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Audit of War Damage and Overview of Ukraine's Budget for 2023

PMC RC stands firmly with Ukraine, supports its sovereignty and territorial integrity, and condemns Russia's unprovoked and unjustified military aggression against Ukraine. We continue to maintain our long-standing commitment to support Ukraine's democratic and economic progress.

The unprovoked Russian invasion of Ukraine has shattered the lives of millions of civilians and destroyed dozens of Ukrainian cities. The damage has been enormous, with only some of it economically measurable. While we cannot assess the true cost of thousands of lives being taken, we can approximately measure the damage done to Ukraine's infrastructure, social, and other sectors. Indeed, a damage assessment was carried out in the National Council for the Recovery of Ukraine by the Kyiv School of Economics with the Ministry of Communities and Territorial Development,[1] which is discussed in this bulletin alongside the revised 2023 budget for Ukraine.

The report includes assessments and estimations of the following: **Damages** – the destruction of physical assets existing in the affected area; **Losses** - reduced value and number of flows (sales, production, etc.) attributed to external factors and temporary changes in economic flows due to the war;[2] and **Recovery needs** – the cost of replacing and repairing damaged assets as of June 2022 in accordance with the Build Back Better principle.[3] This assessment is based on the approach taken by the World Bank[4] and is valid as of 13 June 2022.

To investigate war damages, losses, and reconstruction needs thoroughly, it is essential to look into each of the mentioned indicators including a breakdown of different sectors (social, infrastructure, and productive) to deliver a broader perspective.

Social sector breakdown, as of 13 June 2022, US$ bln

Sector	Damages	Losses	Reconstruction needs
Housing	36.8	2.7	57.9
Education	3.5	2.1	4.4
Health	1.5	2.7	2.3
Social services	0.2	6.4	6.6
Culture and tourism	0.7	4.3	1.6
Total	**42.7**	**18.2**	**72.8**

Source: 'Audit of war damage'

The social sector consists of five subsectors: housing; health; education; social services; and culture and tourism. Total damages to the sector in the first four months of the war amounted to US$42.7 billion, while losses accounted for US$18.2 billion, with the sum of the two amounting to 153% of government revenue for 2021.[5] Meanwhile, the total reconstruction and recovery needs for the social sector added up to US$72.8 billion.

In terms of damage value, the housing sector was the worst affected subsector (US$36.8 billion) as colossal artillery and rocket shelling had caused massive destruction of the housing stock in Ukrainian cities. Furthermore, Russian hostilities destroyed and damaged more than 50% of houses in 23 cities, most of which were private houses and multi-apartment buildings. The need for repair and reconstruction of housing was foremost among reconstruction needs, at US$57.9 billion.

In terms of losses, the social services subsector ranked first with US$6.4 billion, attributed to the unequalled increase in potential recipients of social services (internally displaced people, orphans, people with disabilities, etc.) due to the war.

The infrastructure sector comprises five subsectors: transportation; vehicles; energy; utilities; and digital. Total damages to the industry in the first four months of the war amounted to US$37.3 billion, while losses accounted for US$32.9 billion, with the sum of the two adding up to 177% of the government revenue for 2021. Meanwhile, the total reconstruction and recovery needs for the infrastructure sector added up to US$52.6 billion.

Among infrastructure subsectors, transportation was one of the key targets of the Russian attacks of the first four months. In particular, road infrastructure was the most damaged in the transportation subsector alongside airports and railways. In the first four months of the war, around 24 000 km of road, 57 railway stations, and 19 airports and civilian airfields were damaged. The total damages to transportation infrastructure amounted to US$31.3 billion, with US$17.7 billion in losses and US$41.8 billion in reconstruction needs.

Infrastructure sector breakdown, as of 13 June 2022, US$ bln

Sector	Damages	Losses	Reconstruction needs
Transportation	31.3	17.7	41.8
Vehicles	2.3	0.2	4.6
Energy	1.8	11.6	3.5
Utilities	1.3	2.3	1.7
Digital	0.6	1.1	1
Total	**37.3**	**32.9**	**52.6**

Source: 'Audit of war damage'

Productive sector breakdown, as of 13 June 2022, US$bln

Sector	Damages	Losses	Reconstruction needs
Industry and business services	8	28	16.8
Agri sector and land resources	4.3	23.4	17.5
Commerce	2.1	23.3	3.9
Total	**14.4**	**74.7**	**38.2**

Source: 'Audit of war damage'

