion has been disbursed to date. The WB financing, supported by UK, the Netherlands, Denmark, Latvia and Lithuania of US$5.8 billion was mobilized under the Public Expenditures for Administrative Capacity Endurance in Ukraine (PEACE) Project, which supports continued government capacity, including the provision of core public services such as health, education, pensions and social protection. A strong collaboration among these stakeholders goes a long way to maintain the powerful message of hope of a better future to all the Ukrainian citizens.

The report takes cues from the recovery and reconstruction efforts carried out in other war-torn economies such as Syria, Kosovo, Iraq, Croatia, and Kuwait and offers a robust analytical underpinning for a thorough financial and operational strategy and keen to help Ukraine's early recovery and long-term reconstruction. Ukraine must balance and prioritize needs and investments, explore financing options, develop standard systems and procedures to maximum efficiency, ensure the growth of the managerial and technical capacity of implementation units, raise funds for project preparation and create financial strategies for various economic sectors. On other hand, the scale of destruction and financial needs for reconstruction will require a comprehensive and complex coordination mechanism between different actors (IFIs, countries and alliances) that is still in development process. When prepared, all these efforts will truly catapult Ukraine on a path of inclusive, accountable, and sustainable reconstruction and recovery.

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KPMG in Ukraine

01

Executive Summary

1 Executive Summary

Impact of Russia's invasion of Ukraine on the global economy

The war disrupted global production and trade of commodities across multiple sectors

- The war is estimated to have impacted more than 600,000 businesses globally and could slow down the global economic growth by 0.8 percent by the end of 2022 as compared to 2021.
- The global economy was impacted due to disruptions in production capabilities of both the countries and global supply chains which in turn created a scenario of global inflation.

Impact on global production

- Due to the war, manufacturers across multiple sectors halted operations in Ukraine as well as Russia.
- For instance, automobile manufacturer, Volkswagen, suspended operations in Russia, while automobile parts manufacturer, Sumitomo, shifted production from Ukraine to Romania and Morocco.

Disruption of global supply chains

- Blocking of Ukraine's Black Sea ports and diversion of cargo ships away from Ukrainian ports resulted in supply chain disruptions.
- As a result, raw material supplies to car manufacturers all over the world were disrupted.
- Fertiliser supplies were also majorly impacted.

Rise in commodity prices and inflation

- The war made the biggest impact to commodity markets in nearly 50 years in countries where Ukraine and Russia used to be the major exporters.
- With an increase of 154.5 percent, fertiliser prices witnessed the highest increase amongst all the commodities between January-March 2022.
- Prices of coal also shot up by 74.7 percent .

Ukraine's road to recovery

War-induced damages sustained by Ukraine

US$252 billion	• The value of total damages and losses due to the war is estimated to be US$252 billion. • It is further estimated that reconstruction and rebuilding cost could amount to more than US$349 billion.
US$127 billion	• The damages due to destruction of residential and non-residential buildings as of September 2022 is US$127 billion. • Between June and August, the war caused damages worth US$31.5 billion.
4.8 million	• Total number of jobs lost in Ukraine since February is 4.8 million. • In the event of the war continuing, even more citizens could lose their jobs and millions could be pushed into poverty, which could counteract the country's development efforts.

Ukraine may follow a similar damage assessment methodology as other war-torn countries followed in the past

1. Identification of priority sectors

- Priority economic sectors identified based on the population impacted, factors of production (labor, capital, raw materials and the market for management or entrepreneurial resources), manufacturing capabilities, manufacturing capabilities, exports, imports, contribution to GDP etc.

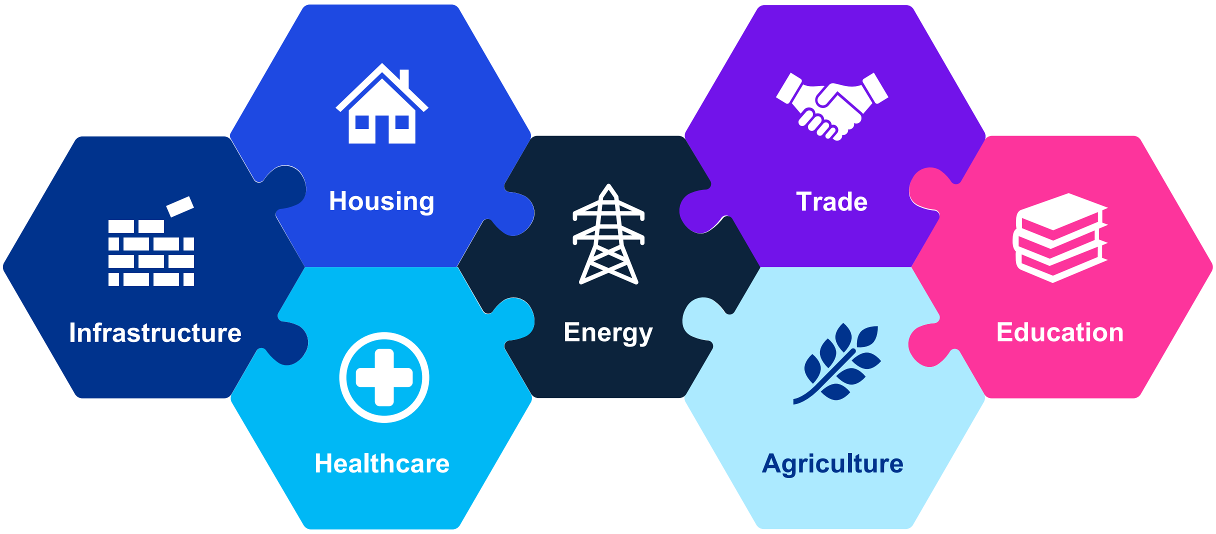
2. Assessment of damages and losses

- Assessment of damages and losses across the identified priority sectors.
- The losses take into consideration the changes in economic flows into the sectors owing to the war.

3. Estimation of damages, loses and qualitative impacts

- Each sector specified recovery needs are established which includes the cost of reconstruction of the destroyed assets.

Key sectors necessary to be included for damage assessment projects



Damage assessment approach adopted by Syria and Kosovo

Assessment approach in Syria

Remote-based assessment	
Six governances and five sectors assessed	
Three-phased assessment	

- **Selection of assessment area:** Damage assessment was carried out across six governorate capitals which were selected primarily based on population size.
- **Identification of priority sectors:** Five priority sectors included housing, health, education, transport, and energy.
- **Three phases of assessment:** Pre-war baselines were established in the first phase and in the subsequent phases, quantitative damage assessment was carried out.

Assessment approach in Kosovo

Assessment of 14 municipalities conducted	
Priority sectors identified	
On-ground data collection	

- **Finalization of assessment area:** Initially,14 municipalities were identified for assessment and later when other areas became accessible, 15 more municipalities were assessed.
- **Identification of strategic sectors:** Key strategic sectors were identified which included housing, healthcare and educational infrastructure, transport, water supply and rural electricity.
- **Categorization of damage level:** Based on the level of damages, educational and healthcare facilities were categorised into four groups.

Role of international organisations and other countries in rebuilding economies of war-torn countries

International organisations also play a key role in supporting war-torn countries through monetary, social, and humanitarian aid. As these aspects take a back-seat during the course of armed conflicts, their impact sets in during the later stages of the war, placing the country in a rather desperate situation.

The World Bank

The World Bank maintains a rather non-political stand and focuses on redeveloping the economy of a war-torn country by prioritising the financial operations of the country through steps such as investment project financing, development policy financing and Program-for-results financing.

European Bank for Reconstruction and Development (EBRD)

EBRD's Resilience and Livelihoods Framework provides assistance to the countries directly affected by war. It focuses on energy security, restoring municipal services and livelihoods for displaced persons, trade finance, and provision of liquidity for small and medium sized enterprises. The Bank has committed up to EUR3 billion over 2022-23 to help restore Ukraine's businesses and keep the economy functioning.

International Monetary Fund

The International Monetary Fund also operates in a similar fashion similar as the World Bank by providing loans to countries in need at concessional rates.

The organisation also aids in the stabilisation of inflation, growth of GDP and stabilise the falling local currency.

War-ravaged countries, in the past have also received aid from other developed countries which played a significant role in the recovery and reconstruction processes.

USAID

In accordance with its United States Foreign Aid program, the US provides aids to its ally countries in form of financial and humanitarian sources.

Of late, the middle east countries have been the largest recipient of financial aid by the US. Iraq received an aid of US$2.5 billion for humanitarian services in 2003 owing to the war it witnessed. This was followed by an aid of US$20.9 billion over a period of three and a half years for Iraq's reconstruction.

European Union (EU)

The European Union (EU) adopts an integrated approach to rebuilding a country affected by wars and crises. It is involved at all stages of a war, from prevention to crisis management and immensely contributes to sustainable peace.

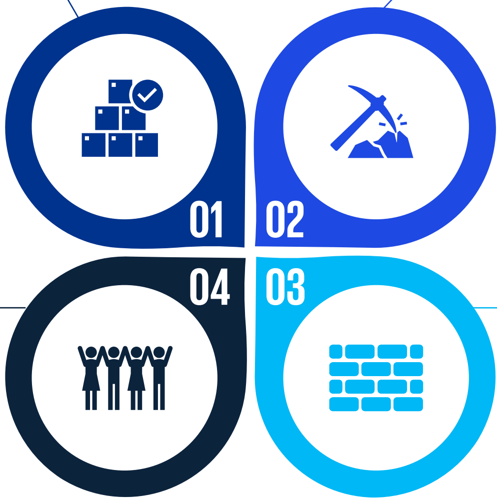
The EU works in close coordination with the member states and effectively combines war prevention, mediation, and peacebuilding.

The EU pledged $US166 million to Iraq since 2016. It is committed to supporting stabilization efforts, bolstering the anti-corruption agenda and strengthening local institutions.

Ukraine can derive insights from the recovery and reconstruction programs of similar war-torn countries

Although war-torn countries receive aid to overcome the consequences of a war, the journey to becoming a self-reliant nation is a multi-staged and time consuming process.

Croatia's Social and Economic Recovery Project (CSERP)



Community Investment

- The phase focused on funding goods, works and services for in-demand projects in the Croatian region

Demining

- Under the National Mine Action Plan, the stage focused on removing any land mines that had not detonated yet

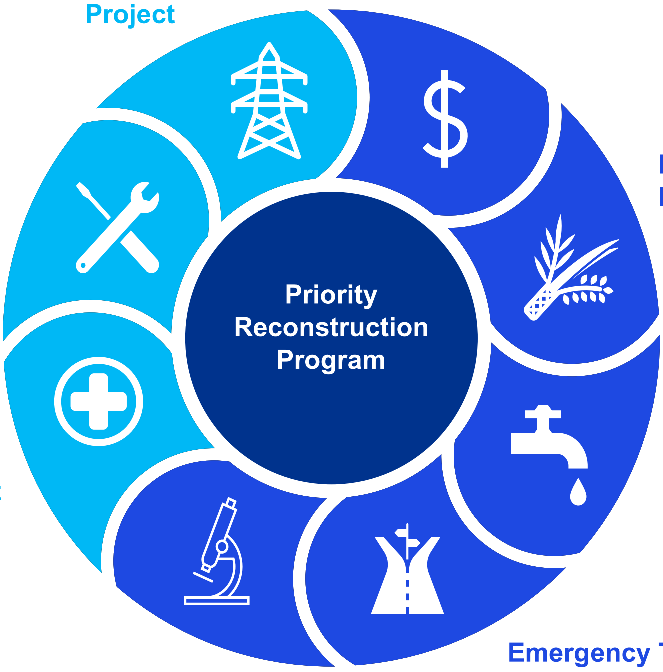
Institutional Development

- This stage focused on funding consulting services, equipment and capacity building for central, regional, and local authorities

Program Management

- This segment of the program focused on addressing social cohesion and economic revitalisation

Bosnia and Herzegovina's recovery program



- Emergency Electric Power Reconstruction Project
- Emergency Recovery Project
- Emergency Farm Reconstruction Project
- Water, Sanitation, and Solid Waste Urgent Works Project
- Emergency Transport Reconstruction Project
- Emergency Education Reconstruction Project
- Essential Hospital Services Project
- Emergency Housing Repair and Reconstruction Project

02

The Economic Impact of Wars: Insights from the past

2 The Economic Impact of Wars: Insights from the past

2.1 The Economic Cost of Wars - An Overview

The loss of life and economic instability easily count amongst the most disastrous consequences of any war or armed conflict in the world. The economic consequences of a war on a country depend on the nature of the war itself, especially its duration, intensity, and location. The characteristics that determine a country's vulnerability to a war include its average income level and the proportion of the population at or near poverty; the degree of self-subsistence of the population; the economy's reliance on essential imports; and the flexibility of the production system. History is replete with examples which clearly showcase both direct as well as indirect economic implications for the warring countries.

The economic cost of a war involves direct and indirect costs

Direct costs can be easily observed and calculated

- Military expenditure
- Damages to factories and machinery
- Damages to transportation modes
- Damages to farmland
- Damages to public infrastructure

Indirect costs cannot be easily observed and can only be estimated

- Emigration of educated and skilled labour force
- Damages to tourism industry
- Damages to production capacity
- Diminishing foreign investments
- Reduced trade

The economic cost of a war occupies a significant share of a country's GDP

Modern war is the expression of innate aggression to cause a large-scale economic and social damage. It is an attempt to resolve, by violence, disputes over political power, issues pertaining to territory and ethnicity, and societal stresses arising out of injustice and poverty. [1] The average economic cost of violence in the countries is equivalent to 41 percent of their gross domestic product (GDP).[2]

[1] "Root causes of violent conflict in developing countries", National Library of Medicine, Link

[2] "Economic value of peace 2021", Institute for Economics & Peace, January 2021. Link

Countries with the highest economic cost of violence (% of GDP), 2019

Syria	Afghanistan	South Sudan	Central African Republic	Somalia
59.1%	50.3%	46.3%	37.5%	35.3%
North Korea	Cyprus*	Iraq	Venezuela	Sudan
30.6%	30.6%	26.3%	24.1%	23.5%

Syria and Afghanistan rank as the least peaceful countries globally. This is evident from the economic cost of violence exceeding 50 percent as measured against their GDP.

Further, **the average economic cost of war in the ten most peaceful countries amounts to 3.9 percent of their GDP**[3].

Countries with the lowest economic cost of violence (% of GDP), 2019

Iceland	Canada	Austria	Denmark	Japan
2.8%	3.2%	3.4%	3.4%	3.4%
Switzerland	Czech Republic	Singapore	New Zealand	Portugal
3.5%	4.4%	4.9%	5.0%	5.1%

Iceland and Canada are among the most peaceful countries of the world with the economic cost of violence less than 3.5 percent of their GDP. Europe continues to remain the most peaceful region in the world and is home to seven of the ten most peaceful countries. The Balkans, which once used to evoke images of war and chaos are largely peaceful. This is evident from the countries' significantly lower economic cost of violence as a percentage of their GDP. **Slovenia and Croatia are among the most peaceful Balkan countries** with the economic cost of violence less than 4 percent of their GDP.

[3] "Economic value of peace 2021", Institute for Economics & Peace, January 2021. Link

Balkan countries and their economic cost of violence (% of GDP), 2019

Bosnia & Herzegovina	9.2%
Kosovo	8.5%
Serbia	8.5%
Montenegro	7.7%
Bulgaria	6.6%
North Macedonia	5.8%
Albania	5.7%
Romania	5.4%
Croatia	4.9%
Slovenia	4.3%

Key indicators of the economic disruption of a country due to war[4,5]

- **High rate of unemployment**
- **Rise in prices of raw materials (like oil)**
- **Reduction in agricultural or industrial export capacity**
- **Increase in the outflow of government cash to fund the war**
- **Imposition of more taxes by the government**
- **Rise in prices of goods and services**
- **Refugee outflow to foreign countries**

Bosnian War (1992—1995): The country's economy, by 1995 had shrunk considerably **(aggregate production was less than 20 percent of the pre-war** levels, and, based on rough estimates, over **50 percent of the population** was **unemployed** or living in poverty). By 1999, the GDP had only reached about 60 percent of the pre-war levels. By the end of the war, the **industrial output** had **decreased to** an estimated **5 percent of the 1990 levels**, with 45 percent of the industrial facilities destroyed. **The production of power and coal had decreased to 10 percent of the pre-war levels;** and the livestock herd had decreased to 30 percent of the pre-war levels. A total of 2.3 million people had fled their homes and more than 600,000 of these came from the Bosnia and Herzegovina.

[4] "Unemployment, youth total (% of total labor force ages 15-24)", World Bank. Link

[5] "Bosnia and Herzegovina: Post-conflict reconstruction and the transition to a market economy", World Bank, 2004. Link

Kosovo War (1998—1999): The most thorough examination of the military, economic, and human costs of the battle to date estimates that the Kosovo war cost more than **EUR30 billion**. For short-term agricultural loans, Kosovo bankers charged **interest rates as high as 18 percent,** compared to 5 percent in Serbia and 7 percent in Albania even after several years post the war. An associated cost of US$460 million was calculated by the IMF owing to the refugee crisis that the region went through. Kosovo also went through a price hike in food as the country struggled to regain control over its economy after independence.

Syrian War (2011 – Present): In March 2011, the pro-democracy citizens of Syria initiated a protest in the country against the government led by the then President Bashar al-Assad. The government employed violent measures to suppress the uprising, which led to formation of opposition militia. In a span of one year, the situation had escalated from a protest to a civil war. A total of **13 million Syrians** were forcibly displaced from their homes with approximately 6.8 million seeking asylum status in neighbouring countries. The refugees were spread across middle eastern countries such as Turkey, Lebanon, Jordan, Iraq and Egypt. Data from Jordan reveals that each refugee cost the country **US$3750 per year**. By 2013, **the country had already spent US$800 million by hosting 500,000 refugees** since the beginning of the Syrian war.

These examples clearly underline that a war evokes a series of chain reactions that destroys a country's economy, and its impact can be felt even decades after the restoration of peace[6,7].

2.2 War and sanctions fan the flames of inflation

War results in higher prices in a country primarily due to three reasons.

