Herat Earthquakes 2023

Post-Disaster Needs Assessment

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Herat Earthquakes 2023

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Foreword

In October 2023, a series of devastating earthquakes struck Afghanistan's Herat Province, tragically claiming over 1,500 lives and exposing the region's vulnerabilities. As part of our collective response, the UN in Afghanistan – alongside our partners at the World Bank, the European Union, and the Asian Development Bank – launched a Post-Disaster Needs Assessment (PDNA) to provide a comprehensive analysis of the impact of the disaster on the people and the region.

The Herat PDNA – covering nine districts, nine sectors and four cross-cutting areas – provides an assessment of the resources required for recovery and reconstruction by estimating the damage, loss, and needs. It reports direct physical damages of US$217 million and broader losses of US$78.9 million, highlighting the critical need for US$402.9 million to support essential recovery and rebuilding efforts in Herat.

We are committed to addressing the multifaceted challenges faced by the people of Herat. The earthquakes have left a profound impact on housing, education, and agriculture, deeply affecting the lives and livelihoods of the local population. Over 275,000 people, including vulnerable groups such as pregnant women, children, and persons with disabilities, have been directly impacted. The situation of women and girls, who face exacerbated gender-based challenges and restrictions, is particularly alarming.

In the recent past, Afghanistan has been facing cascading crises resulting in high levels of multidimensional deprivation, low growth, and urgent humanitarian needs. The assessment cautions about persistent widespread poverty, job scarcity, high prevalence of mental health diseases, banking sector instability, and climate vulnerability, further exacerbating Afghanistan's ongoing challenges.

However, amidst these challenges lies an opportunity for transformation. The assessment underscores the need to transition from immediate relief to sustainable, longer-term recovery. It advocates for community inclusion in the recovery process, integration of the concept of building back better, including resilient rehabilitation of critical infrastructure, service restoration, disaster risk reduction, improvement of livelihoods and social protection, with a strong emphasis on empowering women.

The United Nations in Afghanistan and partners have been working tirelessly with the affected communities and de facto local authorities to provide basic needs and humanitarian assistance to support resilient recovery in the region. We mobilised resources to quickly respond to the people in need, reaching more than 434,900 people with immediate assistance by December 2023. This support included the provision of emergency shelter, food, healthcare, protection, water, sanitation and hygiene, and multi-purpose cash assistance, among other forms of support. Now, these communities require durable solutions to rebuild their homes, villages and livelihoods.

As we mobilize to support the timely and longer-term recovery of the region, our objective is clear: galvanize national and international support for affected communities to rebuild with resilience to withstand future shocks.

We hope this assessment serves as a guiding light, leading us towards a more resilient and inclusive future.

Acknowledgments

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UNDP Afghanistan

Abbreviations and Acronyms

ACCI	Afghanistan Chamber of Commerce and Investment
ACG	Afghanistan Coordination Group
ADB	Asian Development Bank
AFN	afghani
AHS	Afghanistan Health Survey
ALCS	Afghanistan Living Conditions Survey
ANDMA	Afghanistan National Disaster Management Authority
ANDUS	Afghanistan National Drug Use Survey
ARTF	Afghanistan Resilience Trust Fund
ASC	Afghan Structural Code
AWCCI	Afghanistan Women Chamber of Commerce and Industries
BBB	build back better
BPHS	Basic Package of Health Services
CBE	community-based education
CCA	climate change adaptation
CCI	cultural and creative industries
CDC	Community Development Council
CHC	comprehensive health center
CHE	current health expenditure
DABS	Da Afghanistan Breshna Sherkat
DFA	de facto authorities
DHS	Demographic Health Survey
DRR	disaster risk reduction
EO	explosive ordnance
EOC	Emergency Operations Center
EPHS	Essential Package of Hospital Services
EPR	Employment-to-Population Ratio
EU	European Union
FGD	focus group discussion
FAO	Food and Agriculture Organization of the United Nations
GBV	gender-based violence
GDP	gross domestic product