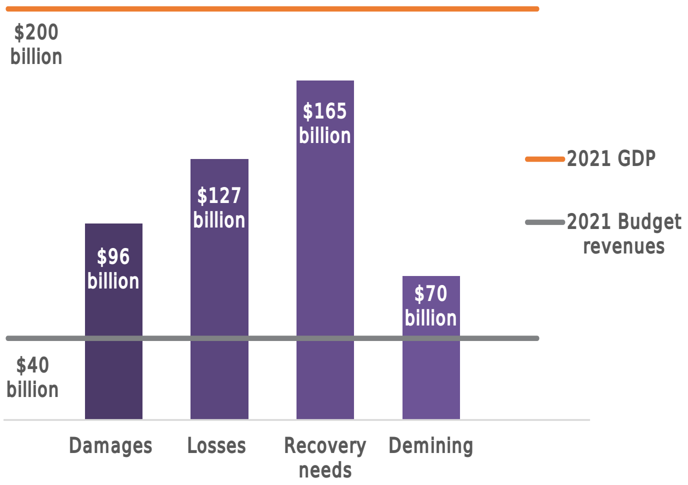
The productive sector comprises three subsectors: industry and business services; agri sector and land resources; and commerce. Total damage to the sector in the first four months of the war amounted to US$14.4 billion, while losses accounted for US$74.7 billion, with the sum of the two adding up to 224% of government revenue for 2021. Meanwhile, the total reconstruction and recovery needs added up to US$38.2 billion.

Unlike the sectors above, it is worth noting that the productive sector has suffered most from the losses, which is attributed to the retail aspect of the sector, making its revenues vulnerable to the economic conditions of the country. While the critical issue for industry and business services and commerce was a reduction of trade, for the agri sector and land resources it was a decrease in the annual crop production.

Overall, damages from the war amounted US$96 billion (representing 48% of Ukraine's GDP in 2021), most of which stemmed from residential buildings (39%) and infrastructure (33%). A significant proportion of the damage struck Ukrainian regions that were attacked directly, with Donetsk, Kharkiv, and Luhansk accounting for 25%, 18%, and 13% of the damages in monetary terms, respectively.

The total preliminary assessment of losses amounted to US$127 billion (63% of Ukraine's GDP in 2021), most of which belonged to industry and business services (23%), followed by the agri sector and land resources (18%), and commerce (18%).

Ukraine's recovery and reconstruction needs for the given period reached US$165 billion (83% of Ukraine's GDP in 2021), most of which were attributable to housing stock (35%), infrastructure assets (25%), agriculture sector operations (11%), and business assets and activities (10%) (*It is worth noting that the assessment does not cover other modernization projects unrelated to war damages).



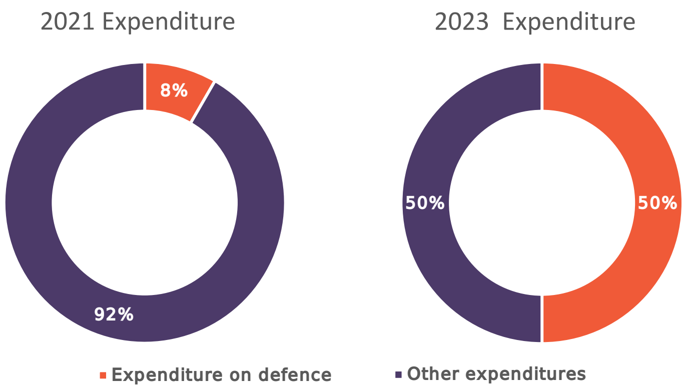
Source: 'Audit of war damage'

It is also essential to highlight one of the most critical factors in the recovery: demining, of which a comprehensive assessment needs to be completed. However, according to an assessment from the World Bank, demining territories (including forests and waterways) will require more than US$70 billion, which equates to 35% of Ukraine's GDP in 2021.

As the war damages are clearly enormous, it is essential to plan budget expenditures efficiently to deal with the ongoing war, which can be particularly challenging, with the ongoing military expenses in mind. On 3 November 2022, the Parliament of Ukraine approved the State Budget of Ukraine for 2023 at the second reading, coming with a plan for expenses, revenues, and altered expectations for macro indicators.[6]

In the revised budget for the year 2023, the forecast for real GDP growth was reduced by 1.4 pp (falling from the previous forecast of 4.6% to 3.2%). This was attributed to having to adjust to more conservative assumptions of recovery and the high-security risks of the continuation of Russian attacks on critical infrastructure and energy system facilities. On top of that, the inflation forecast was also modified, dropping by 2 pp (from 30% to 28%, YoY). It is also essential to highlight that since the expectations from international partners are no more optimistic regarding financial support, the expected exchange rate has dropped to UAH 45.8: US$ 1 (from UAH 50: US$ 1).

Revenues were also altered for the revised state budget for 2023 as the forecasted revenues increased by US$1.5 billion, amounting to US$36 billion. The main factors influencing this modification included a change in macro indicators and legal provisions regarding amendments to the Tax Code of Ukraine on fuel excise tax rates.[7] In addition, some of the general funds' revenue expectations have increased due to VAT on imports and funds transferred by the National Bank of Ukraine. However, it is worth noting that expectations have decreased for certain parts of the general funds' revenue (income tax, and VAT on Ukrainian goods).