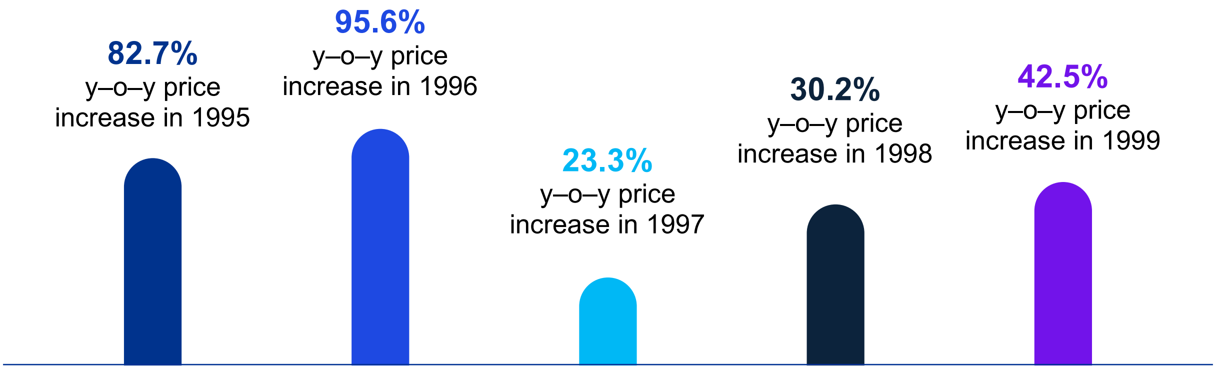
- Military needs supersede civilian demands which strains an economy's productive capacity, especially when the capacity has been ravaged
- War tears apart trade, hits logistics and supply chain and drives prices of goods and commodities
- Governments often finance war either by keeping interest rates too low or printing more money. With the availability of too much currency, prices of goods and services skyrocket

[6] "Bill for Kosovo war goes over £30bn", The Guardian, October 1999. Link

[7] "Kosovo's Economy Still Struggling Five Years After Independence", Radio Free Europe Radio Liberty, February 2013. Link

Countries have witnessed the wrath of war and sanctions-induced inflation

Serbia went through a tough spell of inflation during and post the Bosnian War that lasted from 1992 to 1995[8].

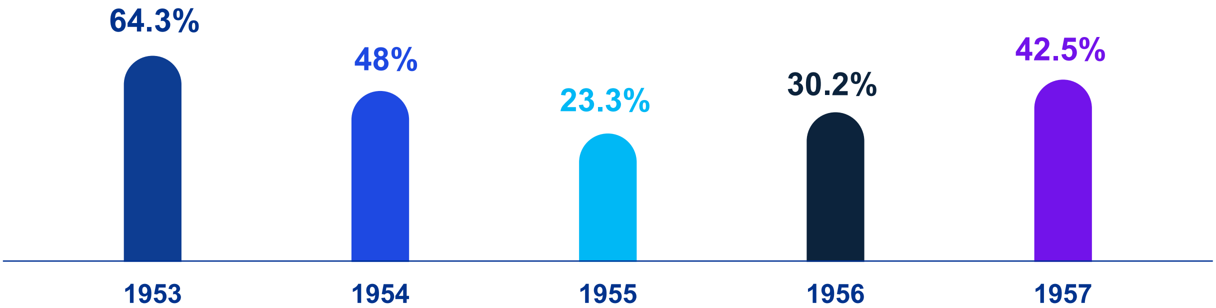


Bosnian war (1992–1995)
resulted in a dramatic increase in the year-on-year price in Serbia

A period of calm
which hardly lasted a year in 1997 brought down the inflation drastically

Kosovo Conflict
led to another increasing trend in the inflation rate

South Korea faced one of the toughest periods of war-induced inflation as an outcome of the Korean war (1950-53) [9] . A high inflation rate was witnessed in 1953 after the ceasefire was announced. A downward trend was observed soon after only to witness an increase in 1956 after the signing of the final treaty.



The United Nations' (UN) sanctions against Iraq following the latter's invasion of Kuwait in 1990 crippled the Iraqi economy. In early January 1996, the Iraqi government stopped printing money to try to contain runaway inflation and a falling dinar. The dollar was trading at about 2,900 dinars and the food prices skyrocketed by 4,000 to 5,000 times since the imposition of the sanctions. [10]

[8] "Development of inflation rates in Serbia", World Data.info. Link
[9] "Historic inflation South Korea - CPI inflation", Inflation.eu, January 2021. Link
[10] "Due to Inflation, Iraq to Stop Printing Money", Los Angeles Times, Link

14% Yemen's unemployment rate after the inception of Yemeni civil war	**US$15- US$42** Oil price surge in 1990 after Iraq-Kuwait war	**50%** Decrease in industrial production in 1991 in Yugoslavia due to civil war
US$975 billion Money spent by the US in the Afghanistan war	**15%** Highest GDP in tax revenue after the Burundian war	**40.7%** Food price spike in Ethiopia due to the Tigray war

2.3 Debt and war have been the closest partners

Just as a natural calamity leaves debris and destruction in its aftermath, war leaves behind debt in its wake. Since war entails a huge budget, there are times when a government does not have enough money to sustain it. In such a scenario, they end up borrowing from another country to finance it, leading to debts.

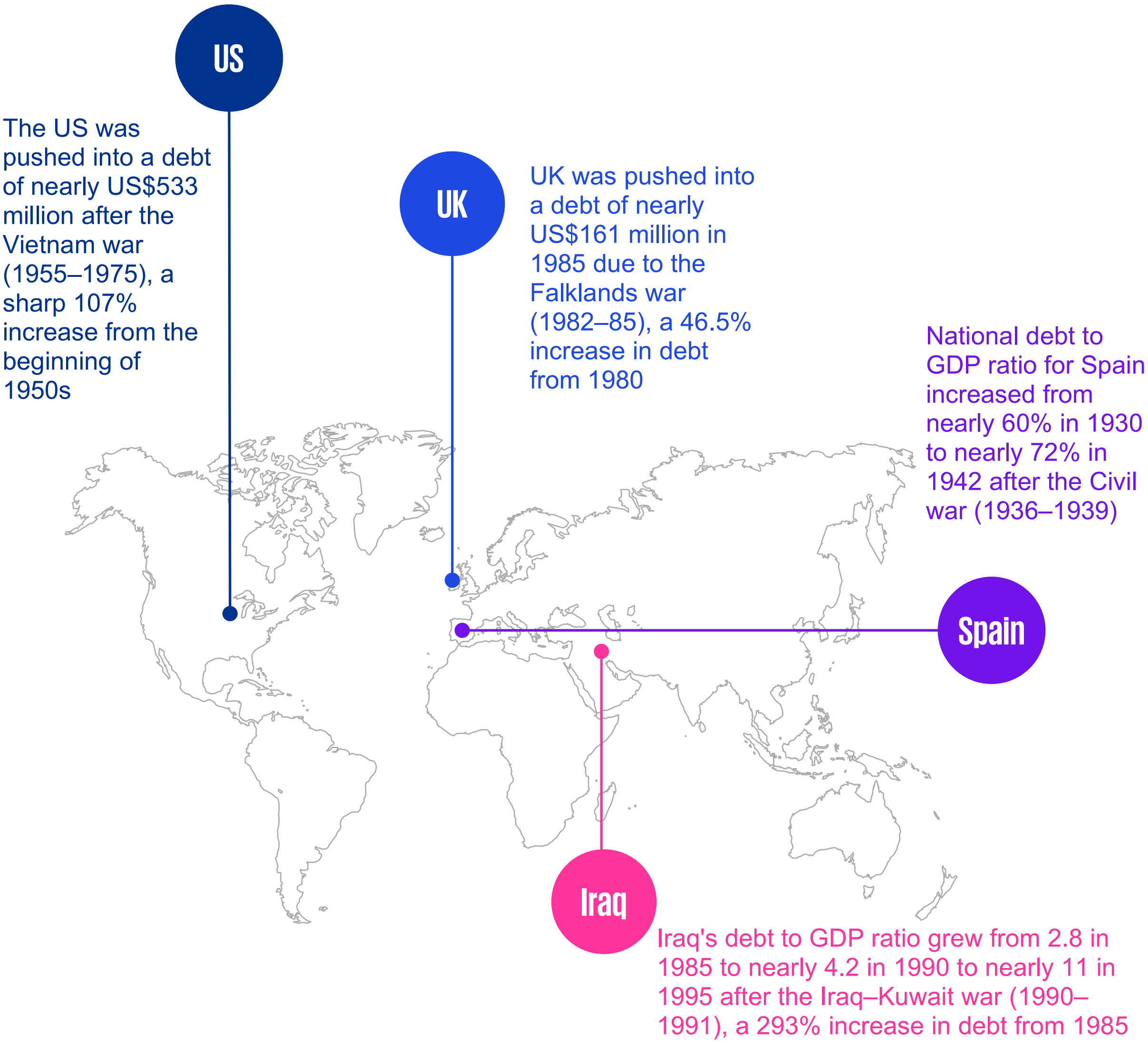
Other methods of financing wars internally do exist such as increase in taxation and borrowing through issue of war bonds. However, these methods exhibit more negative consequences compared to borrowing. Increase in taxation would present citizens with reduced purchasing power and ability to invest, thus raising a rather anti-war sentiment in the nation. Borrowing on the other hand through the issue of war bonds, although effective, requires a rather larger time frame for the government to gather the funds through the purchase of these bonds.

An increase in the influx of cash into the financial system of the country by printing more money would help finance the war in the short run. However, it is strongly likely that the country would soon plunge into a state of inflation. This would prove to be a catastrophe for a newly developing economy.

Owing to such constrains, borrowing from other countries has been the one of the much sought after methods for countries engaging in war.

Countries have been plagued by war-induced debt in the past[11,12,13,14,15]

Figure 1: Debts on account of the wars fought by the US, UK, Spain, and Iraq



Wars not only affect the involved countries, but also have a global outreach in terms of inflation, debt, high unemployment and missed opportunities that could have been used to boost the economy.

In the most recent times, the Russian invasion of Ukraine has a wider impact on the countries across the globe. It has sparked a global chain reaction of events where we are now witnessing a global economic stagflation with spike in commodity prices and unemployment.

11 "Vietnam to Repay U.S. for Loans to South", Los Angeles Times, April 1997. Link

12 "Default, Rescheduling and Inflation: Public debt crises in Spain during the 19th and 20th centuries", Core, May 2012. Link

13 "Tracing Iraqi Sovereign Debt Through Defaults and Restructuring", London School of Economics and political science, December 2019. Link

14 "300 years of national debt", Gather, May 2017. Link

15 "National Debt: 1950s–1960s", Sutori.com. Link

03

Russia's invasion of Ukraine put the global economy at a spot of stagflation

3 Russia's invasion of Ukraine put the global economy at a spot of stagflation

On **24 February 2022**, Russia invaded Ukraine in a major escalation of the Russo-Ukrainian War that began in 2014. The invasion caused **Europe's largest refugee crisis since the World War II,** with currently over **7.9 million Ukrainians**[16] **seeking refuge** and one-third of the country's population being displaced. The crisis put wider implications for the global trade and development as both the countries had a strategic importance in terms of supplies of food, energy, and certain industrial inputs. The global economy is expected to slow further in 2023 as the massive and historic energy crisis continues to put inflationary pressures, decrease household purchasing power and increase risks worldwide. The global economy is projected to grow well below the outcomes expected before the war – slowing to 2.2 percent in 2023 and recovering moderately to a still sub-par 2.7 percent in 2024.[17]

3.1 Disruption of the global supply chains and trade of commodities[18, 19, 20, 21, 22, 23, 24]

The Russia-Ukraine war impacted more than 600,000 businesses across the globe as both the countries were not only the leading suppliers of oil, gas, wheat, corn, sunflower seed, fertilizers, semi-finished iron products, but also critical components such as neon gas for chips manufacturers[25] and other staples[26].

What led to the supply chain disruptions?	What was the impact?	Countries majorly impacted
• Disruption of key transport Russian and Ukrainian routes connecting Asian and European markets • Restrictions on air space • Blockades and occupation of Ukraine's Black Sea ports leading to fewer routes for Ukraine's commodity exports, especially food • Diversion of cargo ships from Ukrainian ports to other destinations such as Constanţa, Romania, Tripoli, Lebanese Republic, Piraeus, and Greece due to increased risk • Unavailability of shipping crew to board and disembark • Lesser availability of merchant ships due to spiralling insurance costs	• Reduced supply of inputs to the car manufacturers, especially electric wiring. The light vehicle sales forecasts in Europe were cut by 2 million units per annum over the next two years	• Germany, Poland, Czech Republic, Hungary, Romania
	• Fewer grain shipments over longer distances leading to food shortages and price hikes	• Mauritania, Lebanese Republic, Congo, Somalia, Tanzania, Turkey, Egypt, Madagascar
	• Cessation of iron and steel shipments leading to upward pressure on prices	• UK, European Union, Belarus, Kazakhstan, Kyrgyzstan
	• The choking of fertiliser supplies to some of the world's major agricultural producers	• Brazil, Peru, Ecuador, Suriname, Honduras, Costa Rica

16 "Refugees from Ukraine recorded across Europe", UNCHR, Link
17 "Russia's war of aggression against Ukraine continues to create serious headwinds for global economy, OECD says", OECD, Link
18 "European market outlook worsens, LMC Auto Blog, Link
19 "War in Ukraine adds to food price hikes, hunger in Africa", AP News, Link
20 "Ukraine war squeezes food supplies, drives up prices, threatens vulnerable nations", United Nations News, Link
21 "Ukraine war is upending central Europe's post-COVID car revival", Automotive News Europe, Link
22 "Impact of Ukraine-Russia War on European Steel Market", Beroeinc, Link
23 "Ukraine War Hits Farmers as Russia Cuts Fertilizer Supplies, Hurting Brazil", The Wall Street Journal, Link
24 "How the War between Russia and Ukraine Might Affect Your Dinner in Latin America and the Caribbean", Inter-American Development Bank, Link
25 " Exclusive: Russia's attack on Ukraine halts half of world's neon output for chips", Reuters, Link
26 "The Ukraine-Russia War's Impact On The Supply Chain: Why MRO Optimization Is A Top Priority", Forbes, May 2022. Link

3.2 Disruption in the production capacities[27,28,29,30,31,32,33,34, 35]

Leading manufacturers either paused or closed operations amid the hostile situation and infrastructure losses

Auto

- Prominent automakers such as Volkswagen, Audi, Toyota, Daimler, Volvo, and Ford suspended their production operations and businesses in Russia.
- The manufacturers of wire harnesses and other auto parts such as Sumitomo moved their production to Romania. Leoni, a company operating in the similar industry temporarily shut down its operations in Ukraine. It has, however resumed operations recently.

Food and Beverages

- McDonald’s, Starbucks, PepsiCo and Coca-Cola either closed their locations or stopped selling products in Russia.
- The consumer goods companies such as AB InBev transferred its operations to Romania while the profits were being transferred to Ukraine, while Coca Cola resumed their beverage production in Ukraine in May.

Chemicals and Pharmaceuticals

- Major chemical industry players such as BASF, LyondellBasell, Clariant and Solvay halted operations and refrained from making further investments in Russia.
- Companies such as Biosphere partially relocated its operations to other western European countries and planned on duplicating production abroad to work in foreign markets.

Agriculture

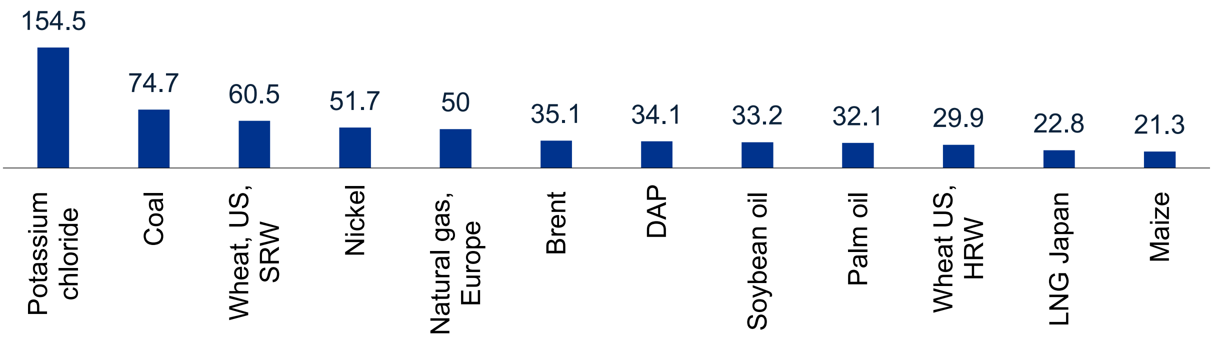
- Several global farm-machinery companies such as John Deere, Lely, and Caterpillar Inc. have closed their operations in Russia.
- Companies such as Archer Daniels Midland, Bunge, CHS Inc., the giants in crop processing and trading, shipping and retail either stopped operating its facilities or suspended operations.

3.3 Higher commodity prices drove global inflation

Russia's invasion of Ukraine delivered the biggest shock to the commodity markets in nearly 50 years, with a disruption in the production and trade of several commodities including energy, fertilizers, and food grains. With an increase of 154.5 percent, fertilizers witnessed the highest price increase amongst all the commodities within the three-month period between January-March 2022.

[27] “These are all the automakers that have pulled out Russian operations”, Techcrunch, Link
[28] “Ukraine invasion hampers wire harness supplies for carmakers”, Reuters, Link
[29] “Companies shut Ukraine plants in face of Russian invasion, putting supplies of goods from beer to cars to candy bars at risk”, Fortune, Link
[30] “Bottler Coca-Cola HBC shuts Ukraine plant”, Reuters, Link
[31] “Food Companies, Long Symbols of the West in Russia, Pause Operations”, The New York Times, Link
[32] “Major Chemical Makers Halt Investments in Russia”, Powder & Bulk Solids, Link
[33] “Ukrainian Entrepreneurs Struggle To Save Their Employees As War Threatens To Crush Their Businesses”, Forbes, Link
[34] “Agriculture Giants Shut Ukraine Operations”, The Wall Street Journal”, Link
[35] “Farm-machinery companies pull out of Russia”, Agri-View, Links

Figure 2: Commodity price changes in countries where Russia and Ukraine were the key exporters (%), January-March 2022[36]



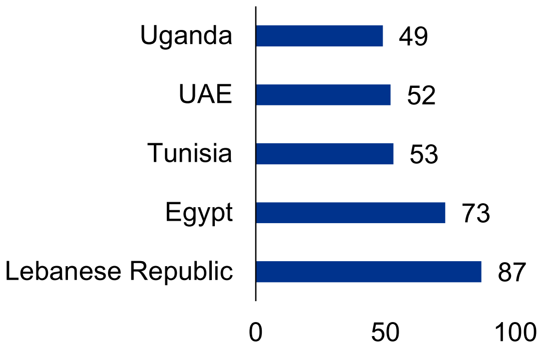
Note: LNG stands for liquefied natural gas

3.4 Global impact of the war on key sectors

3.4.1 Food[37]

In relation to food, there were production and export challenges, associated with **reduced raw material availability and price rises** (food import bills are at record levels). Moreover, lower-income countries were significantly impacted with rising prices as they were heavily dependent on the wheat from Russia and Ukraine prior to the war.

Figure 3: Combined share of Ukrainian and Russian imports of wheat in the total imports of wheat by the top 5 countries (%), 2019



- Africa and the middle east bore the brunt with imports of over 50 percent of their cereal needs coming from Ukraine and/or Russia.
- Higher prices of wheat, sunflower, corn due to shortages.
- Mounting pressure on the dependant countries to find other alternative sources of supplies.
- The prices of substitute food products were expected to increase even if not exported by Russia and Ukraine, to fill the gap of the regular cereal imports.
- Risk of social unrest, in low food security nations (for instance, Lebanese Republic).
- Scenarios of undernutrition were anticipated in some of the dependant countries (for instance, Sub-Saharan Africa).