GiHA WG	Gender in Humanitarian Action Working Group
GIS	Geographic Information Systems
GRADE	Global Rapid Post-Disaster Damage Estimation
ha	hectare
HBDA	Housing and Building Damage Assessment
HCT	Humanitarian Country Team
HER	Health Emergency Response
HP	health post
HRP	Humanitarian Response Plan
HSTS	Health Sector Transitional Strategy
ICH	intangible cultural heritage
IDP	internally displaced person
IE&LFS	Income, Expenditure & Labour Force Survey
OHPM	Organization for Health Promotion and Management
ILO	International Labour Organization
IOM	International Organization for Migration
IPC	Integrated Food Security Phase Classification
km	kilometer
m	meter
MCM	Mass Casualty Management
MICS	Multiple Indicator Cluster Survey
MHT	Mobile Health Team
MMI	Modified Mercalli Intensity
MoPH	Ministry of Public Health
MPCA	multipurpose cash assistance
MPHSS	mental health and psychosocial support
MPI	Multidimensional Poverty Index
MRRD	Ministry of Rural Rehabilitation and Development
MSME	micro, small, and medium enterprise
MSRAF	Multi-Sectoral Rapid Assessment Form
mW	magnitude
NDMC	National Disaster Management Commission
NEPA	National Environmental Protection Agency
NFI	non-food item
NGO	nongovernmental organization
NSIA	National Statistics and Information Authority
OCHA	United Nations Office for the Coordination of Humanitarian Affairs
ODR	Owner-Driven Reconstruction
OHPM	Organization for Health Promotion and Management
PDMC	Provincial Disaster Management Commissions
PDNA	Post-Disaster Needs Assessment
PHC	primary health care
RCC	Reinforced Cement Concrete

SAR	synthetic aperture radar
SME	small and medium enterprise
SOP	Standard Operating Procedure
sq	square
SSI	subsistence-insecurity index
TLM	teaching and learning material
TLS	temporary learning spaces
TVET	technical and vocational education and training
UN	United Nations
UNDP	United Nations Development Programme
UNFPA	United Nations Population Fund
UNICEF	United Nations Children's Fund
UNMAS	United Nations Mine Action Service
UNODC	United Nations Office on Drugs and Crime
UNOPS	United Nations Office for Project Services
WASH	water, sanitation, and hygiene
WFP	World Food Programme
WB	World Bank
WHO	World Health Organization
WoAA	Whole of Afghanistan Assessment

Disclaimer

Based on the key findings on damages, losses, and needs, the Post-Disaster Needs Assessment (PDNA) proposes a recovery strategy in alignment with the principles and priorities set out in the Afghanistan Coordination Group's (ACG) Framework for International Partner Support in Afghanistan 2023–2025 (ACG Framework) and the complementary principles and considerations for support to Basic Needs and Livelihoods in Afghanistan. The Framework supports a clear, coordinated, principled, and cohesive approach across ACG partners while recognizing that each member will determine individual engagement approaches. Notably, the PDNA considers the promotion of women's empowerment, climate resilience, and inclusion and participation of those affected by the earthquakes, including the most vulnerable and marginalized.

Any potential engagement with the DFA (including the requirement of having any such engagement) and contemplation of any capacity building activities, if the activities would be supported by donor(s), will follow the internal protocol and approvals of each donor and will be considered on a case-by-case basis by each donor.

As an overall picture of the effects of the earthquakes on the population, physical assets, infrastructure, and service delivery, it is not a substitute for in-depth sector-specific assessments. Maps are for illustrative purposes only. Names and boundaries do not imply official endorsement or acceptance by the United Nations, World Bank, the European Union, and Asian Development Bank. The report uses the exchange rate US$1 = AFN69.28.

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Volume A

Executive Summary

Photo Credit: UNDP Afghanistan

Introduction

Four magnitude (Mw) 6.3 earthquakes on October 7, 11, and 15, 2023, in Herat Province in Afghanistan led to an unprecedented disaster and destruction. The earthquakes took the lives of more than 1,500 people and injured over 2,600. Following the earthquakes, the United Nations (UN) with the United Nations Development Programme (UNDP) as PDNA Technical Lead, the World Bank (WB), the European Union (EU), and the Asian Development Bank (ADB) launched the Herat Earthquakes Post-Disaster Needs Assessment (PDNA). The objective of the Herat PDNA is to estimate the impact of the earthquakes on physical assets and service delivery in the most affected areas. The PDNA covers nine districts with about 2.2 million inhabitants, of whom 275,256 (around 13 percent) were directly impacted by the earthquakes, including over 142,000 women and over 133,000 men. The assessment also looks at the macroeconomic and human impact of the earthquakes on economic outlook and the population's well-being. It provides preliminary estimates for the recovery of sectors to meet critical basic human needs, taking into account the needs of the most vulnerable groups.