Source: Government Portal of Ukraine, NBU

Expenditures increased (by US$1.8 billion) for the second reading, amounting to US$72 billion, making it 1% higher than the corresponding figure in 2021. Unsurprisingly, the largest share of expenses (50%) is committed to national security and defense, which only amounted to 8% in 2021. The increase in expenditures is foreseen to alleviate socio-economic issues, in particular pension payments, funds for liquidation of the consequences of armed aggression (covering the following areas: construction and repair of residential buildings, critical infrastructure, provision of housing for internally displaced persons and persons who lost their housing as a result of the hostilities, and purchase of school buses and special transport for healthcare institutions).

As a result, Ukraine's 2023 budget has a US$38 billion deficit (20.6% of GDP), making the Government of Ukraine dependent on the financial assistance of international partners. It is worth mentioning here that the budget deficit in 2021 amounted to US$6.6 billion, equating to 3.3% of GDP.

Though EU has already introduced a plan to distribute €18 billion in financial aid to Ukraine over the course of 2023, while The United States House of Representatives already approved a US$45 billion aid package for Ukraine, which will include military, economic and humanitarian assistance.[8] The EU package (which is still pending approval) will be issued as a long-term loan with favorable conditions to Ukraine, meaning that it will not be obligated to pay back the loan until 2033, while Member States cover the interest rates.

To sum up, the Russian invasion of Ukraine has destroyed millions of lives and caused colossal physical damages. In the first four months of the war, damages amounted to US$96 billion, while losses amounted to US$127 billion, together representing 112% of Ukraine´s 2021 GDP. Furthermore, the most damaged sectors (or subsectors) were housing, transportation infrastructure, industry and business services, and agriculture. Moreover, according to the 'Audit of War Damage,' as of 13 June 2022, recovery needs were equal to US$165 billion. However, according to the VP of the World Bank, recently-updated data suggest that total reconstruction needs after the war will equal €500-600 billion,[9] which is 15-18 times more than Ukraine's 2021 budget.

Furthermore, it is essential to optimize the scarce resources to deal with the enormous damages and simultaneously support the defense forces against the aggressor. Ukraine's budget for 2023 is mainly concentrated on financing national security and defense, while social support also remains a frontline concern. However, Ukraine's government has to address a record-breaking budget deficit of US$38 billion to provide the planned resources to its citizens with assistance from international partners who have already expressed willingness to arrange financial aid for Ukraine.

1 Source: https://www.kmu.gov.ua/storage/app/sites/1/recoveryrada/eng/audit-of-war-damage-eng.pdf
2 The starting point for estimating losses is the period from the beginning of the war (February 2022) to the moment of full recovery of the economy and infrastructure, complete resolution of social and humanitarian challenges arising from the war. Anticipatedmresumption of such business chains and processes will take more than 18 months, starting in June 2022. Thus, the total period for which indirect losses are calculated is 21 months (March 2022 - November 2023), with certain exceptions for industries where the recovery of economic activity will take longer.
3 The needs for economic recovery reflect a mutually agreed vision of the recovery strategy of Ukraine as a whole and of each sector of the economy in particular as an important prerequisite for the planning of the reconstruction process, which is designed to restore the country's economic capacity and solve the social and humanitarian challenges that arose as a result of the war. The assessment of Ukraine's recovery needs is based on estimates of damages and losses, described in the relevant sections.This assessment does not take into account the need to implement other modernization projects than related to the war time damages.
4 Sources: https://openknowledge.worldbank.org/handle/10986/19047; https://openknowledge.worldbank.org/handle/10986/19046; https://openknowledge.worldbank.org/handle/10986/19045
5 According to the preliminary data of the State Treasury Service of Ukraine, in 2021, the general fund of the state budget received UAH 1.084 trillion (US$39.7 billion). https://www.kmu.gov.ua/en/news/derzhbyudzhet-2021-za-sichen-gruden-2021-roku-do-zagalnogo-fondu-nadijshlo-1084-trln-grn
6 Source: https://www.kmu.gov.ua/en/news/verhovna-rada-ukrayini-uhvalila-derzhbyudzhet-na-2023-rik#:~:text=Revenues%20of%20the%20State%20Budget,special%20fund%20%2D%20UAH%20156%20billion.
7 As reported, in March 2022, the parliament zeroed out excise taxes on motor fuel in the country. On September 21, the Verkhovna Rada adopted a bill on the return of excise taxes on motor fuel. Source: https://en.interfax.com.ua/news/economic/861654.html
8 Source: https://www.euronews.com/my-europe/2022/11/14/ukraines-2023-budget-has-a-38-billion-gap-who-will-help-cover-it; https://www.voanews.com/a/us-patriot-missiles-new-45b-aid-package-for-ukraine/6889446.html
9 Source: https://bm.ge/ka/article/ukrainis-infrastruqturis-agsadgenad-600-miliardamde-iqneba-sachiro---wb/122043/

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Giorgi Khishtovani
Research Director
g.khishtovani@pmcginternational.com

Nika Kapanadze
Researcher
n.kapanadze@pmcginternational.com

Shota Matcharashvili
Research Assistant
sh.matcharashvili@pmcginternational.com