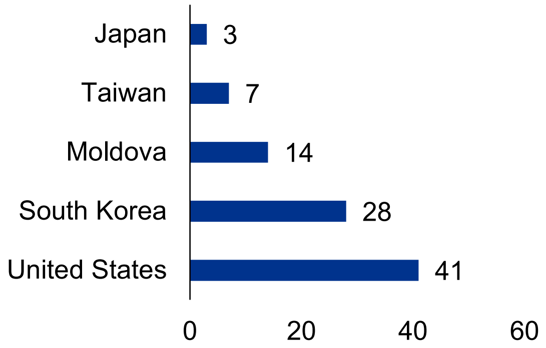
[36] "Commodity prices surge due to the war in Ukraine", World Bank Blogs, Link

[37] "The Crisis in Ukraine: Implications of the war for global trade and development", World Trade Organization, Link

3.4.2 Semiconductor

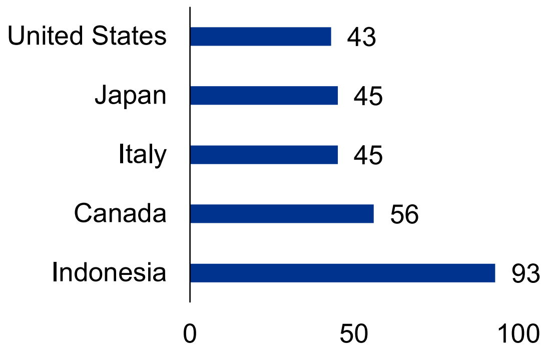
Prior to the war, Russia and Ukraine were the major producers of neon and palladium used in semiconductor manufacturing. Ukraine supplied about **70 percent of the global neon gas**[38] while **Russia** catered to about **25-30 percent of the world's palladium supply**[39]**.**

Figure 4: Share of Ukrainian exports of neon in the top 5 countries (%), 2021



- The global palladium prices soared by about 80 percent in March 2022 – an all-time high due to the financial sanctions on Russia.
- The shortage in the supply of palladium vastly impacted the global automotive industry with leading automakers such as Mercedes, BMW and Volkswagen suspending production.

Figure 5: Share of Russian imports in the total imports of palladium by the top 5 countries (%), 2019

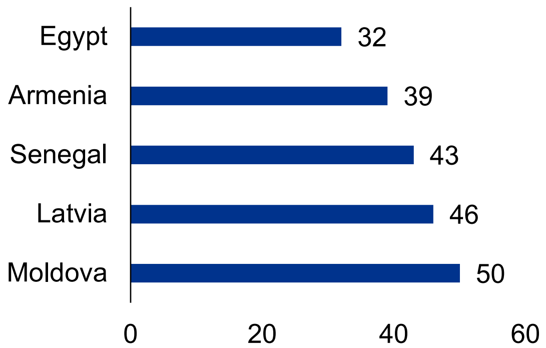


- Ingas and Cryoin, Ukraine's top neon producing companies halted production.
- The suspension created a doubt over the worldwide output of chips, already in short supply after the COVID-19 pandemic. The shortage impacted the manufacturing of electronics, cars, computers, phones, new airplanes.

3.4.3 Metallurgy and mining[40, 41]

Russia accounted for 4.6 percent of the global iron and steel exports while Ukraine was responsible for 2.2 percent of the steel shipments globally, prior to the war.

Figure 6: Share of Russian imports in the total imports of steel by the top 5 countries (%), 2019



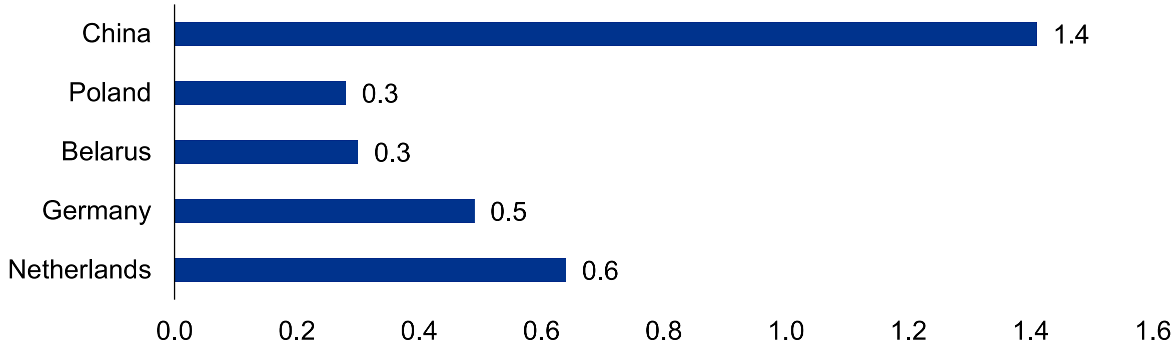
- Russia and Ukraine accounted for 20 percent of the EU imports of finished steel products. The war disrupted the supplies and forced customers to source products from elsewhere.
- The global prices of steel skyrocketed amid high demand and supply chain issues, along with imposed sanctions against Russia.

[38] "Russia's Invasion of Ukraine Impacts Gas Markets Critical to Chip Production", Centre for Strategic and International Studies", Link
[39] "Russia's Invasion of Ukraine Impacts Gas Markets Critical to Chip Production", Centre for Strategic and International Studies", Link
[40] "The Crisis in Ukraine: Implications of the war for global trade and development", World Trade Organization, Link
[41] "Europe battles to secure steel following Russia's invasion of Ukraine", Financial Times, Link

3.4.4 Fuel [42,43,44,45,46,47]

Russia was a significant supplier of crude oil to many countries in the EU. But due to barring of Russian crude oil by European refiners post Russian invasion of Ukraine, the Russian crude oil import dropped by 554,000 barrels per day(bpd) from 2.0 million bpd in March to 1.5 million bpd in May.

Figure 7: Volume of Russian crude oil imports in the EU countries and China (in million barrels daily), 2021



- Countries such as Belarus, Cuba, Curacao, and Latvia, were importing 99 percent of their crude oil from Russia in 2019.
- Ban on Russian oil imports created fuel price hike and challenge of meeting fuel demand, especially in these countries.
- With deep discounts following the war, India and China emerged as the biggest buyers of Russian crude oil. China's crude oil imports from Russia rose 55 percent from a year earlier to a record level of 8.42 million tonnes in May 2022, displacing Saudi Arabia from the top of the list of suppliers.
- India's net crude oil import from Russia increased over 50 times in June since April. The Russian crude oil, which accounted for a meagre 0.2 percent of all the oil imports by India increased to 10 percent in April.

[42] "Export volume of crude oil from Russia in 2021 by major countries of destination", Statista, Link
[43] "Rystad: Russian crude oil diverted from Europe to India & China as war rebalances trade flow", Offshore Energy, Link
[44] How much of your country's oil come from Russia", Aljazeera, Link
[45] "China May oil imports from Russia soar to a record, surpass top supplier Saudi", Reuters, Link
[46] "Data" In 2021-22 USA at 4th and Russia at 9th in India's crude oil import", Factly, Link
[47] "India's Russian oil imports jump over 50 times since April: Official", Business Standard, Link

04

Impact of the War on Ukraine – damage assessment in different spheres

4 Impact of the War on Ukraine – damage assessment in different spheres

4.1 The production capabilities took a big hit

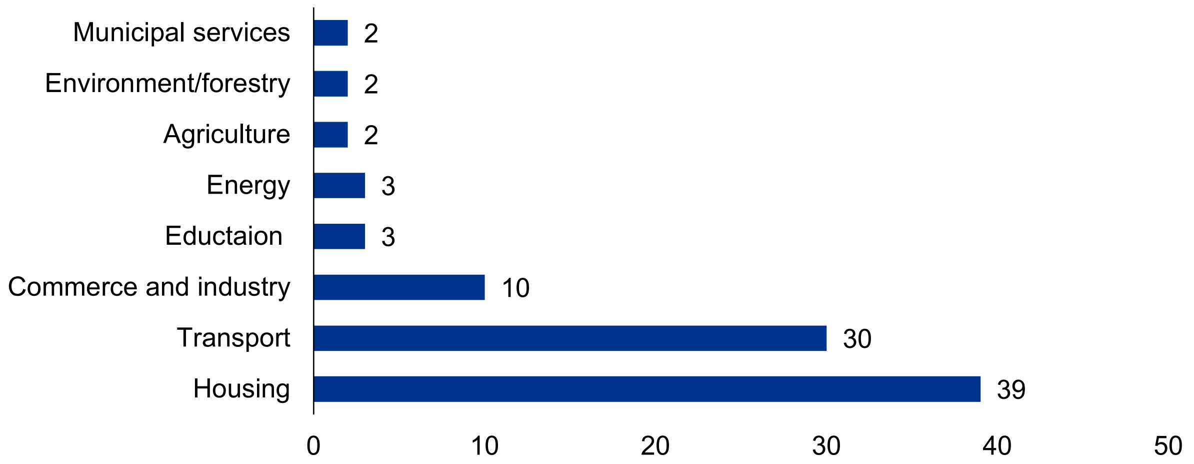
The impact of Russia's invasion of Ukraine has been beyond just the human suffering. About 53 percent of the country's GDP used to be generated by the war affected regions (including the capital of Kyiv). One-third of the country's industrial and agricultural production and about a quarter of the total exports came from what are now war zones. According to the International Monetary Fund (IMF), Ukraine's economy will slowdown by 34.5 percent in the first quarter of 2023. The economic recovery will commence with a 6 percent growth in the second quarter; and 11.9 percent and 21 percent in the third and fourth quarters respectively.[48]

4.1.1 The war has reached deep into the fertile plains of the country[49]

The agriculture sector of Ukraine is of strategic importance to the country's economy since it provides livelihoods to approximately 13 million Ukrainians residing in the rural areas. [50] Prior to the conflict in February 2022, the sector accounted for **11 percent of the country's GDP, 20 percent of its labour force,** and nearly **40 percent of the total exports**[51].

As of June 1, 2022, Ukraine already witnessed direct damages worth over US$97 billion. Housing, transport, and commerce and industry were found to be the most affected sectors. The Government of Ukraine, the World Bank Group, and the European Commission in cooperation with development partners, launched a Rapid Damage and Needs Assessment (RDNA) which reported total losses amounting to US$252 billion. The damages and losses caused in Ukraine due to war is estimated to cost around US$349 billion for reconstruction and recovery, which is more than 1.6 times the GDP of Ukraine in 2021.

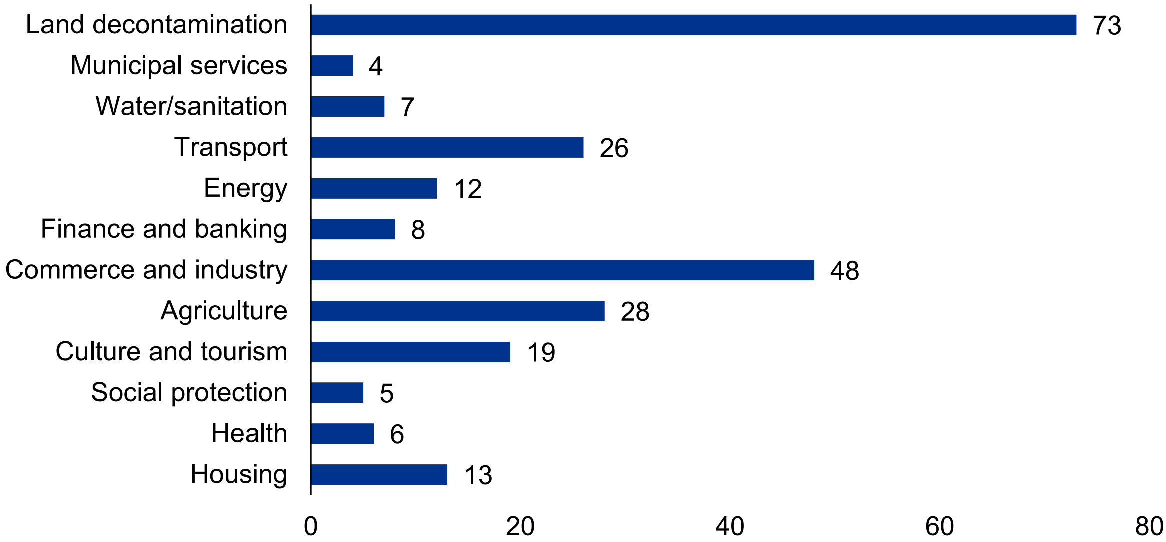
Figure 8: Estimated damages in Ukraine by sectors (US$ billion), as of June 1, 2022



Note: The World Bank's Rapid Damage and Needs Assessment (RDNA) team has defined damages as direct cost of destroyed or damaged physical assets.

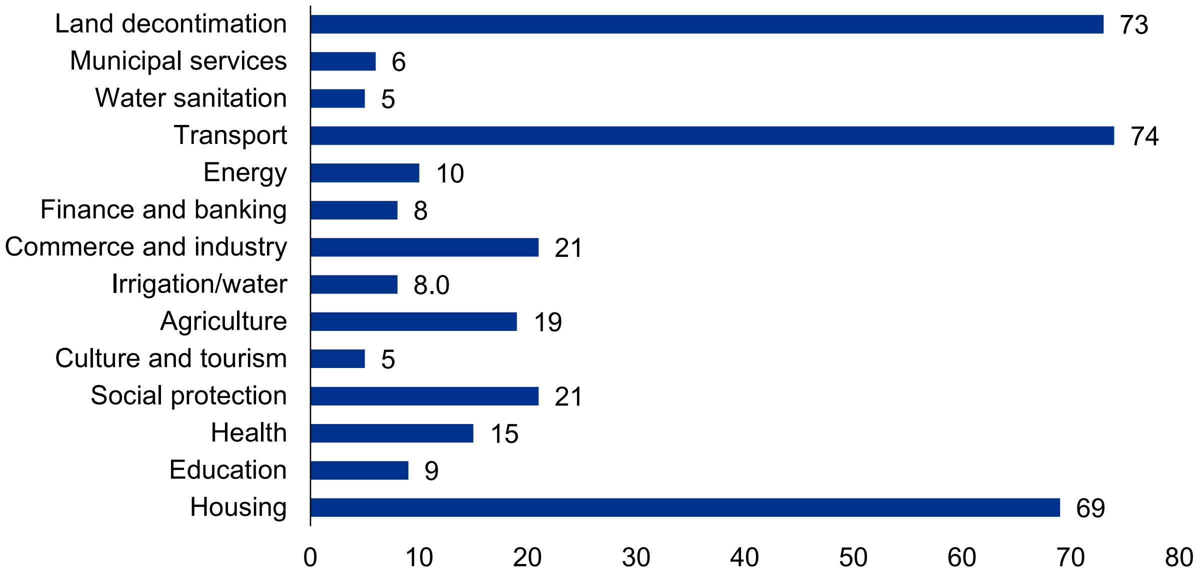
[48] "The IMF expects a fall in Ukraine's GDP in the fourth quarter of 2022 by 40.5% y/y", GMK Center, Link
[49] "Ukraine Rapid Damage and Needs Assessment, August 2022", World Bank, Link
[50] "Agriculture Fact Sheet", USAID, Link
[51] "Agriculture Fact Sheet", USAID, Link

Figure 9: Estimated losses in Ukraine by sectors (US$ billion), as of June 1, 2022



Note: According to RDNA definition, losses are changes in economic flows resulting from the war. It is valued in monetary terms.

Figure 10: Estimated needs in Ukraine by sectors (US$ billion), as of June 1, 2022



Note: Needs are defined as value associated for resumption of pre-war normality through activities such as repair and restoration, improved energy efficiency, modernisation of efforts, and sustainability standards.

4.1.2 The damages impacted various other aspects of the agriculture sector [52,53, 54, 55, 56, 57]

Rise in prices of raw materials	• Prices of seeds, plant protection agents, fertilizers and fuel increased by 35-45 percent on an average as of April 2022 since the pre-war levels. • Agricultural production in Ukraine in terms of both winter and spring crops were expected to decline by 25-50 percent by the end of 2022 as compared with in 2021.
Loss of farmers' livelihoods	• Farmers witnessed the loss of nursery transplants, poor water supply in areas with no power. • In comparison to 2021, Ukrainian farmers planted 30 percent fewer spring crop with reduction in corn and sunflower crop yield volumes by 54 and 40 percent, respectively. This caused significant reduction in profits leading to farmers' migration from the country.
Lack of financial resources for the new crop season	• Ukrainian farmers lost financial resources to invest in the new season and replace damaged farming equipment.
Loss of livestock	• The value of dead farm animals was approximately US$136 million as of June 2022. • The war led to the killing of over **42,000 sheeps** and **goats, 92,000 cattle, 258,000 pigs** and over **5.7 million poultry** animals • These animals were killed majorly due to direct hostilities as well as limited opportunities for farmers to purchase feed and provide veterinary care.
Destruction of agricultural lands	• As of April 2022, only 210 sq.km had been cultivated out of a projected 7,000 sq.km in Chernihiv oblast, compared to 10,000 sq.km in 2021. • As of June 2022, Ukraine lost approximately 25 percent of its arable land due to the war.
Damage to crop storage facility	• As of August 2022, Russia's military has either destroyed or taken control of around 16 percent of Ukraine's total grain storage facilities. • Ukraine's grain storage capacity fell to 49.8 million metric tons, down from a pre-war capacity of 58 million metric tons.

[52] "News Alert: Conflict Demolishes Ukraine's Agricultural Infrastructure Ahead of Critical Summer Harvest Season", Reliefweb, Link
[53] "How can Ukraine export its harvest to the world?", BBC News, Link
[54] "Ukraine war damages assessment reveals impact on agriculture", Milling and Grain, Link
[55] "Putin's destruction of Ukrainian farms", Share America, Link
[56] "Russia Invasion Impacting Ukraine's Crop Storage Capacity, While Black Sea Export Deal in Focus", Illinois, Link
[57] "Ukraine loses 25% of arable land due to Russian invasion", The Brussels Times, Link

4.1.3 Escalating hostilities are causing employment losses soar to millions[58, 59]

The crisis in Ukraine has resulted in a widespread cut down of jobs in the region and a massive displacement of the working population. This caused large-scale losses in terms of employment and incomes.

The International Labour Organisation (ILO) carried out detailed estimates of the adverse effects of the war on the Ukraine's employment scenario. An estimated 4.8 million jobs were lost in the country as of May since Russia's full-scale invasion in February 2022.