6.3
magnitude (Mw) earthquakes

Herat
Province

7, 11, and 15
October 2023

275,256 inhabitants affected
2,188,474

Around **13%** directly impacted from the **9 districts** covered by the PDNA

Humanitarian Response

The Herat Earthquake Response Plan led by the United Nations Office for the Coordination of Humanitarian Affairs (OCHA) estimated humanitarian assistance needs to address the critical, time-sensitive needs of the most vulnerable populations at US$93.6 million (covering the period from October 2023 to March 2024). The UN, WB, non-governmental organizations, and implementing partners are providing emergency relief and humanitarian assistance and lifesaving immediate basic human needs support to the affected population with contributions by the EU, ADB, and other members of the international community. UN organizations, NGOs and other implementing partners who are implementing the support to the affected people are coordinating with the de facto authorities (DFA), including the de facto Provincial Governor, the de facto Ministry of Economy, the de facto Ministry of Refugees and Repatriation, and the de facto Afghanistan National Disaster Management Authority, as well as their respective departments at the subnational level.

Initial relief assistance provided by the UN and implementing partners includes emergency shelter and basic household items; provision of trauma care, referrals to medical facilities, provision of medical kits/supplies and equipment, as well as mental health and psychosocial support services; therapeutic and supplementary feeding for those acutely malnourished, as well as malnutrition screenings; dignity kits; water trucking, latrine construction, and hygiene kits; food commodities and cash packages; emergency repairs to damaged *kariz* (traditional underground gravity-based spring water systems) and local irrigation systems; and emergency livestock protection including safe burial of animal carcass, emergency animal feed, water, animal-health services, and animal shelters.

The scale of the disaster requires strategic coordination to effectively link and transition from humanitarian response to recovery. An assessment of the full extent of the damage, destruction, and human impact across all major sectors is considered imperative to timely lay the foundations for early recovery, to build back better, and help people resume their disrupted lives. The recovery strategy set out in the PDNA seeks to build on and complement the humanitarian response.

Disaster Context

The earthquakes in Herat have hit vulnerable communities with limited resilience to handle multiple concurrent shocks. The province has been one of those hosting the largest numbers of internally displaced persons (IDPs) in Afghanistan. The displacement due to conflict and drought has had serious impacts on access to services, land, and shelter, and has resulted in unhealthy coping mechanisms. The disaster has further exacerbated insufficient levels of service delivery that predate the earthquakes. In addition, sector specific and ad hoc restrictions by the DFA continue to impact and at times delay the delivery of assistance.

Already suffering from decades of conflict and instability, Afghanistan has seen its human rights, governance, humanitarian, and development situations deteriorate sharply after the Taliban takeover in August 2021. While there has been a notable improvement in the security situation, extremist and insurgent groups are still active and lingering tensions and grievances pose threats to stability in the country and threaten the international community and its ability to deliver assistance in a safe and secure manner. Since August 2021, the DFA have issued decrees restricting women's and girls' access to education and public spaces as well as their participation in the basic needs response. These edicts have compounded the humanitarian, economic, and mental health crises affecting women and girls. The country's economy contracted by about 30 percent between 2020 and 2022. While significant international donor assistance has mitigated some economic decline, the economy has not recovered to its pre-2021 levels and prospects are not favorable.

Since seizing power, the DFA have focused on the transition from insurgency to administration, despite lacking international recognition. Their restrictive policies on women's political, social, and economic rights, and access of women and girls to education and work, as well as inclusivity of the governance structures, violations of human rights and freedom of speech, and increased interference in the delivery of international assistance are the primary barriers preventing members of the international community from considering a return to broader development support. Afghanistan ranks as the world's seventh most vulnerable country to climate change.[1] As a compounding challenge, since September 2023, hundreds of thousands of Afghans, most of whom are women and children, are being repatriated from Pakistan and Iran to a country struggling to absorb the high number of returnees.

To help ensure principled delivery of interventions, including the participation of and for the benefit of women beneficiaries, agencies and implementing partners may liaise with the DFA at the technical level to secure local arrangements. The integrated delivery of interventions across sectors, e.g., delivery of psychosocial support interventions in less sensitive programming areas such as health, reduces the need to renegotiate agreements for principled assistance to meet recovery strategy targets. In a resource constrained environment, community engagement, including with local nongovernmental decision-makers, will be paramount to avoid exacerbating tensions over intervention delivery. This may include hiring of project staff, including women, from the affected areas.

Key Findings

Damages
US$217 million

Losses
US$78.9 million

Needs
US$402.9 million

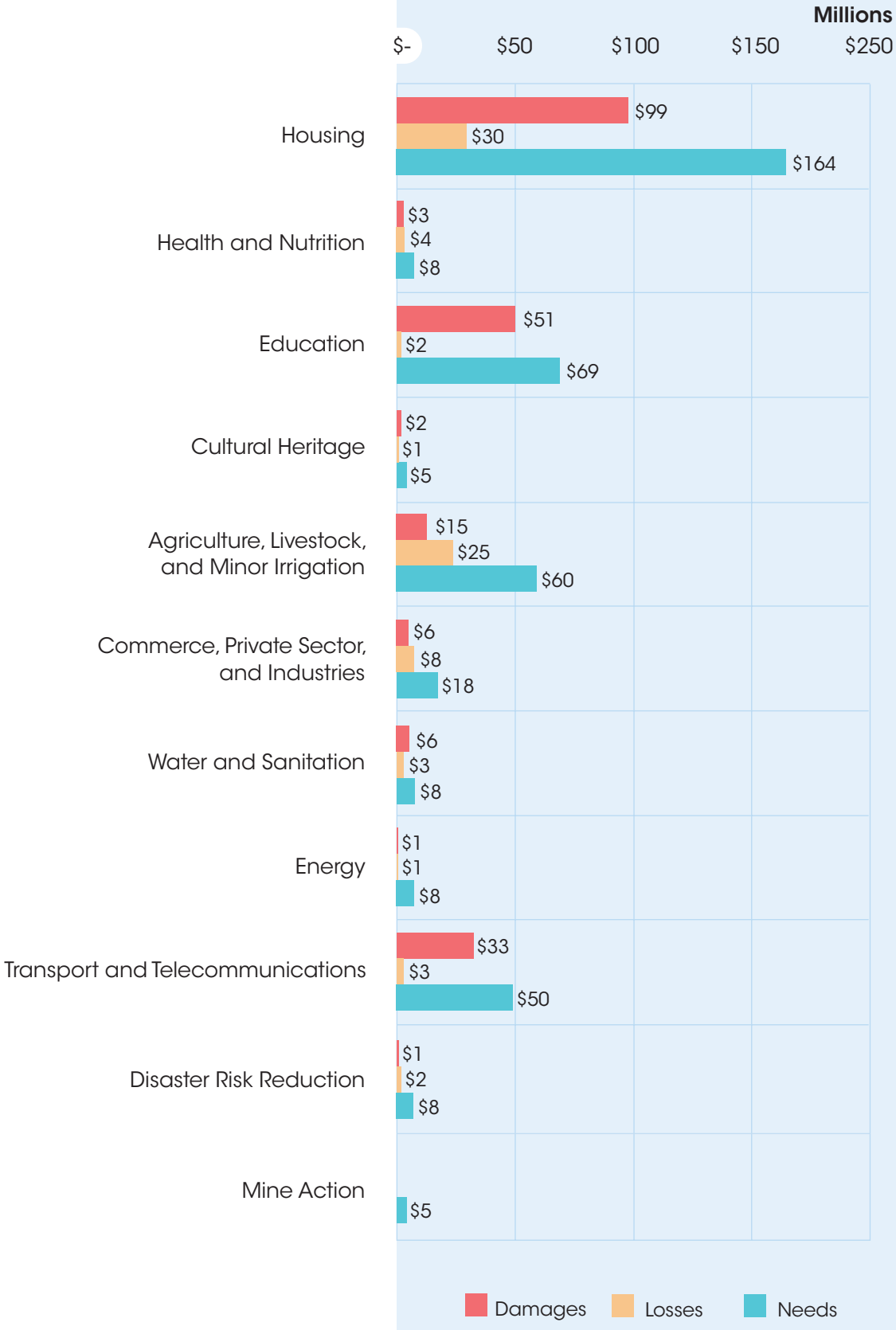
The most affected sectors in terms of aggregate damage and loss are housing, education, agriculture, livestock, and minor irrigation, and transport and telecommunications. The most affected districts include Herat, Injil, and Zindajan.