Job losses in Ukraine

- The cumulative job losses accounted for approximately 30 percent of Ukraine's workforce before the invasion
- It was estimated that the job losses would rise to 7 million if the war continues. However, in the event of a ceasefire, 3.4 million jobs would resume rapidly

Displacement of the working population

- More than 5.23 million refugees fled to the neighbouring countries since the beginning of the war
- Approximately 2.75 million of the total refugee population were of the working age
- Of these, 43.5 percent, or 1.2 million, were previously working and have either lost or left their jobs
- More than 87 percent of the erstwhile employed refugees had full-time jobs with more than 88 percent earlier working for enterprises and 12 percent being self-employed

4.1.4 The country's investment outlook hits the pause button

As foreign companies with operations in Ukraine are considering the implications of the military action and associated sanctions, the war has cast darker shadows on the economic and investment outlook of the country.

There is a significant security risk for staff working at multinationals in Ukraine, as the staff on the ground may need to be evacuated from Ukraine, resulting in operational disruptions.

[58] "Nearly 5 million jobs lost in Ukraine as war pummels economy – ILO", Reuters, Link
[59] "Ukraine has lost 30% of employment, 4.8 million jobs: ILO", HR Katha, Link

Businesses are facing significant risks across various sectors[60] [61] [62]

Information Technology	• Ukraine recently benefited from an influx of foreign software companies, with a record number of greenfield investments into its technology sector during 2021. Foreign tech companies are unlikely to exit Ukraine due to the talent in the market. • The tech companies are also apprehensive about blackouts and independent internet after Russian invasion.
Food and beverages industry	• French food giant, Danone closed one of its two factories in Ukraine and temporarily stopped production in the other. Russian members attempted to restart the operations of the plant in the region under their control. The company has moved its operations partially to its other plant in Poltava. • BASF also closed all its sites in Ukraine, which concern agriculture, nutrition, health and care, catalysts, coatings, dispersions, and pigments. • Nestlé had temporarily closed its operations in Ukraine. The company had 3 factories in Ukraine, dealing in culinary food, coffee, confectionery, and employed 5,800 employees. It has resumed operations in regions that are now safe, one of them being Lyiv.
Ports and grain facilities	• US-based Archer Daniels Midland (ADM), a global ingredients company which operated an oilseed crushing plant and grain terminal in the port of Odessa in Ukraine shut down 2 of its operating plants. • Cargill, which owned a majority stake in a deep-sea port near Odessa with more than 500 employees working in grain and oilseed processing plants in Ukraine, closed its facilities. • US-based Bunge, a leading agribusiness entity with over 1,000 workers in Ukraine, closed company offices and suspended operations at its processing facilities in two cities of Ukraine.
Steel plants	• Steelmaker Metinvest halted its production facilities at its Ilyich and Azovstal plants in Mariupol after the assets of the company were destroyed in the war. The company is expected to restart operations after Ukraine regains control of the area. • The Ilyich iron and steel works of Mariupol (MMKI) suspended operations at its sinter plant, blast furnace, 1,700 HSM and 3,000 plate mills, and the cold rolling mill. The company also halted operations at its coking coal mines and coke plants.

Although the war has drastically affected both the existing and possible foreign direct investments (FDI) in Ukraine and also shook the global FDI market, wiping US$500 billion[63] of the market, experts suggest the nation to be a ripe opportunity for investments in the current time period owing to the presence of abundant natural resources and large skilled workforce pool.

Factors such as high agricultural output, presence of high amounts of natural resources such as Lithium and Cobalt and availability of skilled IT workforce pose the nation to be a robust centre for trade. The country also has free trade agreements with 47 countries including the EU thus making it a

[60] "Companies shut Ukraine plants in face of Russian invasion, putting supplies of goods from beer to cars to candy bars at risk", Fortune, Link

[61] "Ukraine: Multinational corporations halt operations & move employees to safety amidst Russian military invasion", Business & Human Rights Resource Centre, Link

[62] "Ukraine war jeopardises $500bn in foreign investment", FDI Intelligence, Link

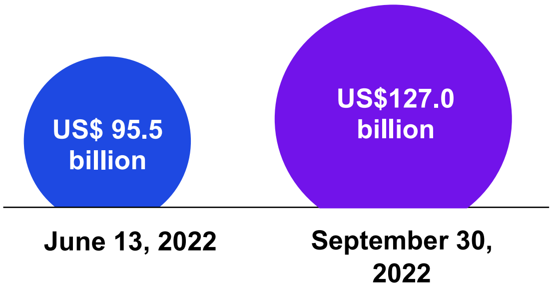
[63] "Ukraine war jeopardises $500bn in foreign investment", FDI Intelligence, Link

crucial component of the global supply chain and has an investor friendly government making it easier for foreign companies to establish business[64].

4.2 Damages to the country's infrastructure have been enormous[65]

The Ukrainian economy has received a major jolt from the damage and destruction of residential and non-residential buildings and infrastructure.

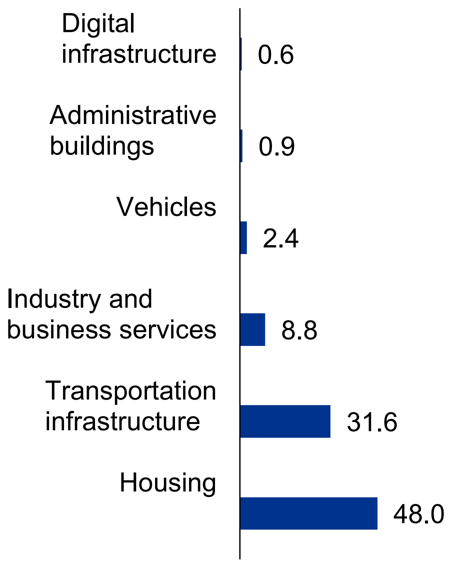
Damages to the Ukrainian economy from damage and destruction of residential and non-residential buildings and infrastructure (in monetary terms)



There was an increase of **US$12.8 billion** worth of damages to the economy as of 1 August 2022 since the previous estimate as of **13 June 2022**.

*The estimation of the damages has been jointly carried out by Kyiv School of Economics, government authorities under the leadership of the Ministry of Reintegration of Temporarily Occupied Territories, and the Ministry for Communities and Territories Development in cooperation with other ministries and partner organizations under the guidance of The National Council for the Recovery of Ukraine from the Consequences of the War.

Figure 11: Estimated damages to Ukraine's physical infrastructure by type as of 1 August 2022 (US$ billion)



- Housing had the maximum share in the total volume of damaged and destroyed infrastructure.
- Approximately **129,900** residential buildings were destroyed and damaged, of which **114,700** were private houses and **15,100** were apartment buildings.
- The cost associated with recovering damaged assets was estimated to be at least **US$185 billion**.
- In terms of transportation infrastructure, roads and civilian airports were impacted the most.
  - Damages to roads and civilian airports were estimated at **US$25.4 billion** and **US$2.0 billion** respectively.
- Also, approximately 24,000 kilometres stretch of roads were estimated to have been damaged by the Russian forces.

Apart from buildings, Ukraine's economic situation has also been affected by the destruction of roads, hospitals, and other essential physical assets. An estimated **US$60 billion to US$100 billion worth of critical infrastructure was damaged within the first month of the war**.

[64] "Investing in Ukraine? Now is the ideal time", Investment Monitor, Link

[65] "The total amount of documented damages has reached $108.3 billion, minimum recovery needs for destroyed assets — $185 billion", Kyiv School of Economics, Link

05

How other countries assessed their damages?

5 How other countries assessed their damages?

5.1 Damage assessments done post-war

The post-war environment in a country is complex and demanding as the most immediate task is to swiftly assess the humanitarian needs and provide life-saving relief assistance to the affected at the earliest. The country further requires a detailed assessment of the damages and destruction caused by the war and strategize a comprehensive recovery plan that would potentially lead the country back on a track of sustainable development. Being a mammoth task for any country, this requires support of several national and international organisations such as the World Bank Group, the European Union, United Nations Development Group, and International Monetary Fund.

The assessments may range from the rapid assessment of immediate needs to the most elaborate assessment of long-term recovery and risk reduction requirements. An assessment is always backed by a discrete methodology, that brings clarity to the stakeholders as they plan the recovery phase.

A detailed damage assessment study provides imperative data on several aspects[66]:

Figure 12: Data provided by a detailed damage assessment

Nature, scope and intensity of the event
Identification of categories and seriousness of the disaster

Individual and community impact
Extent of impact on community and individual levels

Additional resource needs
The additional resources required to stabilize the situation

Disaster declaration and justification
Proper declaration of disaster with an explanation

Emergency information given to the public
Relevant information given to the public from time–to–time to avoid panic induced crisis

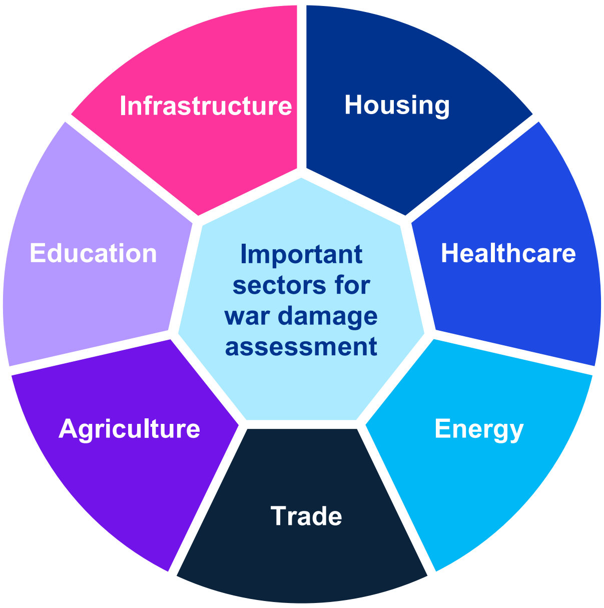
Future hazard addressal projects
Relevant steps planned for future conflicts or hazards that may arise as an aftershock to the main event

A 3-step approach to carry out a detailed damages and needs assessment studies

The first step to a damage assessment study is to identify the priority economic sectors of the country. The priority sectors may vary from country to country, based on certain conditions such as the population, factors of production (labor, capital, raw materials and the market for management or entrepreneurial resources), manufacturing capabilities, exports, imports, contribution to GDP etc. However, there are certain economic sectors that are largely common globally and have been integral part of the damage assessment studies carried out for the war-torn economies in the past.

[66] "Damage Assessment", Clermont County Ohio. Link

Figure 13: Important sectors which contribute to economy and thus important for damage assessment post a war



The second step is to assess the damages and losses across the identified priority economic sectors. The losses take into consideration the changes in economic flows into the sectors because of the war, that occur until complete economic recovery and reconstruction is achieved.

The third step involves the estimation of both damages and losses, as well as the qualitative impacts. The sector-specified recovery needs are established which includes the cost of reconstruction of the destroyed assets. The suggested sectoral priority interventions are then sequenced which includes the provision of services, improved specifications, and risk reduction measures.

Estimates are made on a few other cross-cutting critical issues[67] as well, such as:

Extent of damages to major industries	Extent of infrastructural damage	Approximate time to reach pre-war GDP level	Prioritization of reconstruction efforts	Increasing the productivity levels of the nation

A two-tiered hybrid approach typically drives data collection, relying on both ground-based and remote-based data

1. Ground-based data

- Ground spot checks
- Field assessments

2. Remote-based data

- Satellite imagery
- Publicly available information
- Social media analytics

The data collection to a large extent depends on satellite imagery, supported by social media analytics and ground spot checks. However, the imagery usually lacks detail and finesse as it is strictly limited to what appears in the imagery frame. To add to this, security challenges on the ground also make it difficult for the damage assessment team to interact directly with the Government stakeholders, resulting in significant data collection delays.

[67] Categorized by KPMG Global Services

The data collected forms the cornerstone for the preparation of a needs and damages assessment. The assessment is then utilized to calculate the cost of recovery so that funds can be appropriately allocated to ensure faster and smoother recovery.

The importance of damage assessment efforts can be further exemplified by analysing similar efforts in the aftermath of the wars in Syria and Kosovo.

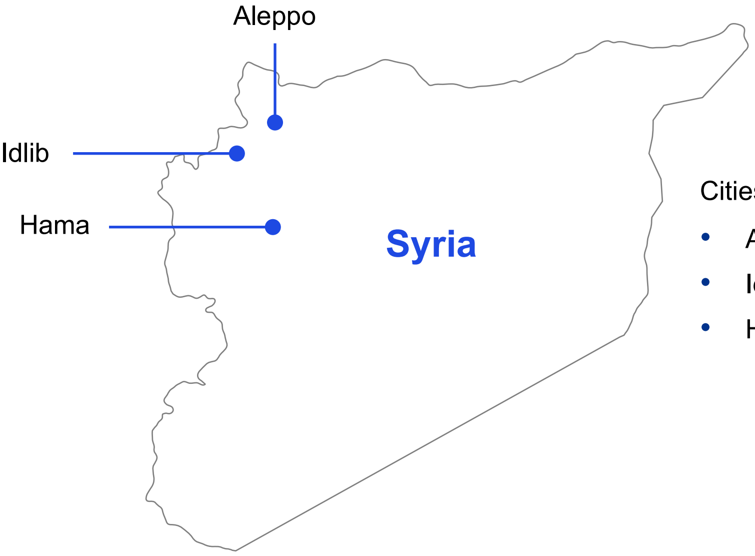
5.1.1 Syria's remote-based damage assessment[68]

The ongoing Syrian Civil war over the past seven years has left entire the Syrian cities in rubble. Syria's Damage Assessment (DA) project was initiated to provide adequate relief to the regions based on the key analysis drawn from the assessment by the **Syria Information and Research Initiative (SIRI)** of the **World Bank Group**. The assessment was conducted in three phases, and covered six governorate capitals - **Aleppo, Idlib, Dar'a, Hama, Homs, and Latakia**. The objective was to provide information on the effects of the current crisis on population, physical infrastructure, and quality of service delivery in these cities.

The rationale behind selecting the six cities was largely based on **population size** and one or more of the following criteria:

- Extent of infrastructure damages
- Loss of basic resources such as food, water, and electricity
- Displacement of a large number of people

Figure 14: Syrian cities selected for the damage assessment



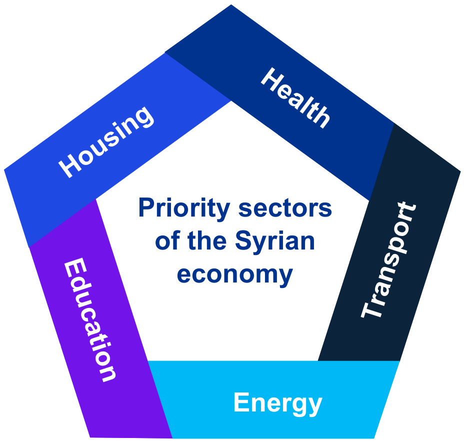
Cities selected for the damage assessment:

- Aleppo
- Idlib
- Hama

The emphasis was on five priority sectors of the Syrian economy

The assessment involved the consolidation, processing and analysis of primary and secondary data collected for each of the priority sectors of the Syrian economy. The sectors were identified either based on the extent of damages or their vulnerability such that a need was felt for prioritisation in terms of protection and/or assistance.

[68] "Syria Damage Assessment", World Bank Group, March 2017. Link



The assessment was conducted at three definite timeframes

1 Phase 1: The first assessment was conducted in December 2014

- **Initiatives:** Phase 1 covered seven sectors including education, healthcare, water and sanitation, energy, transportation, and agriculture in the six cities.
- **Key findings:** The assessment helped in establishing pre-crisis baseline data on assets and facilities and estimating damages across six cities and six sectors.

2 Phase 2: An update of the Phase 1 assessment was conducted in March 2016

- **Initiatives:** This update covered six sectors which included education, health, water and sanitation, energy, transportation and housing and same cities as in Phase 1.
- **Key findings:** The cumulative damage for all the six cities was estimated to be between US$5.9 billion to US$7.2 billion
  - Damages were estimated to have increased by 62 percent when compared to December 2014.

3 Phase 3: The third assessment was conducted in October 2016 (updated in February)

- **Initiatives:** The assessment covered the same sectors as those in Phase 2 (six sectors) but the geographical scope was limited to three cities – Aleppo, Idlib and Hama.
- **Key findings:** As of February 2017, the total damages in the three cities – Aleppo, Idlib and Hama, was estimated to be between US$7.8 billion and US$9.4 billion
  - Aleppo was the most affected city, accounting for 80 percent of the total damages as of February 2017.

The assessment methodology

The damage assessment was primarily based on the existing sources of secondary information. The data sources included remote sensing and satellite imagery; social media analytics; existing public information; and data obtained from the partner humanitarian agencies.

The assessment methodology used a percentage-based model to deduce an approximate level of damages suffered by the various sectors and cities due to the absence of different sources for verification of the data. A four-point (or tier) rating system was established to give an accuracy rating against the data points discovered. Three key attributes were considered to determine the authenticity of the data.

Information verified by reputable organizations

Visual evidence that is supported with imagery data or social media analytics

Non-bias nature of the source of information

For the cost of damage estimation, the average was calculated by taking into consideration the number of damaged facilities, their status (partially or fully destroyed) and the estimated pre-crisis unit cost for each of the assets based on the estimation of sectoral experts.

The sectoral assessments

Housing

The damage assessment for the housing sector covered five asset classes**: apartment buildings, popular housing (Sha'bi), villa, traditional arab homes (Dar'arabi),** and country houses. The assessment only covers physical damages to the core housing structures and does not include the destruction of amenities inside the house, and losses resulting from looting. With approximately **58 percent** of the total damage estimates, the housing sector was easily the most affected as was evident in the overall damage assessment.

The stock of housing was categorized into three states:

Undamaged	Partially damaged	Completely destroyed
	Less than 40% of the asset is damaged	More than 40% of the asset is damaged or the damage is structural

For the damage estimation, the average damage value was calculated based on the number of damaged facilities, their physical status (partially damaged or destroyed), and the estimated pre-war unit cost associated with each asset class.