Reconstruction and recovery needs for the nine assessed districts are estimated at US$402.9 million, with needs for one year, two to three years, and over three to five years estimated at US$154.4 million, US$206.9 million, and US$41.6 million, respectively. The largest needs that require the most recovery financing pertain to housing at 41 percent of the total recovery needs, followed by education with 17 percent, agriculture, livestock, and minor irrigation at 15 percent, and transport at 12 percent.

Table 1: Summary of Damages, Losses, and Needs

SECTOR	Effects		Needs				
	Damages (US$)	Losses (US$)	0-12 Months (US$)	1-3 Years (US$)	3-5 Years (US$)	Total Needs (US$)	Share of Total
Social Sectors							
Housing	98,570,500	30,106,600	49,337,251	115,120,253	-	164,457,504	41%
Health and Nutrition	3,475,200	3,880,543	6,421,400	1,574,000	-	7,995,400	2%
Education	50,810,730	2,416,137	35,981,842	28,015,459	5,463,481	69,460,782	17%
Cultural Heritage	2,450,000	575,000	700,000	700,000	3,375,000	4,775,000	1%
Social Sectors Total	**155,306,430**	**36,978,280**	**92,440,493**	**145,409,712**	**8,838,481**	**246,688,686**	**61%**
Productive Sectors							
Agriculture, Livestock, and Minor Irrigation	14,575,117	24,641,964	37,460,500	17,842,500	4,200,000	59,503,000	15%
Commerce, Private Sector, and Industries	5,624,000	8,264,000	6,863,000	11,156,000	-	18,019,000	4%
Productive Sectors Total	**20,199,117**	**32,905,964**	**44,323,500**	**28,998,500**	**4,200,000**	**77,522,000**	**19%**
Infrastructure Sectors							
Water and Sanitation	6,221,366	3,192,295	1,587,600	6,350,404	-	7,938,004	2%
Energy	1,082,483	6,89,530	2,764,855	2,843,200	2,500,000	8,108,055	2%
Transport and Telecommunications	32,877,766	3,275,950	5,806,693	19,760,852	24,701,066	50,268,611	12%
Infrastructure Sectors Total	**40,181,615**	**7,157,775**	**10,159,148**	**28,954,456**	**27,201,066**	**66,314,670**	**16%**
Cross-Cutting Sectors							
Disaster Risk Reduction	1,385,600	1,863,232	2,774,120	3,505,000	1,400,000	7,679,120	2%
Mine Action	-	-	4,702,667	-	-	4,702,667	1%
Cross-Cutting Sectors Total	**1,385,600**	**1,863,232**	**7,476,787**	**3,505,000**	**1,400,000**	**12,381,787**	**3%**
GRAND TOTAL	**217,072,761**	**78,905,251**	**154,399,929**	**206,867,668**	**41,639,547**	**402,907,143**	**100%**

Figure 1: Total Damages, Losses, and Needs by Sector (in US$ million)



PDNA Objectives and Guiding Principles

The overall objectives of the PDNA are to (i) estimate the impact of the earthquakes and recovery needs, including the financial costs for the restoration of basic services and the repair or rebuilding of basic infrastructure and assets in the most affected and priority sectors; (ii) facilitate the recovery of living conditions and livelihoods of the most affected population, recommending strategic and comprehensive recovery solutions; and (iii) promote and inform enhanced resilience in Afghanistan.

The PDNA incorporates principles of a human-rights based approach, social justice, inclusion, and dialogue, do no harm, leave no one behind, gender equality, sustainable development, and improving social, environmental, and physical resilience with a "building back better" approach.

The specific objectives of the PDNA are to (i) assess sector-wide effects of the earthquakes in Herat; (ii) assess and estimate the overall socioeconomic impact of the earthquakes on the people and economy; (iii) identify priority needs for affected households and critical sectors of the economy with a particular focus on resilient recovery and develop a recovery strategy; (iv) review community-level disaster risk reduction policies and structures in place to deal with disasters and recommend measures to strengthen these in the recovery; and (v) provide the basis for mobilizing resources for recovery, including leveraging existing pooled funding mechanisms in Afghanistan.

Scope

Temporal

Damages and losses were calculated against the actual or estimated pre-earthquake baseline of physical assets. Damage data were collected between October 18 to November 11, 2023.

Geographical

The PDNA covers nine districts in Herat Province most affected by the earthquakes: Ghoryan, Gulran, Guzara, Herat, Injil, Karukh, Kohsan, Kushk, and Zindajan.

Sectoral

The PDNA encompasses analysis of macroeconomic and human impacts; nine sectors: Housing; Health and Nutrition; Education; Cultural Heritage; Agriculture, Livelihood, and Minor Irrigation; Commerce, Private Sector, and Industries; Water and Sanitation; Energy; Transport and Telecommunications; and four cross-cutting areas: Employment, Livelihoods, and Social Protection; Disaster Risk Reduction; Gender; and Mine Action.

Timeline of the **PDNA**

7, 11 October 2023	Mw 6,3 earthquakes in Herat Province
11 October 2023	Launch of GRADE
15 October 2023	Mw 6,3 earthquake in Herat Province
18 October 2023	Launch of the Herat PDNA with UNDP, World Bank, ADB, and EU
18 October – 11 November 2023	PDNA Data Collection
23 October 2023	Completion of GRADE
11 November – 03 December 2023	Data Analysis, and Report Drafting
14 December 2023	Presentation of (Preliminary) Key Findings to UN Country Team and EU
22 December - 14 January 2024	Revision and updating chapters; Internal and External, Conflict Lens, and Gender Peer Review
15 December - 08 February 2024	Report Finalization
21 February 2024	Publication of Herat PDNA Report

Recovery Strategy

The Herat earthquakes 2023 recovery vision is set out as follows: Achieving an inclusive recovery in areas affected by the earthquakes by adopting a people-centric and integrated approach, fostering community resilience to climate and disaster risks, and ensuring the equitable development of communities and their livelihoods. The recovery will be guided by the following principles: prioritization of the urgent needs of the most affected population and vulnerable groups, delivery of results in an efficient, equitable, conflict sensitive and transparent manner, tailoring of recovery efforts to the specific socio-political and economic landscape, building resilient infrastructures, as well as establishing robust coordination mechanisms and inclusivity of recovery programs.

The recovery strategy encompasses the following key pillars: (i) building community resilience against shocks and crises through the provision of assets and support services to strengthen capacities of communities to recover and rebuild from the earthquake disaster and to build their adaptive capacities to manage and protect themselves from repeated shocks; (ii) restoration of access to essential services for the affected communities, including in health, education, energy, and water and sanitation sectors; and (iii) recovery and enhancement of community livelihoods by not only reviving pre-disaster economic activities but also improving and diversifying livelihood opportunities, and foster community resilience and sustained growth. The Herat earthquakes recovery will also endeavor to develop and implement disaster risk reduction and climate change adaptation strategies, promote gender equality and women's empowerment, and ensure that all recovery interventions "do no harm."

Macroeconomic Impact

The earthquakes in Herat had a localized impact on the country's economy, mainly affecting rural areas and causing substantial damage to assets. While the macroeconomic implications were relatively mild, the destruction of assets was extensive, particularly in the services sector. Industries also faced challenges, with disruptions in supply chains and increased production costs, particularly in areas where energy, water, and buildings were affected. The industrial sector experienced less damage than the service sector but still faced setbacks in production and output. Similarly, the agriculture sector, including farming and livestock production, witnessed challenges, posing a threat to household vulnerability and food insecurity in the affected districts.

While estimates indicate a decline in sectoral production and overall economic activities, the earthquakes had limited impact on fiscal and balance of payments due to smooth international trade operations and continued support from the international community. The overall economic outlook is pessimistic, with downside risks such as reduced demand, potential aid reduction, banking sector instability, and climate events posing ongoing threats to recovery. Despite the negative impact on overall production levels and economic growth projections for 2024, recovery efforts, including international support, are expected to mitigate some of the adverse effects, primarily through growth in the service delivery sector and reconstruction work.