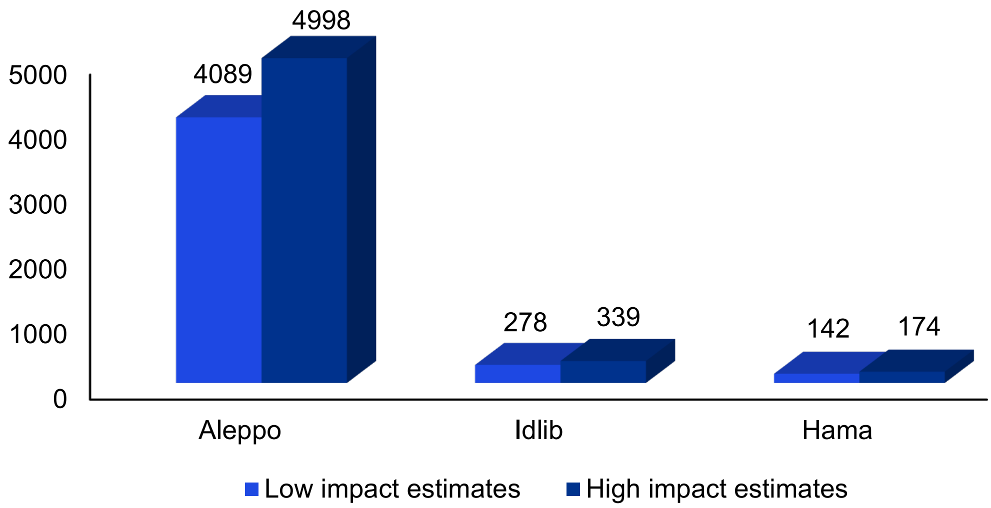
Costing of the assets impacted by the war

Partially damaged assets
40% of the unit cost

Destroyed assets
100% of the unit cost

The overall damage was subject to various factors including the percentage of damage repair already done and the conflict situation in the area which could cause a hindrance when trying to calculate the exact amount of damages done. Keeping these limitations in mind, the assessment was done using the percentage-based model and was found that the level of damages suffered was considerable. The losses and damages may be seen in **Figure 15.**

Figure 15: The cost of damages sustained in the three major cities (US$ million)



The total range for low to high impact estimate for all cities falls in the range of US$4,509 million–US$5511 million. Aleppo was the worst impacted city based on the range and the very far difference from Idlib and Hama cities as can be seen in **Figure 15.**

Health

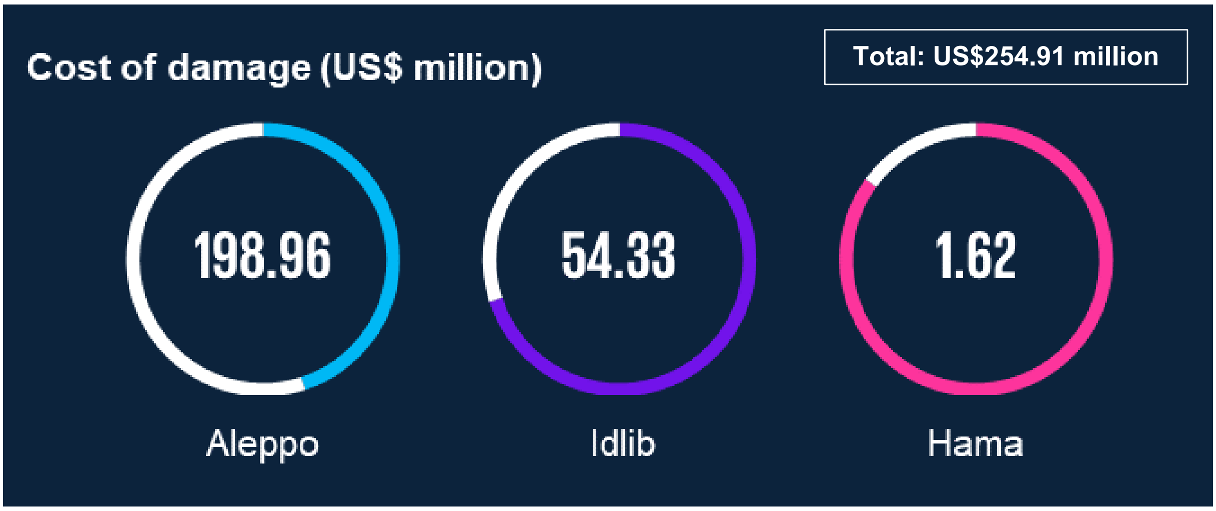
The three cities of Aleppo, Idlib and Hama were surveyed to understand the damages sustained by this sector. After the assessment, the estimated damage was estimated to be between US$255 million - US$312 million, this was an increase from the Phase 1 and Phase 2 assessments conducted in 2014 and 2016 respectively.

The city-specific cost of damages can be seen below:

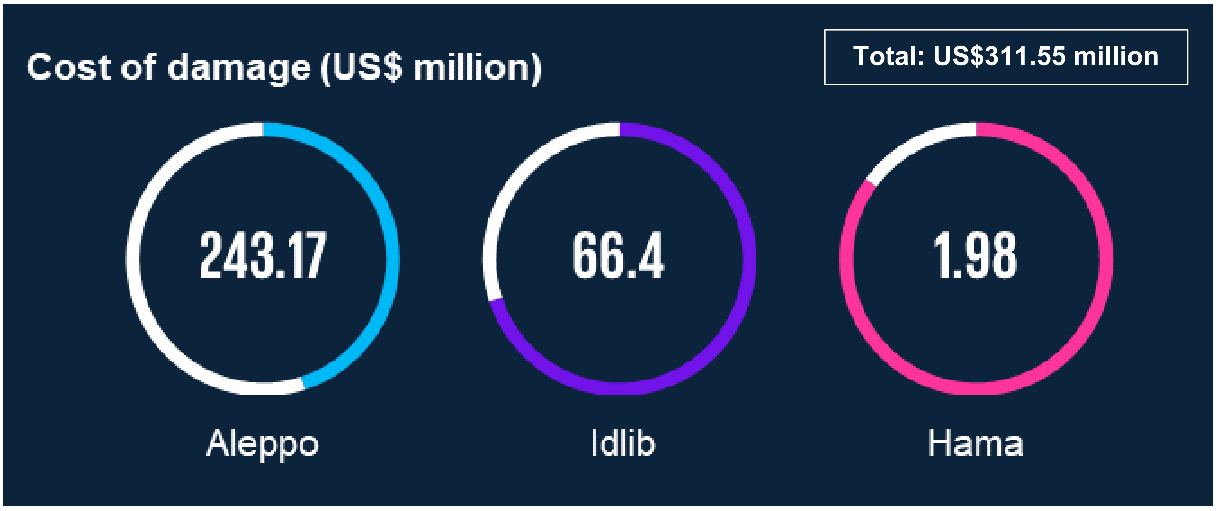
Figure 16: (a) Low damage city-specific estimates in the health sector

(b) High damage city-specific estimates in the health sector

(a)



(b)



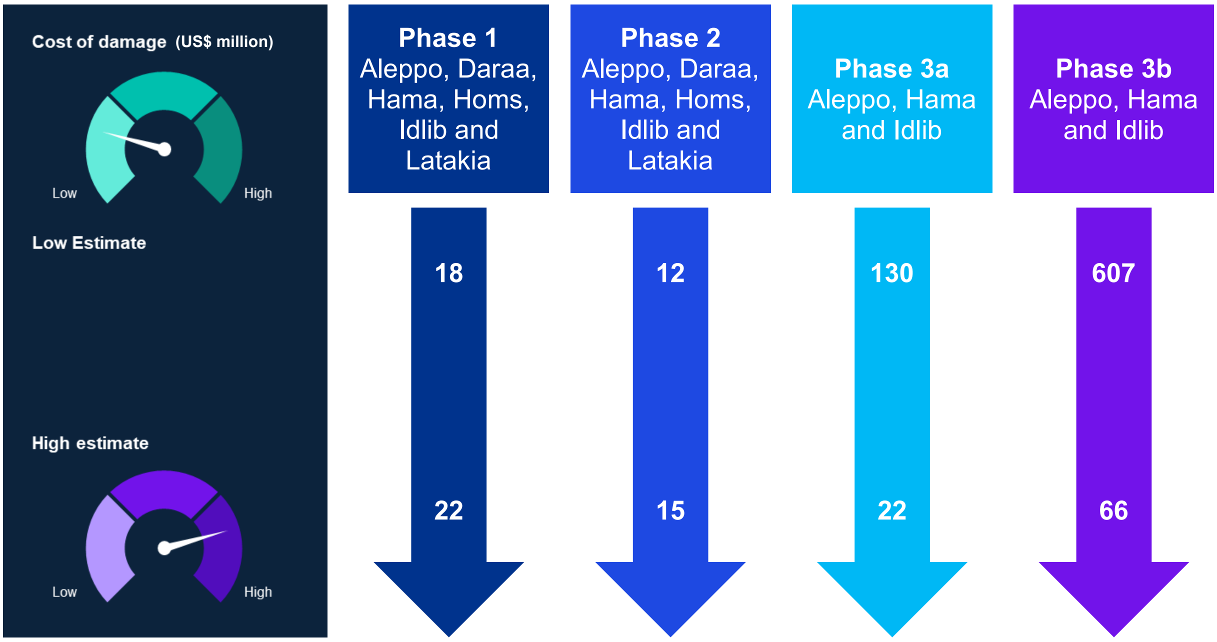
Note: The high estimate is 10 percent higher than the estimated cost and the low estimate is 10 percent lower than the estimated cost

From the figures above, it is clearly seen that Aleppo was by far the worst hit in the war with huge losses in the sector.

Transport

Information regarding the transportation sector was very limited for Syria making it difficult to establish a pre-crisis baseline for comparison. The country's roads were considered for the damage assessment and were compared based on the findings of the previous phases of assessment conducted as seen below:

Figure 17: Comparison of different phases of the damage assessment for the transportation sector



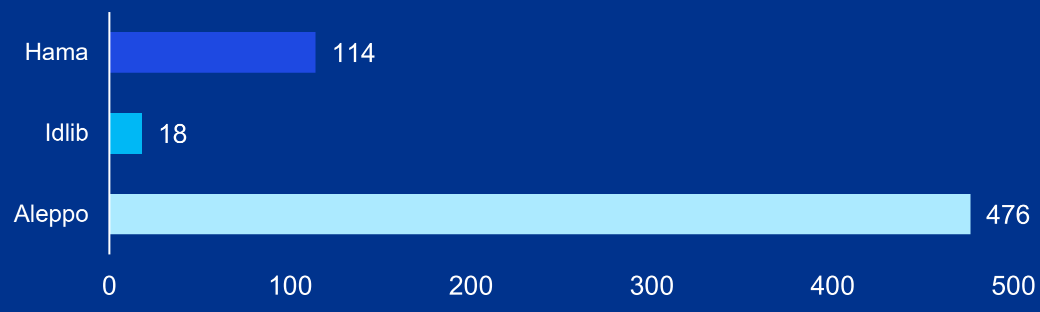
In phase 3b, the damage to bridges was also added to come up with an estimate. The totalled value for the three cities considered in phase 3b, Aleppo, Idlib and Hama, are provided in **Figure 18.**

Figure 18: Comparison of different phases of the damage assessment for transport sector

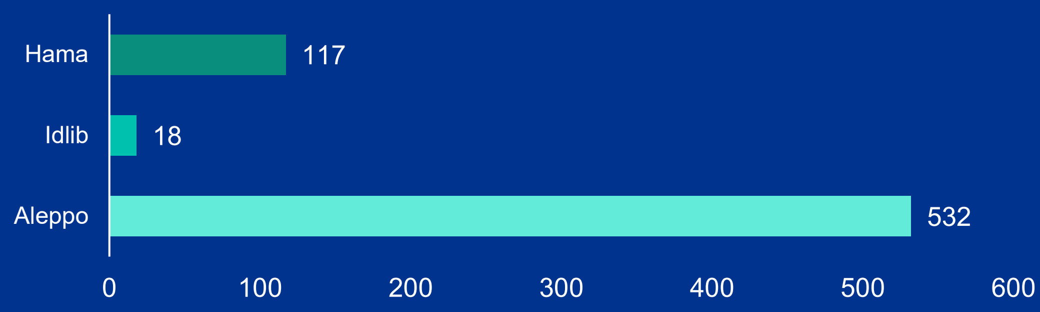
The total figures for the estimates come out to be:

- Low damage estimate: US$607 million
- High damage estimate: US$667 million

Low damage estimates (Phase 3b)



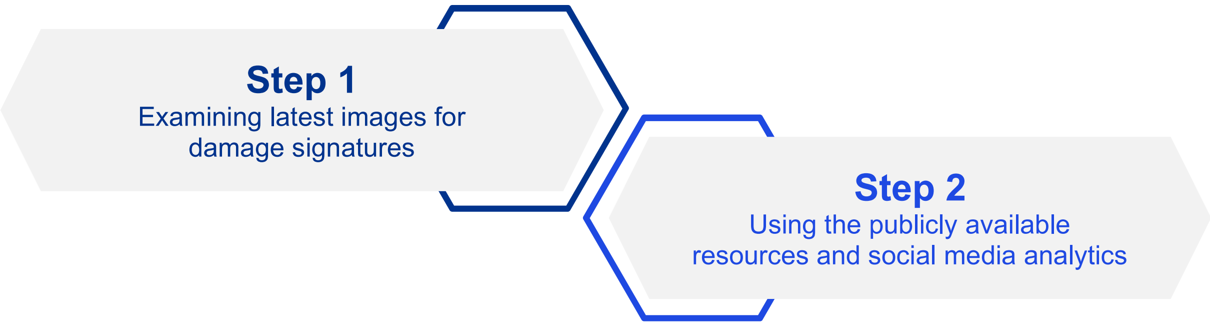
High damage estimates (Phase 3b)



From the comparison above, Aleppo was observed to be the most severely affected city in terms of withstanding maximum damages suggesting a high intensity of war.

Energy

The intensity of damages done to the power sector infrastructure was covered for the three cities, namely, Aleppo, Idlib and Hama. The damage assessments were conducted in two steps:



The results found after the analysis are as shown in Table 1.

Table 1: Damage to different power sector facilities in the cities of Aleppo, Idlib and Hama

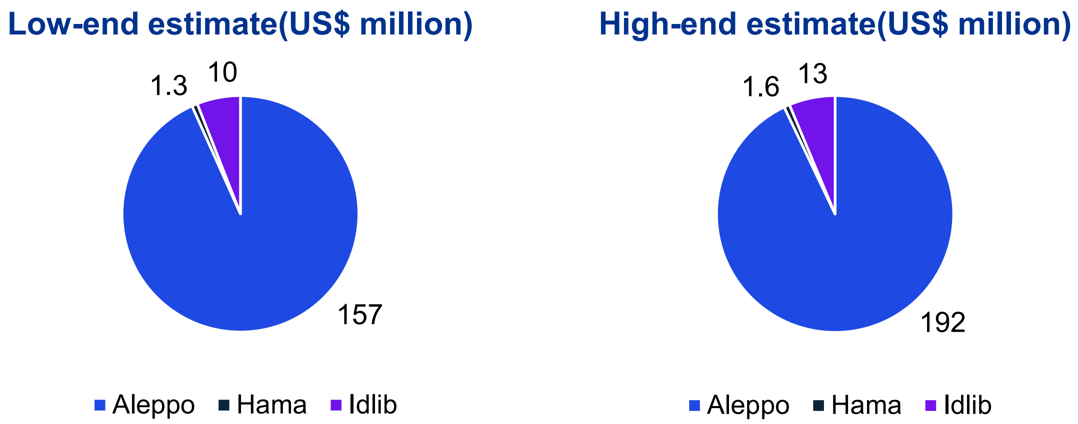
Facility Classification	Baseline Number (pre-crisis)	Total damaged	Completely destroyed	Partially destroyed
Power plant	4	4	2	2
Dam	1	0	0	0
Substation	27	14	3	11
Tower	765	77	68	9
Admin office	1	1	0	1
Total	**798**	**96**	**73**	**23**

From **Table 1**, It is evident that there were substantial damages to the power plants, substations, and admin offices as more than 50 percent of the facilities were damaged.

Education

The education sector took a big hit owing to this war. The estimates suggested that the damages ranged from US$169 million to US$207 million. A city-level damage assessment shown in **Figure 19** underlines that Aleppo had the highest estimated damages followed by Idlib and Hama.

Figure 19: Damage cost estimate ranges based on the assessment conducted in the cities



From the overall sectoral damage assessments, it is evident that Aleppo took the hardest hit from the war among the three cities chosen for the Phase 3 of the assessment.

5.1.2 Damage assessment of the war in Kosovo

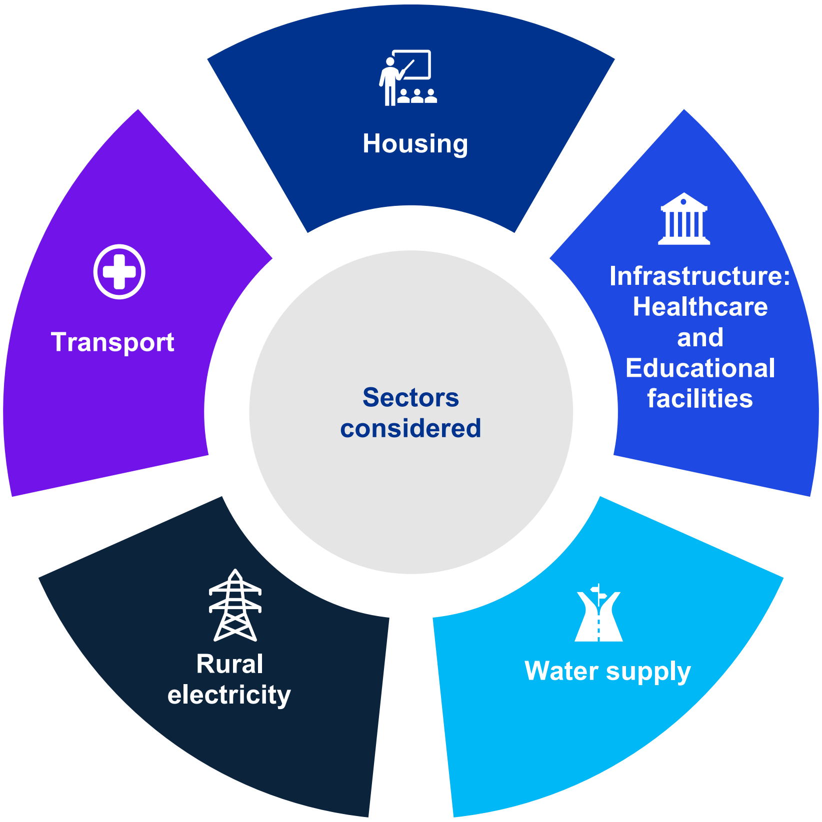
The problems emanating from the Kosovo war were both widespread and numerous, despite only lasting for less than two years (February 1998 until June 1999). Along with the influx of refugees from the region, the war resulted in various unfortunate consequences which included damages to trade routes and transportation, an erosion of confidence in consumers and investors, weakened infrastructure and increased stress on the economy.

The **North Atlantic Treaty Organisation (NATO)** had been leading a peace-support operation in Kosovo since June 1999 in line with the wider international efforts to ensure peace and stability in the region. Before the commencement of the NATO action, the **European Commission** sought the help of the **International Management Group (IMG)** to initiate an extensive damage assessment exercise in Kosovo. This assessment was finalized in February under which 14 damaged municipalities were assessed.

Housing, transportation, healthcare, and educational facilities were among the priority sectors for undertaking a comprehensive damage assessment

The comprehensive damage assessment identified the level of damages, the extent of assistance required for, and emergency measures required for the long-term reconstruction process. Few strategic sectors were identified for the entire exercise.

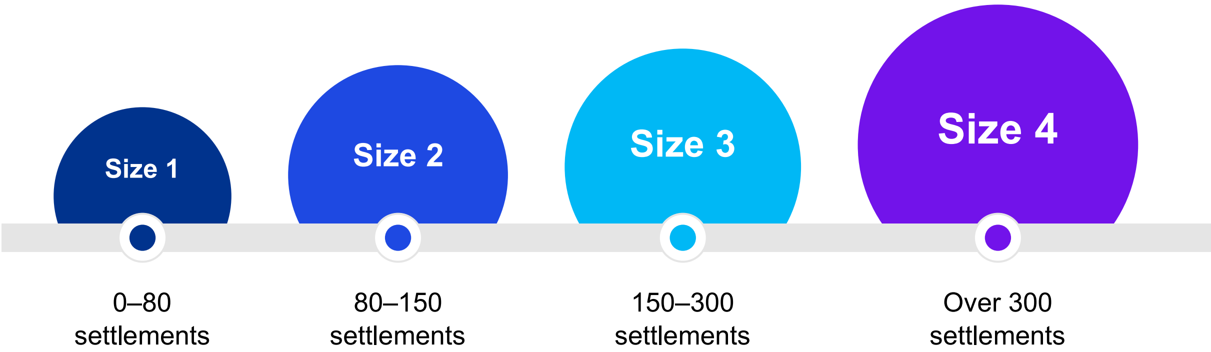
Figure 20: Sectors taken into consideration



The damage assessment methodology was driven by on-ground data collection

The assessment exercise was carried out across the entire country of Kosovo. During the first phase of the assessment, 14 municipalities were visited by four IMG assessment teams in four-wheel drive (4WD) vehicles and the observed damages to infrastructure and housing was noted in the form of a report for future reference. As the conditions turned peaceful and the rest of the areas became accessible, another 15 municipalities were assessed to get a clearer picture of the damages. The different facilities have been allocated different categories to assess the level of damage as can be seen in Figure 21.

Figure 21: Categories for the level of damage done for infrastructure facilities



Each category had a range of rebuilding cost associated with it.

Figure 22: Categories for the level of damage done for education and transport facilities

Different categories, as shown in Figure 22, were used to estimate the damage done to healthcare and education facilities. When the transportation sector was closely observed, it was seen that roads were damaged due to non-maintenance during the ongoing war and unrest in the province. An initial tentative estimation of the fund required for maintenance was done for the first year after the war (1998–1999).

Reconstruction cost estimates post the analysis of damages

Figure 23: Reconstruction costs of different facilities based on the level of damage

Education facilities	Healthcare facilities	Infrastructure facilities	Transport facilities
12,000 Category 1	**10,000** Category 1	**5,000–12,000** Size 1	**4 million** Ice and snow clearance equipment
30,000 Category 2	**15,000** Category 2	**10,000–15,000** Size 2	**8.4 million** First year of maintenance
50,000 Category 3	**22,000** Category 3	**15,000–19,000** Size 3	**9 million** Repair of 13 destroyed bridges
100,000 Category 4	**30,000** Category 4	**20,000–24,000** Size 4	**10 million** Pristina airport rehabilitation

Note: The numbers represent cost of reconstruction and are given in EUR

Figure 23 shows the estimated amount of funds required to rehabilitate the above facilities to normal level. The infrastructure facilities depict the cost of restructuring rural electricity and water supply.

06

How other countries financed reconstruction and building

6 How other countries financed reconstruction and building

In a nation that has been devastated by war, post-war reconstruction attempts to achieve sustained socioeconomic development as well as the consolidation of peace and security.

Post-war reconstruction involves efforts to simultaneously improve social, political, economic, and military (restoring law and order), as well as economic and political (rehabilitation and development) conditions (justice and reconciliation). The distribution of humanitarian aid, the restoration of physical infrastructure and facilities, the reestablishment of social services, the creation of favourable conditions for the growth of the private sector, and the implementation of crucial structural reforms for macroeconomic stability and sustainable growth are typical tasks that fall under the economic dimension of post-war reconstruction.

Through the course of history, organisations and countries have come together to aid countries through a phase of reconstruction and repair owing to goodwill as well as the geopolitical ties. International organisations come forward in situation like this to aid war-torn countries by providing them with essential resources in the form of loans as well as humanitarian aid.

6.1 Role of international institutions and other organizations in the reconstruction and rebuilding of war-torn economies

International organisations such as the World Bank Group and the International Monetary Fund (IMF) undertake structured processes to improve a war-torn country's social, economic, and infrastructural status. Such organisations make it possible for countries to obtain monetary as well as informational services to rebuild the country, post war.

6.1.1 The World Bank Group

The World Bank Group[69] originated as a support tool to undertake the reconstruction and reparation of Europe post the second world war damages. In the decades that followed, reconstructing the economical and primarily the infrastructural damages became the focal point for the World Bank Group to address. Institutions like the World Bank Group operate in accordance with their affiliation with the United Nations organisation, acting only as facilitator for financial and reconstruction operations in the respective countries, and does not at any point of time take up the responsibility of peace-making or being a peace-keeping institution. The World Bank Group also does not interfere with the political atmosphere of the country requiring assistance and operates without bias towards the rebuilding and reparation of the region.

[69] "International bank for reconstruction and development", The World Bank, Link

The reconstruction and rebuilding financing options of the World Bank

Investment project financing
Enables governments to get funding for projects that build social and physical infrastructure required to combat poverty and sustainable development

Development Policy Financing
Provides governments with fiscal support for undertaking programs pertaining to institutional and policy measures to achieve shared and sustainable growth

Program-for-results financing
Helps nations enhance the design and execution of their own development projects and plans and produce enduring benefits by strengthening institutions

The World Bank's post-war resolution[70] has two objectives to fulfil through the course of the implementation. Firstly, it aims to aid in the transition from temporary peace to lasting peace once hostilities have ended. Secondly, to aid in the development of the economy and society. It aids war-torn countries in overcoming crises through multiple stages of processes across different areas[71] [72]:

- Creating the environment for the return of trade, savings, and domestic and international investment
- Rebuilding of important physical structures such as vital transportation, communication, and utility networks
- Restoring law and order, strengthening government institutions, and making it possible for civil society organizations to operate efficiently to re-establish the framework of governance
- Promoting macroeconomic stabilization
- Jump-starting the economy by investing in key productive sectors
- Restoring adequate legal and regulatory frameworks
- Rehabilitating financial institutions

[70] "Post conflict resolution", The World Bank, Link
[71] "Post conflict resolution", The World Bank, Link
[72] "Post-conflict reconstruction: El Salvador", World Bank, Link

The World Bank's aid to El Salvador

The Salvadorian civil war lasted for over 22 years, totalling over 80,000 lives and over half a million locals displaced. The impact of the war was further magnified by the earthquake in1986, leaving the state crippled in economic and infrastructural debt.

The World Bank structured two Structural Adjustment Loans (SALs) totalling an assistance of over US$125 million. The SALs gave assistance to the government's 1989–1994 Economic and Social Development Program, concentrating on trade, taxation, privatization, the financial sector, social sectors, and poverty alleviation.

Key sectors that were assisted

- Energy
- Agriculture
- Public sector modernisation

Like the World Bank, international institutions such as Care International[73], United Nations[74], and INTERSOS[75] aid the war-torn countries through humanitarian crises that come along with such armed conflicts.

6.1.2 The International Monetary Fund (IMF)

The International Monetary Fund (IMF) also operates along similar lines as the World Bank to offer affected countries monetary support, to enable them to attain a stage of stability, followed by the development of the socio-economic activities. The IMF is tasked[76] with monitoring the global monetary system to guarantee exchange rate stability and pressuring its members to abolish trade-impeding currency controls. A recent instance of this is the disbursement of US$1.4 billion[77] in March 2022 for Ukraine under the IMF's Rapid Financing Instrument (RFI) to help meet urgent financing needs and mitigate the economic impact of the war.

The Rapid Financing Instrument (RFI) provides rapid financial assistance, which is available to all member countries facing an urgent balance of payments need. The RFI was created as part of a broader reform to make the IMF's financial support more flexible to address the diverse needs of member countries. The RFI replaced the IMF's previous emergency assistance policy and can be used in a wide range of circumstances. [78]

The IMF and Lebanon

Going through one of its worst crises during 1975-1990 civil war, Lebanon was left with a crippling economy, over 120,000 estimated fatalities and displacement of over one million Lebanon locals.

The aid provided by the IMF enabled Lebanon to reverse its falling GDP growth, stabilize the falling Lebanon pound value as well as increase in foreign exchange reserves. Improvement in these parameters cumulatively accompanied structural improvements as well as increased private sector involvement in infrastructure development.

Key sectors that were assisted

- Stabilisation of inflation
- Increase in demand for Lebanese pound through dollarisation
- Growth of GDP

[73] "Care", Care International, Link
[74] "United Nations", United Nations, Link
[75] "INTERSOS",INTERSOS, Link
[76] "About the IMF history", IMF, Link
[77] "IMF Executive Board Approves US$ 1.4 Billion in Emergency Financing Support to Ukraine", IMF, Link
[78] "Inquiry on Lebanon", United Nations, Link

Financing mediums of the IMF

Loans on no concessional interest rates
These loans are provided to countries to promote development and alleviation of existing or oncoming crises through proper fiscal management

Loans on concessional interest rates
These loans are provided to substantially poorer countries to offer them fiscal support to exit crises without incurring large amount of debt, which comes into existence on loans taken with rather high interest rates

6.1.3 Role of ILO in post-war reconstruction[79]

Recognised as a special agency of UN in 1946, the International Labour organisations (ILO) works across regions to promote social justice and decent labour supply. Since its recognition, the ILO has been involved in undertaking assessments of labour situations across nations that are facing crises of various sorts and providing them suitable and curated approach to overcome these.

Promote and realise workplace standards, fundamental values, and rights

Increase the availability of social employment opportunities and income for all genders

Broaden the scope and efficacy of social protection for all

Strengthen social dialogue and tripartism

[79] "Crises and decent work", ILO, Link

ILO's aid to Kosovo

During the 1999 war in Kosovo, apart from the political and economic crises, the region also suffered the impact of destruction of commercial activities, industrial complexes, public establishments, and population displacement.

To improve the situation, the ILO partnered with the International organisation for Migration (IOM) to run trainings and workshops on employment and skill training of demobilized soldiers and other initiatives to train the youth of the region

Key initiatives by the ILO

- **Establishment of integrated economic development zones**
- **Reconstruction and extension of social protection**
- **Development of small and medium enterprises**

6.1.4 Role of European Commission in post-war reconstruction[80]

The European Commission works towards resolution of conflicts, maintain harmony and stability and address post- crisis situations across the globe. Rapid response actions are European Commission's strategic approach to deal with short term crisis in post-war situation in fast and flexible manner. Various forms of approach include mediation, brokering, implementation of peace agreements, reintegration of civil mode of conducts and ensuring justice.[81]

The European Bank for Reconstruction and Development (EBRD) is a multinational development bank, established to help in rebuilding during post-war situations. It provides financial and technical support to member countries which includes 66 nations, the European Union and the European Investment Bank (EIB).[82]

European Commission's aid to Liberia

During the period 2004-07, European Commission provided strategic support to Liberia to deal with post-war scenario. The strategy majorly focused on long-term strategies, with special focus on education sector.

The European Commission's volunteers ensured that the rehabilitation needs in war-torn Liberia were met.

The Commission also contributed to UN Trust Fund for re-establishment by creating post-war livelihood opportunities and commence return of refugees.

Key initiatives

- **Financed more than 1,000 crisis response and conflict resolution projects in 10 years**
- **Worked with 63 partner countries to address chemical, biological, radiological and nuclear threats**
- **Funded more than 100 projects with an aim to cease violent extremism since 2013**

[80] "Topihematic Evaluation of European Commission Support to Conflict Prevention and Peace-building", OECD, Link
[81] "Conflict prevention, peace and stability", European Commission, Link
[82] "Coordination with the European Bank for Reconstruction and Development", European Union, Link

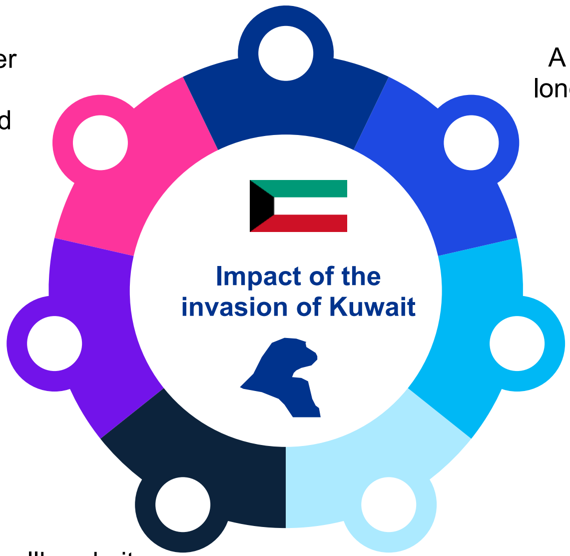
6.1.5 Funding achieved through reparations

International organisations such as the World Bank and the IMF aid the states with the calculation of what is called 'war reparation cost'. Essentially, it is the cost that the attacking country must bear to ensure that the other is provided with assistance for its reconstruction and development through the disruption it experienced. International organisations such as the United Nations, the World Bank and the IMF help war-hit nations figure out the cost of reparation required.

An instance of this is the reparation cost that Iraq had to pay for its invasion of Kuwait in 1990. The former was tasked to pay Kuwait a sum of **US$52.4 billion**[83] by the United Nations Compensation Commission, a subsidiary of the United Nations that came into existence in 1991 to process claims for losses and damages incurred due to Iraq's invasion.

6.1.6 The reparation cost attribution to Iraq post its invasion of Kuwait

Kuwait incurred massive infrastructure and humanitarian losses with respect to infrastructure and humanitarian aspects owing to Iraq's invasion. But this was worsened by the retreat move made by the latter, when Iraq set more than 700 oil wells[84] ablaze across Kuwait. Apart from exhausting the half of the natural fuel reserves, this released harmful and carcinogenic substances into the atmosphere, posing serious concern towards the climatic conditions in the gulf region[85] :



Role of the United Nations Compensation Commission

A total of 2.7 million claims were submitted to the Commission, with a claimed value of **US$352.5 billion**[86]. Around 1.5 million successful claimants received a total of US$52.4 billion in compensation after the Commission finished processing claims in 2005. Governments, international organisations, businesses, and people made claims, which were examined and evaluated by 19 panels of commissioners. The US$52.4 billion in compensation awards were delivered to the 1.5 million claimants in full as of the January 2022 payment made to the final claim with an unpaid balance.

Post-confirmation of Iraq's responsibility towards losses and damage in Kuwait by Security Council, UNCC had the main task of fact-finding. The jurisdiction made by the Commission was based on two

[83] "Iraq makes final reparation payment to Kuwait for 1990 invasion", The World Bank, Link
[84] "State of Kuwait", UNCC, Link
[85] "State of Kuwait", UNCC, Link
[86] "United Nations Compensation Commission", UNCC, Link

wheels, the first was to identify who are eligible to claim damages and second was to segregate the type of damages directly linked to Kuwait's invasion.

The claims submitted by governments, international organisations, corporates and individuals were evaluated by panels with three independent experts. For verification and valuation purposes, the panel was assisted by the Commission's secretariat, technical experts and consultants. Based on recommendations made by the panel of Commissioners, the Commission approved claims worth around US$52.4 billion, accounting 15 percent of the initial claim amount.[87]

Cost to Iraq for the invasion

Although the war reparation cost was paid by Iraq, the rate at which it was paid back was subject to the conditions in the region as well as the geopolitical scenario. Iraq paid the debt to Kuwait through the revenue it made through oil sales. With a varying rate over 31 years, **approximately 3 percent**[88] of the revenue generated through natural gas sale was utilized to pay off the debt to Kuwait. This was again met with a halt starting October 2014 until April 2018 owing[89] to the budgetary and security restrictions faced by the Iraqi government in its fight against the Islamic state insurgents.

6.2 Role of developed countries in the reconstruction and rebuilding initiatives

Developed countries have extended a friendly arm to states going through periods of armed conflict as an extension of their geopolitical interests as well as good will for a long time. Most initiatives involved the sanctioning of a loan or grant which serves the interests of both the parties while focusing on development of economy of the war-stricken one.

6.2.1 The United States Foreign Aid

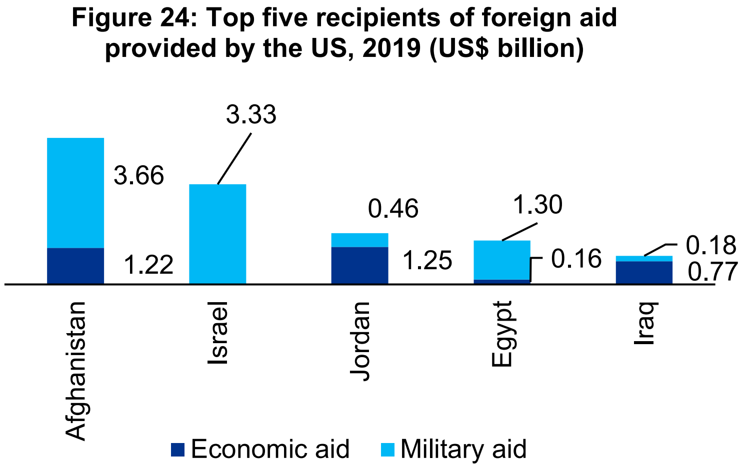
The US has also been a partner in aiding countries to overcome their state of financial instability set in due to armed conflicts by providing them with financial assistance through different channels. Known as the Marshall plan[90], it was developed post the second world war to assist the European economy after the impact it had suffered. Although, different policies since then have come into effect supporting post-war aid, they operate on similar principles as the Marshall plan. The current plan in effect, known as the United States Foreign Aid, provides the US allies with necessary and essential assistance.

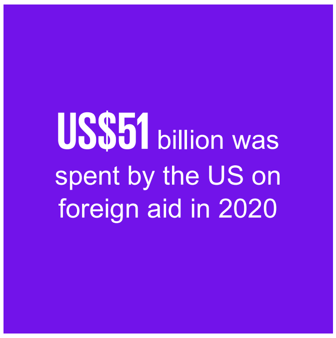
USAID towards Iraq

With the full-blown effect of the war in the region, Iraq's need for rebuilding and reconstruction was more evident. In April 2003, the US Congress approved US$2.5 billion[91] for immediate relief in the region through supplies such as food, medicine and water through the Iraq Relief and Reconstruction Fund (IRRF). The fund received further monetary adjustments, taking the total to US$18.4 billion, expanding the purpose to general reconstruction needs.
Following Operation Iraqi Freedom in April 2003, the US Congress committed $20.9 billion in civilian monies to aid in the reconstruction of Iraq over the subsequent three and a half years, with an aim to use this reserve to kick-start Iraq's reconstruction and reform initiatives.

[87] "UNCC at a glance", UNCC, Link
[88] "Iraq pays last chunk of $52.4 billion Gulf War reparations - UN", Reuters, Link
[89] "Iraq pays last chunk of $52.4 billion Gulf War reparations - UN", Reuters, Link
[90] "Marshall Plan (1948)", National Archives, Link
[91] "Rebuilding Iraq: U.S. Achievements Through the Iraq Relief and Reconstruction Fund", US Department of State, Link

Global USAID contribution





By contributing to both military and economic needs, the US[92] has been able to improve its ties as well as provide help to the countries in need of finances for redevelopment.

Another evident instance of foreign aid with respect to restructuring and reconstruction is the aid provided by the US to the European Union post the second world war. The aid provided was valued at US$22 billion[93], currently adjusted with inflation as US$182 billion in the 21st century. The aid by the US enabled stabilisation of the situation in the continent and jump-started its growth post the war. The US also actively invested in the development of Japan post the second world war by investing US$2.2 billion, currently adjusted with inflation as US$18 billion[94] in the 21st century between the years 1946 and 1952. It's participation in developing the region through financial aid has enabled it to have Japan as its close ally in the Asia Pacific region.

6.2.2 Japan as a source of foreign aid

Such states have come forward time and again to assist war-torn countries through their process of rebuilding the economy and infrastructure. Japan as a nation, stands out in this aspect owing to their multiple instances of providing financial assistance to war-torn economies. Japan has been associated with 22 percent[95] of all the aids that are provided worldwide which includes grants, net loans and contributions to multilateral agencies, making it evidently more generous when compared with the United States that contributes 13 percent and the European Union that cumulatively contributes 34 percent.

Although Japan offers assistance to countries that are facing economic downfall through various channels such as bilateral grants, bilateral loans and grants through multilateral agencies such as the United National High Commissioner for Refugees and the Asian Development Bank, approximately half of the bilateral aid that is has provided to such economies has been through loans which are sanctioned at concessional interest rates with grace periods of 10 years and repayment periods of 30 years or more.

30
percent of war aid offered by Japan during 1991-2001 was received by the transportation sector of different regions

43.7 percent of the aid offered during 1991-2001 by Japan was received by countries in the Southeast Asian region, followed by 17.6 percent for South Asia and 16.7 percent for East Asia

[92] "Foreign Assistance", Foreign Assistance, Link
[93] "America's Proud History of Post-War Aid", US News, Link
[94] "America's Proud History of Post-War Aid", US News, Link
[95] "The Reconstruction of War-Torn Economies and Peace-Building Operations", Suffolk University and Beacon Hill Institute, Link

Japan also maintains a pattern for the loans and agreement it has granted which is in line with its official policies such as the Overseas Development Assistance Charter[96] and the medium-term Strategy for Overseas Economic Cooperation Operations. These charters dictate the pattern along which Japan sanctions its assistance to developing countries with priorities such as alleviation of poverty, economic development of the nation, push towards 'knowledge assistance' and more emphasis on renewable energy generation, amongst others. The approach may also be observed in terms of the way East, Southeast and South Asia have been a priority area for Japan with respect to offering of financial assistance.

The aid to Kosovo

An instance of assistance from Japan may be seen with reference to the Kosovo war[97]. Post the signing of the peace accords, with 80 percent of ethnic Albanian refugees returning home to devastated infrastructure, multiple Japanese NGOs had been stationed on ground to provide relief to the refugees, which included construction of 500 temporary housing units, distribution of essential goods, reparation of social infrastructure as well as provision of medical supplies.

The reconstruction efforts directed at Iraq

Iraq's stability, which is essential for stability of the Middle East, has been Japan's focus. It has continuously helped Iraq's own state-building initiatives since 2003 in a variety of other sectors, including the restoration of its infrastructure. After the Iraq War, Japan announced in October 2003 that it would give Iraq up to US$5 billion in reconstruction aid, including US$1.5 billion in grant aid as "assistance for immediate needs" (with a focus on improving security and rebuilding the essential infrastructure for the Iraqi people, such as electricity, education, water and sanitation, health, and employment) and up to US$3.5 billion in Overseas Development Assistance (ODA) loans to support medium-term reconstruction needs (primarily to support the development of economic and social infrastructure).

[96] "The Reconstruction of War-Torn Economies and Peace-Building Operations", Suffolk University and Beacon Hill Institute, Link

[97] "The Reconstruction of War-Torn Economies and Peace-Building Operations", Suffolk University and Beacon Hill Institute, Link

07

How were the reconstruction funds managed and organized?

7 How were the reconstruction funds managed and organized?

7.1 Needs estimation helps mobilize funds and incentivize private sector investments

A war-damaged country, once it receives funding, must have a proper plan to allocate and spend the money to restructure the sectors in order of priority to its economy.

Step-by-step approach followed by countries to restore their economic sectors post-war

A structured plan and international funding are required by every country which has been through war to get its economy back to the pre-war levels. Iraq followed a sectoral approach to perform needs assessment for each sector to gain funding while Bosnia and Herzegovina (BiH) too followed a sectoral approach to allocate funds efficiently to each sector.

Iraq's post DNA approach to rebuild its sectors and stabilize the GDP[98]

A **Damage and Needs Assessment (DNA)** was done for Iraq by The World Bank which followed a two-tier approach, i.e., relied on both ground data provided by the Government of Iraq and data collected by remote methods. Based on the extrapolated data, a sectoral analysis was done considering the seven directly affected governorates.

After the assessment, the overall damages were estimated post which they came up with the monetary needs of the identified priority sectors as can be seen in the sections below.

Social Sectors

Housing	**Total needs: US$17,441 million** Short–term needs (year 1): **US$4,988 million** Medium–term needs (years 2–5): **US$12,453 million**
Health	**Total needs: US$4,365 million** Short–term needs (year 1): **US$873 million** Medium–term needs (years 2–5): **US$3,492 million**
Education	**Total needs: US$4,561 million** Short–term needs (year 1): **US$912 million** Medium–term needs (years 2–5): **US$3,649 million**
Social protection	**Total needs: US$6,373 million** Short–term needs (year 1): **US$1,641 million** Medium–term needs (years 2–5): **US$4,732 million**
Tourism	**Total needs: US$1,716 million** Short–term needs (year 1): **US$793 million** Medium–term needs (years 2–5): **US$922 million**

[98] "Iraq: Reconstruction and Investment", World Bank Group, January 2018. Link

Sectors such as tourism were badly impacted majorly owing to the wiping out of jobs. Iraq held significant value with respect to its rich religious history. The tour guides and hotels who aided people visiting these sites were the primary revenue drivers who were hit by the war.

Productive Sectors

Agriculture

Total needs: US$3,393 million

Short–term needs (year 1): **US$1,017 million**

Medium–term needs (years 2–5): **US$2,375 million**

Industry and commerce

Total needs: US$10,580 million

Short–term needs (year 1): **US$2,116 million**

Medium–term needs (years 2–5): **US$8,464 million**

Water resources

Total needs: US$207 million

Short–term needs (year 1): **US$143 million**

Medium–term needs (years 2–5): **US$64 million**

Finance and markets

Total needs: US$9,254 million

Short–term needs (year 1): **US$981 million**

Medium–term needs (years 2–5): **US$8,273 million**

Note: Water resources are understood to be a part of the productive sector as irrigation channels are one of the leading applications of water, hence relating to the agricultural sector.

Infrastructure sectors

Power

Total needs: **US$9,112 million**

Short–term needs (year 1): **US$4,556 million**

Medium–term needs (years 2–5): **US$4,556 million**

Oil and gas

Total needs: **US$7,209 million**

Short–term needs (year 1): **US$736 million**

Medium–term needs (years 2–5): **US$6,472 million**

Information and communication technologies

Total needs: **US$644 million**

Short–term needs (year 1): **US$210 million**

Medium–term needs (years 2–5): **US$434 million**

Transport

Total needs: **US$3,960 million**

Short–term needs (year 1): **US$1,188 million**

Medium–term needs (years 2–5): **US$2,772 million**

Water, sanitation and hygiene

Total needs: **US$2,442 million**

Short–term needs (year 1): **US$1,709 million**

Medium–term needs (years 2–5): **US$733 million**

Municipal Services

Total needs: **US$126 million**

Short–term needs (year 1): **US$13 million**

Medium–term needs (years 2–5): **US$113 million**

Cross–cutting sectors

Short–term needs (year 1): **US$959 million**

Medium–term needs (years 2–5): **US$411 million**

Governance
Total needs:
US$1,370 million

Environment
Total needs:
US$5,498 million

Short–term needs (year 1): **US$16 million**

Medium–term needs (years 2–5): **US$5,482 million**

Looking at the amount required by each sector and the subsectors and the overall amount as given above, we can see that the **top four sectors which have the highest share in total needs** in comparison to other sectors are:

Housing

Share of total needs: **19.8%.**

Industry and commerce

Share of total needs: **12%.**

Power

Share of total needs: **10.3%.**

Finance and Markets

Share of total needs: **10.5%.**

Recovery strategy employed by Iraq

Based on the prioritization and needs estimation for each sector, three objectives were put forward to help Iraq move on the road to recovery:

Renew social contract

- By achieving this goal, the government of Iraq aimed to increase the reconstruction efforts' transparency and accountability, which would help restore confidence.
- It was expected to put a strong emphasis on promoting crucial policy changes needed to improve local level implementation capability, bringing development closer to the impacted populace.
- The government aimed to enhance their ability to respond to crisis and prevent future wars.

Promote economic and business recovery/development

- It was critical to boost economic activity, build productive capacity, and encourage private sector participation in the rehabilitation efforts.
- Government of Iraq's Vision 2030 focused on bringing about financial reforms, improving business environment, and creating more employment.
- The Government was geared up to evaluate the best ways to efficiently use reconstruction efforts to create more employment in different sectors of the economy.

Rehabilitate major infrastructure and restore service delivery

- The devastation to the infrastructure sector had practically caused a standstill in other sectors like energy, transport, communication, housing, and irrigation.
- The Government's Reconstruction and Development Framework (RDF) was aimed at primarily helping restore damaged infrastructure, in turn enabling the recovery of other related sectors like housing and transport. This was expected to further facilitate economic growth.

Further improvements in discussion

The next steps in the strategy were to expand the number of governorates to 11 and feed into the reconstruction framework to provide a sound and systematic recovery approach and reduce any potential blind spots or gaps that could be missed in the future.

Another such instance can be seen in the European Union's approach to the reconstruction of Syria post war.

Syria's road to reconstruction under the wing of European Union

The war had devastating effects on Syria, the reconstruction estimates of which ranged from US$250 billion to US$400 billion. It was evident that funding from international sources was necessary. The European Union put forward its stance in applying the EU strategy on Syria.

Rebuilding Syria

The losses had been severe and the decline in Syrian GDP had gone from **US$61.1 billion in 2010 to US$17.1 billion in 2017.** The EU had a peacebuilding framework to promote the rebuilding in Syria. Post-war peacebuilding has many definitions, but its earliest definition was given by the UN Secretary-General in 1992:

> **action to identify and support structures, which will tend to strengthen and solidify peace in order to avoid a relapse into conflict.**
>
> **Boutros Boutros-Ghali**
> UN Secretary-General

World Bank and the road to rebuilding Bosnia and Herzegovina

A different approach can be seen in the World Bank's reconstruction fund support to Bosnia and Herzegovina after the war ended. The Bank established a US$150 million **Trust Fund for Bosnia and Herzegovina (TFBH)** to grant funds for emergency projects[99].

The strategies of World Bank were:

- To support reconstruction across all sectors from 1996–1999.
- To establish a framework to transform the province's economy from a socialist to a market one.
- To develop and empower people by working on governance and social services.

Post-war reconstruction period FY96–99 strategy of the World Bank

[99] "Bosnia and Herzegovina: Post-conflict resolution and the transition to a market economy", World Bank, September 2004. Link

FY96–99 was the reconstruction period post-war. The bank had planned to allocate **US$550 million of IDA** for the purpose which was a massive increase from a normal International Development Agency (IDA) allocation for a country. It was justified by putting forth the point that it would play a pivotal role in the country's reconstruction.

Overall, the bank allocated a lot more than the normal fund which amounted to US$983.1 million in IDA and TFBH for a total of 47 projects for rebuilding.

Of the total amount, US$696.4 million was allocated for 30 projects during the reconstruction period (1996–1999) and an amount of US$286.7 million was allocated for post-reconstruction period (2000–2003).

During the post war reconstruction period, the Bank allocated all possible monetary resources to finance emergency projects in Bosnia and Herzegovina. The total amount and the number of projects can be seen below:

- In 1996, seven emergency projects were approved worth US$160 million, where US$150 million was aided by TFBH and US$10 million was provided by the IDA.
- The total ballooned to a whooping US$196.4 million in first six months of 1997 after the addition of another nine more projects.

Once it was observed that each sector demanded different type and level of attention, a new decision was made to fund different projects in each sector than a single bigger one and seek donors to help finance the operations.

Education sector

Funds spent on specific projects: US$29 million

- A priority reconstruction program was established and carried out in two phases:
  - Emergency Education Reconstruction Project-I: US$32.8 million (US$10 million provided by World Bank). Only US$10.5 million of the remaining could be collected thus giving rise to the second phase (1996–1998).
  - Emergency Education Reconstruction Project-II: Additional SDR 7.7 million was approved.

Health sector

Funds spent on specific projects: US$25 million

- Funds were allocated in the form of different projects undertaken in the sector
  - War Victims Rehabilitation Project (WVRP): TFBH and IDA allocated US$10 million in 1996.
  - Essential Hospital Services Project: IDA US$15 million in 1997.

Financial sector

Funds allocated for the sector: US$296 million

- The primary objective of World Bank in this sector was to:
  - make sure there are enough funds for the development and support of the private sector.
  - reform and strengthen the sector through different projects.
- The total amount given above was spent on 13 TFBH and IDA projects.

Infra-structure sector

Funds allocated for the sector: US$350 million

- Given the extent of destruction, the World Bank allocated a large amount for BiH's infrastructure rebuilding projects:
  - Emergency Public Works and Employment: US$10 million funded by the IDA.
  - Water, Sanitation, and Solid Waste Urgent Works: US$20 million funded by TFBH, March 1996.

Social Protection sector

Funds spent on specific projects: US$168 million

- The war destroyed the social system and intervention came in the form of different projects:
  - Emergency Recovery Project (1996): Total project cost was US$160 million (US$45 million funded by TFBH and the rest by Canada, the EU, Luxembourg, the Netherlands, Switzerland, the U.K., and others).
  - Emergency Demobilization and Rehabilitation (1997): US$7.5 million from IDA.

The details[100] above depict the different sectors identified, some of the projects under them and the funds allocated to each as part of the reconstruction projects.

Within the political timeframe established by the international community's efforts to bring peace, the World Bank sets the pace for developing the framework for reconstruction and recovery. The timeline for beginning reconstruction work had to be shortened to meet the peace implementation schedule.

With 16 emergency initiatives, the World Bank made significant efforts to launch the reconstruction effort without waiting for financial normalcy or membership in the Bank. Following this, was a comprehensive assistance programme that included paying back debts owed to the Bank and membership, developing and implementing a full-scale, medium-term assistance strategy to support the systemic reform programme in BiH, and continuing support for the reconstruction programme for BiH in collaboration with other donors.

All the monetary help mentioned above does come with conditions that the funded country has to fulfil to get approval for the desired funds.

7.2 Funding linked to meeting certain conditions or rolling of specific reforms

Many times, post-war reconstruction funds by the IMF or the World Bank or other developed country/countries entail few conditions which must be met by the war-stricken countries to get the funds.

Some of these are:

- A fixed principal repayment rate
- Funds to be used only for the specified purpose
- Funds should be paid within the designated timeline

[100] The total funds shown for education, health and social protection sector is a total approximation of the funds spent of projects under them, BiH stands for Bosnia and Herzegovina.

International funding examples that were issued with conditions[101,102]

IMF lending to Armenia

The IMF put forth the condition that it could only lend to Armenia if it was satisfied that Armenia would draw up and follow economic policies that would enhance their economy in turn making sure that it would be able to repay on time.

EU and its member states lending to Syria

Engagement in Syria's reconstruction has been made contingent on realistic moves towards a negotiated conflict settlement and a political opening by the EU and its member states. They ought to modify their strategy to better reflect the conditions and difficulties that exist now. This entails, among other things, improving the targeting of humanitarian aid, lifting some sectoral sanctions, and assisting in the restoration of fundamental infrastructure, including in regions under the control of the Syrian government. This would be a more efficient way to improve living conditions and prevent further cuts to public services.

Past wars and armed conflicts offer understanding on how rebuilding of a nation's infrastructural, economic, and social need can be catered to by organising funds in the right manner. It is very important to understand in depth about the learnings from different countries and how they handled the post war period and bounced back to pre-war levels or are making great strides in reaching and improving their old policies and methods.

[101] "Reconstruction in Syria", Stiftung Wissenschaft und Politik publications, 2020. Link
[102] "The economic transition in Armenia", International Monetary Fund, July 2001. Link

08

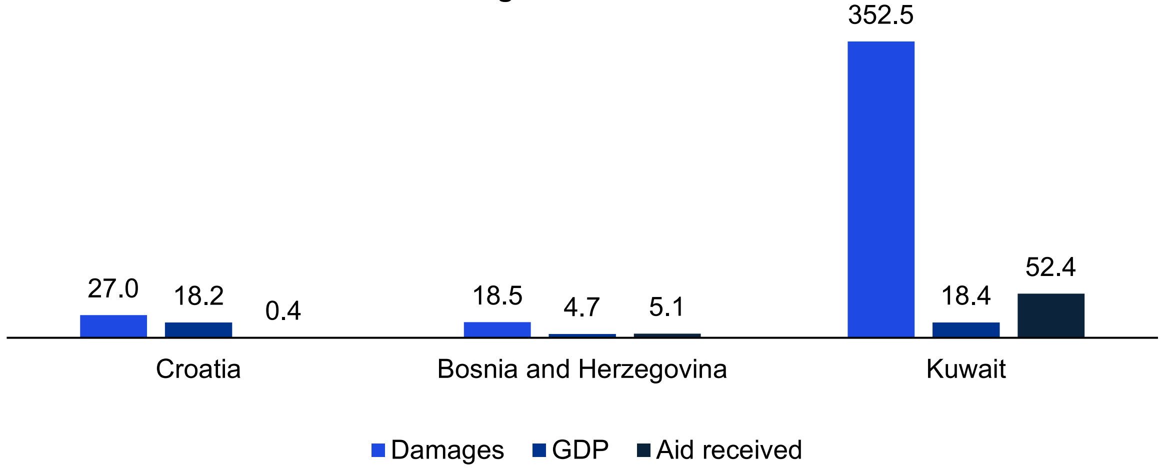
Building back the economic resilience: Lessons from Countries That Rose from The Ashes of War

8 Building back the economic resilience: Lessons from Countries That Rose from The Ashes of War

With six months into the war, Ukraine is already etching a plan to restore the local infrastructure and economy. Rebuilding Ukraine would involve certain key components such as identifying the priority economic sectors, ensuring security, evaluate the financing options, work on technological innovations, and prepare for energy efficient buildings. The country can take inspirations from certain European and Asian countries that have recovered from crippling wars.

An important aspect for a country to consider during its reconstruction efforts is the ratio of the aid received to its GDP.

Figure 25: Damages, GDP and aid received by Croatia, Bosnia and Herzegovina and Kuwait



8.1 Croatia's Social and Economic Recovery Project (CSERP)

The Croatian War of Independence, fought from 1991 to 1995, severely affected the country's economy. The official figures estimated the damages at 180,000 destroyed housing units with 25 percent of the economy destroyed and US$27 billion of material damages[103]. By 1994, Croatia rapidly transitioned into a de facto war economy, with the military consumption rising to as much as 60 percent of the total government spending[104].

The partnership between Croatia and World Bank started right after Croatia's independence from former Socialist Federal Republic of Yugoslavia in June 1991. The assistance included US$204 million for Emergency Transport and Mine Clearing Project of 1996 which helped in the reconstruction of roads, bridges and rail networks in Croatia. In the same year, Coastal Forest Reconstruction and Protection project for restoration of forest areas received fund worth US$84 million to promote tourism to pre-war levels. Another reconstruction project for Eastern Slavonia, Baranja, and Western Srijem, for repair and rebuilding of war damaged water infrastructure received support of US$81.2 million from

* Note: Areas of Special State Concern or ASSC in Croatia are areas of relative underdevelopment compared to the rest of the country in which Croatian Government implements certain policies aimed at achieving balanced regional development

[103] "The period of Croatia within ex-Yugoslavia (1918-1941, 1945-1991)", Croatianhistory.net, Link

[104] "Eastern Europe and the Commonwealth of Independent States, 1999", Google Books, Link

World Bank. The World Bank also provided an aid of US$58 million to Health System Project for Croatia.[105]

Due to slow development progress, a post-conflict fund grant was launched by the World Bank in late 2000 which was among the first to drive regional development and community-based programs to support the social and economic recovery of war affected areas and acted as a bridge between short-term relief efforts and medium-term social and economic development. It was in this context that the Croatia Social and Economic Recovery Project (CSERP) was conceived by the World Bank with assistance from the Croatian government.

In 1996, a forum was created for the first time after the war, co-ordinated by the International Rescue Committee. The forum aimed to deal and resolve issues of traumatized participants based on their war experience and its induvial impact. It was also supported by an NGO called Udruga Mi that developed links with organisations across Croatia. The forum was facilitated twice in a year with the support of UNHCR (United Nations High Commissioner for Refugees), Open Society, OTI (Office of Transition Initiatives), OSCE (Organisation for Security and Cooperation in Europe), the Threshold Foundation and Norwegian, Danish, British, Dutch, and Belgian embassies.[106]

CSERP as a multi-sectoral project helped in the overall socioeconomic development of Croatia[107]:

The Croatia Social and Economic Recovery Project (CSERP) was a multi-sectoral project which catered to the socioeconomic development of Croatia's war-affected areas or 'Areas of Special State Concern' (ASSC)*. The project addressed sustainable development, poverty reduction and post-conflict reconstruction of the country's war-affected and disadvantaged areas. The project helped the growth of small- and medium-sized enterprises (SMEs) thereby generating employment opportunities as well as additional revenues. The livelihoods of the rural population which included domiciled populations, returnees, displaced persons, minorities, and settlers in 13 counties were vastly impacted under different initiatives of the project. It also helped strengthen the institutional capacities at the central, local and regional levels.

Components of the project and the funding structure[108]:

The project comprised of four components: (i) Community Investment; (ii) Demining; (iii) Institutional Development; and (iv) Project Management with different initiatives being rolled out as part of each.

1. Community Investment (Total funding of EUR36.5 million with IBRD's contribution of EUR23 million)

- The Community Investment Program was the heart of the CSERP. It funded works, goods, and services for demand-driven subprojects in Croatia's areas of special state concern.
- Subprojects were generated through a process of outreach in the ASSC, to make the population aware of the project, to encourage quality, and to foster processes of local development planning.
- Subprojects were proposed and implemented (depending on their nature) by local and regional self-governments (municipalities, towns and counties), co-operatives, small and medium enterprises (SMEs), public and private entities (such as schools, health centers, etc.) non-governmental organizations and community-based organizations in the areas of special state concern.

2. Demining (Total funding of EUR17 million with IBRD's contribution of EUR8.5 million)

- The Croatian government approved the National Mine Action Plan (NMAP) in October 2000. The objective of the NMAP was to remove mines and especially unexploded land mines by 2010 by increasing the number and capacity of mine clearance companies and by developing and monitoring new technologies.

[105] "Croatia and the World Bank group – 25 years of partnership", The World Bank, Link
[106] "Croatia and Balkans", CFOR, Link
[107] "The World bank document", Link
[108] "The World Bank document", Link

- The initiative funded services for demining and the provision of goods. The objective of this component was to ensure that community investment subprojects can achieve their intended potential without the risk of anti-personnel mine accidents.
- It also funded the removal of mines on a demand-driven basis and where the presence of mines would prevent the implementation of community investment subprojects.

3. Institutional Development (Total funding of EUR3.5 million with IBRD's contribution of EUR2.5 million)

- The institutional development initiative funded consultant services, equipment, and goods for capacity building for central, regional, and local authorities.
- It also financed the preparation of five Regional Operation 20 Programs, the standard planning instrument utilized by the EU.
- The initiative provided capacity building to staff involved in regional development at the Ministry of Sea, Tourism, Transport and Development. At the county level, the project supported and trained one person in each of the 13 counties in the ASSC in regional development, including project cycle management and EU procedures.

4. Program Management (Total contribution of EUR3.0 million with IBRD's contribution of EUR1.0 million)

- The program management initiative was built on the World Bank's experience in post-conflict reconstruction and therefore was consistent with OP 2.30 Development Co-operation and Conflict[109], "to support economic and social recovery and sustainable development through investment and development policy advice.
- This project addressed social cohesion and economic revitalization as mutually reinforcing development goals. The assessment conducted for the project indicated that agricultural co-operatives as well as associations suffer from a lack of social capital.
- The evaluation of the pilot phases funded under the **Post-Conflict Fund Grant** indicated that cooperatives may be a means of strengthening social capital by bringing together groups of people with common objectives and interests in a process of collective decision-making.

The project outcomes successfully met the social inclusion goals to support the economic and social revitalization of disadvantaged and war-affected areas [110]:

The CSERP successfully closed on 31 December 2010 with its objective of social inclusion fully met and was able to support the economic and social revitalization of disadvantaged and war-affected areas. The project yielded significant results in the 13 counties falling under the ASSC.

- There were 427 sub-projects which were successfully completed. Of these, 125 were for social inclusion; 67 for small community infrastructure; and 211 in support of SMEs, crafts, and cooperatives. Over 84,000 beneficiaries residing in the ASSC directly benefitted from the completed sub-projects.
- In terms of employment creation, 1,341 new jobs were created and an additional revenue of €11 million was generated by the SMEs, crafts activities, and cooperatives. A total of 763 women were directly employed, and 33,269 women were direct beneficiaries.
- The demining initiative resulted in 12.2 sq.km of agricultural land getting completely demined and ready for cultivation and harvest. This enabled people to safely use their land without any fear.
- 5,000 officials and civil society representatives were trained through a series of workshops in strategic regional planning, cost management, project management, business plans, and procurement.

[109] OP 2.30 is based on Post-Conflict Reconstruction: The Role of the World Bank (Washington, D.C: World Bank, 1998), endorsed by the Executive Directors as A Framework for World Bank Involvement in Post-Conflict Reconstruction, May 1997

[110] "Post conflict reconstruction"- Reliefweb; Link

8.2 Bosnia and Herzegovina's recovery program[111]

The war in Bosnia and Herzegovina took place from April 1992 until September 1995 between Serbia and Montenegro on one side, the Republic of Bosnia and Herzegovina on the other, and Croatia on the third. A peace agreement was signed under the mediation of the United States, Britain, France, Germany, and Russia. The losses were already estimated at US$50-70 billion – 15-20 times the GDP in the first year after the conclusion of the war.

The Priority Reconstruction Program (PRP)

The Government of Bosnia and Herzegovina, with the support of the World Bank, the European Bank for Reconstruction and Development (EBRD), and the European Union, and with the broad endorsement of the international donor community, was instrumental in preparing a Priority Reconstruction and Recovery Program (PRP), that required US$5.1 billion of external financing over the next three to four years post the conclusion of the war. The PRP, in the first post-war year aimed at kick-starting the economy and creating avenues of domestic production, jobs, and incomes that, in turn, would generate domestic resources to channel the reconstruction effort and enable the country to gradually reduce its dependence on foreign aid.

Several sectoral programs and projects were carried out as part of the PRP

Emergency Recovery Project

The project aimed at restoring Bosnia and Herzegovina's severely damaged productive capacity and rehabilitate key infrastructure facilities, to support economic activities, particularly in the enterprise sector, and to establish a minimum level of institutional capacity in the government to implement Bosnia and Herzegovina's reconstruction program. The project was also designed to ease severe hardships faced by the vulnerable groups of the population in the immediate post-war transition period.

Emergency Farm Reconstruction Project

The project was aimed at supporting the post-war reconstruction program for the agriculture sector. It was designed to help kickstart agricultural production, improve food security, and create employment and income for the war-affected rural population, including the return of displaced persons.

Water, Sanitation, and Solid Waste Urgent Works Project

The project was intended for: (i) restoring water, sanitation, and solid waste services to the population using piped water supply and water-borne sewerage systems to a level that would mitigate public health risk in priority areas: (ii) assisting the development of a long-term sector strategy and the details of an emergency program consistent with that strategy; and (iii) rebuilding and strengthening the sector institutions so that the improvements are sustainable.

Emergency Transport Reconstruction Project

The project addressed the reconstruction and rehabilitation of roads, bridges, tunnels, and railways; civil aviation rehabilitation, including reconstruction of the Sarajevo Airport, equipment for the Mostar Airport, and air navigation system equipment; and, rehabilitation of the urban transit systems.

[111] "Bosnia and Herzegovina - The Priority Reconstruction Program", The World Bank, Link

Emergency Education Reconstruction Project

The project aimed at helping the restoration of classroom conditions thereby enabling effective teaching and learning, particularly in primary schooling, and building government implementation capacity at the entity, canton, and municipal levels.

Essential Hospital Services Project

The project was designed to support the strategies of the Ministry of Health for the medium-term to develop a modern, cost-effective, and fiscally sustainable hospital network. The project was expected to (i) strengthen essential hospital services, focusing on the most needy segments of the population; and (ii) establish and support the initial steps in health financing reforms.

Emergency Housing Repair and Reconstruction Project

The project aimed at supporting the government's effort to carry out urgent housing repairs on both publicly and privately owned housing, and contribute to the development of a framework to sustain the recovery and development of the housing sector through gradual introduction of cost recovery.

Emergency Electric Power Reconstruction Project

The project aimed at to restoring electricity services to acceptable levels in major cities for residential and industrial use by focusing on electric power generation and distribution, increasing coal production to supply fuel required for thermal power plants, reconfiguring the electric power network, and enhancing the institutional capacity and helping restructure the electric power and coal sectors.

The Priority Reconstruction Program (PRP) had a profound impact across different sectors

Transport: The major transport bottlenecks were resolved, and the most essential road corridors and bridges were repaired along with the reopening of the Sarajevo Airport. The rail and urban transport were resumed and maintenance activities were re-established.

Electric Power and Coal: The energy sector played a key role in the pre-war economy of Bosnia and Herzegovina, producing 8 percent of the GDP.

The PRP aimed at restoring electric power generation, transmission, and distribution to a nominal level required for normal economic activity at the lowest cost. With certain investments, power sales to distribution companies reached 87 percent of the pre-war levels in 1998.

Telecommunications: Bosnia and Herzegovina had about 15.3 lines per 100 people, comparable with other republics. The war damaged switching and transmission equipment and reduced the installed phone lines by more than 30 percent. The impact on the international lines was more than 90 percent.

The PRP aimed at restoring the disrupted services to pre-war levels and modernize the backbone transmission infrastructure and restore international and inter-entity communication links. The services were restored to the pre-war levels within a span of just three years from 1996 to 1999.

Housing: An estimated 30 percent of the country's largely privately owned housing stock was damaged or destroyed during the war.

The PRP aimed at creating favorable conditions towards facilitating return as well as rapidly expand the usable housing stock for the entire population. Almost 100,000 private houses and public apartment units received repair assistance along with the generation of employment and business activities.

Water and Waste Management: The municipal water supply and sewerage networks served 75 percent of the urban population before the war. By 1996, half of the population no longer had access to 24-hour water supply and suffered from clogged sewer and drainage systems.

The PRP aimed at immediately restoring water services and began upgrading the sewerage and solid waste services to strengthen the sector institutionally and financially. With certain investments, average urban water supply coverage nearly reached nearly the pre-war levels.

Education: The country had a well-developed education system before the war which was severely affected by damages to schools and disruption of services.

The PRP aimed at rebuilding the primary education facilities while providing support for teachers' salaries, school maintenance, and educational tools. Most primary facilities were rebuilt and teaching and learning at all levels was being carried out at minimally acceptable standards.

Health: Before the war, the country had a strong network of healthcare facilities, dominated by large hospitals and specialized clinics. The war not only caused significant damages to Bosnia and Herzegovina's large network of healthcare facilities but also directly affected the population. After the war, hundreds of thousands of people were left with physical injuries and disabilities as well as psychological disorders such as post-traumatic stress diseases.

The reconstruction of hospitals and establishment of rehabilitation centers for war victims advanced under the PRP with the provision of drugs and supplies.

8.3 Kuwait's rebuilding strategies based on reconstruction of the petroleum sector and technology upgrades[112]

In approximately five years, Kuwait's economic performance recovered to surpass what existed before the war.

Upon the end of the war, the government established martial law and announced emergency conditions. Its primary focus included the rehabilitation of infrastructure, rebuilding the petroleum sector, restoring economic and social services, and addressing the structural weaknesses of the Kuwaiti financial system. Adopted measures achieved internal security, allowed foreign involvement in military and reconstruction efforts, achieved fiscal rebalancing, and changed the labour composition. Reform also encouraged privatization and financial stabilization.

Kuwait now stands once again as one of the world's largest petroleum producers and the 4th largest exporter with the 24th highest per capita GDP in the world

Approach towards reconstruction

The most urgent priority for Kuwait was extinguishing the fires, which Kuwait Petroleum Corporation (KPC) commenced only six days after liberation with the help of contracted international experts and supporting companies. The process involved military assistance to clear the petroleum fields of unexploded land mines and munitions that were placed by Iraqi troops before their retreat.

Rehabilitation of petroleum industry:

The rehabilitation of the petroleum industry was another urgent priority for Kuwait between 1991 and 1992:

- Expenditures between US$8 billion and US$10 billion were planned over 2 years solely to increase production to over 2 mbpd* (PAAC, 1999). Petroleum production resumed by June 1991 and local refineries were in operation by August 1991.
- By mid 1992, Kuwait managed to repair or redrill the existing wellheads. By 1993, less than 2 years after the war, petroleum production was at 1.9 mbpd, exceeding the pre-war level of 1.4 mbpd, and its refinery capacity was fully re-established within another year.

*Note: mbpd means thousand barrels per day

[112] "An Extraordinary Recovery: Kuwait Following The Gulf War, The University of Western Australia, Link

The rebuilding of the petroleum industry allowed the economy to grow rapidly. The pre-war level of GDP per capita was again achieved by the end of 1992 and thereafter surpassed. Between 1994 and 2008, the Kuwaiti real GDP grew at an average rate of 5.2 percent per year. Only in 2009 did Kuwait experience a growth setback with the onset of the global financial crisis. On a per capita basis, the first 2 years following the war appear particularly impressive, largely due to the initial loss of much of its population.

Kuwait's terms of trade benefited from stability in the global petroleum price following the war.

Sources of financing:

The reconstruction process relied upon **three primary sources of financing:**

Accumulated savings from Kuwaiti pre-war fiscal surpluses and SWF contributions

Kuwait spent approximately US$40-US$50 billion of its foreign investment portfolio. The production and exportation of petroleum allowed Kuwait to resume capital savings.

Foreign debt: Partially through inward foreign investment

The Kuwaiti government raised its debt ceiling to US$33 billion as part of the first phase of a five-year plan, the largest debt in the history of the country. This collective debt reversed the country's pre-war net lender position for 5 subsequent years.

Iraqi payments mandated by the UN Compensation Commission

The Food-for-Oil program required Iraq to make regular payments of 30 percent of its petroleum export revenues over a number of years to a UN fund. War reparations were managed by the UN and paid directly to Kuwaiti claimants, both individuals and (private or public) companies.

Factors favourable to recovery

The major contributor on the policy front after the war was the government's focus on reconstructing the petroleum sector and the technology upgrades that were embodied in the new investment. Apart from the ability to generate petroleum wealth, this recovery was made possible through the interaction of the following three indispensable factors:

Political economy

- Migration of various tribes within central Arabia to the area forming contemporary Kuwait.
- The political system maintained the local unity and sovereignty strengthened loyalty and cohesiveness, regardless of prewar political challenges to.
- This led to large welfare payments for Kuwaiti citizens and large governmental expenditures during and after the war, despite the cessation of government revenue.

Policy reform and capital accumulation

- Most crucial economic policy that helped a recovery was its savings of petroleum rents accumulated in its SWF.
- Other important policies include new macroeconomic policies, trade liberalization and labor policies, enhancement of the role of the private sector through microeconomic reforms.
- Kuwait faced a stark labor shortage following the war. New policies were intended to reduce the dependence on foreign labor and to establish a pool of local skilled workers.

Global petroleum-market response

- Saudi Arabia, the world's largest petroleum producer, exercised its self-assigned role as a stabilizer of global petroleum prices by increasing production to restore prewar levels. Other members of OPEC, namely Venezuela, Algeria, and Nigeria, as well as Qatar and the UAE also increased production.
- Non-OPEC production also increased, which further contributed to stabilizing the market.

The profound impact of the rebuilding strategies was prominently witnessed with the quick economic recovery

The rebuilding of Kuwait's petroleum industry enabled the country's economy to grow at a rapid pace. The pre-war level of GDP per capita was achieved by the end of 1992 and thereafter surpassed. Between 1994 and 2008, the Kuwaiti real GDP grew at an average rate of 5.2 percent per year. On a per capita basis, the first two years following the war was particularly devastating, primarily due to the initial loss of much of its population. However, when the displaced population was subsequently restored in 1999, the level of per capita GDP fell only temporarily. On an optimistic note, the negative macroeconomic effects of the war reversed within just a few years as Kuwait's terms of trade gained from stability in the global petroleum prices following the war.

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