Human Impact

Afghanistan ranks among the bottom 10 countries globally in terms of human development, facing a multifaceted crisis two years after a power transition in August 2021. The economy continues to struggle to recover from a significant contraction, with nearly 7 out of 10 Afghans enduring deprivation. Food security is a top priority across the country, and international aid, while instrumental in preventing economic breakdown, falls short in driving equitable economic recovery. The series of Herat earthquakes exacerbated the hardships faced by 275,256 people, including 147,000 children and teenagers. The recovery plan must address the specific needs of those under 18 and tailor approaches for urban and rural areas. Herat City holds better prospects for recovery, while rural villages, lacking resilience, struggle to attract investments. The human impact assessment considers dimensions such as multidimensional poverty, livelihoods, food security, gender equality, and social inclusion. Urban areas experience relatively lower subsistence insecurity than rural regions, with women-headed households facing higher levels of insecurity. Moving forward, the impact of returnees, particularly from Iran, may increase the number of those living in deprivation and increase the dispute for limited resources.

Sector Summary

Social Sectors

Housing

The cost of the disaster brought about by the earthquakes to housing in Herat Province total approximately US$128.7 million, consisting of total damage estimated at US$98.6 million, and losses of US$30.1 million. The housing damage estimate covers 49,578 houses, of which 13,516 were fully collapsed, 18,434 houses with major damage, and 17,628 houses with minor damage in the nine affected districts in Herat Province. Total damage, considering replacement cost for the collapsed houses, repair cost of partially damaged houses, replacement cost of toilets, household goods, and compound walls, is valued at US$98.6 million. Total losses, which include the cost for salvaging and site clearance and intermediate transitional shelters, are valued at US$30.1 million. Hence, the total cost of effects of the disaster in the housing sector is valued at approximately US$128.7 million. Most of the damaged housing units are vernacular houses characterized by earthen and low strength masonry. The houses were old, unmaintained, without adequate seismic-resilient detailing, and followed deficient construction practices.

The total recovery needs of the housing sector are estimated at about US$164.4 million. reconstructing new houses for the collapsed ones, repairing and retrofitting partially damaged houses, and the cost of socio-technical facilitation. It is proposed that recovery and reconstruction include hazard resistant features using appropriate technology options that are environment friendly, have low carbon and water footprint, and use locally available materials and skills. This would require developing technical norms and

training masons and engineers to ensure their inclusion in the reconstruction and recovery process.

Effective recovery processes will require socio-technical facilitation of owner-driven processes to ensure that households, particularly the vulnerable, are included. An active collaboration of UN agencies, other international and national organizations with active participation from the house owners will be the key modality for recovery and reconstruction of housing. The housing recovery will be a progressive journey for the households—from current emergency makeshift arrangements to transitional shelters to long-term durable housing. Intermediate transitional shelters are a critical need of the affected families during progression from emergency situations to long-term resilient housing as construction of new houses or retrofitting of damaged houses will take some time. This will be accompanied by a medium- to long-term strategy of housing reconstruction, repairs, and retrofitting to rebuild hazard resistant long-term durable houses in the quickest way possible. The immediate recovery cost needed to enable the implementation of the short-term (up to 12 months) activities is US$49.3 million. The medium- to long-term (up to 36 months) housing recovery strategy activities will require US$115.1 million.

Health and Nutrition

The health and nutrition damage and loss are estimated at US$7.4 million, out of which, the damage cost is US$3.5 million and total losses are US$3.9 million. A total of 86 health facilities were damaged in the earthquakes, comprising 56 public health facilities, one regional hospital in the center of Herat province, and 29 private clinics. Health facilities also saw damage to medical and non-medical equipment. In 43 public health facilities, the medical and non-medical equipment had minor damage, while six public health facilities had moderate damage, and six others full damage. A more detailed assessment conducted by a specialized team consisting of engineers, epidemiologists, and public health experts is needed to know the extent of the damage and adjust the recovery plans in mid- and long-term accordingly.

The health sector requires US$8 million to meet the needs in restoring the physical damage and health care service delivery in the nine affected districts in Herat Province. Health sector needs extend far beyond the repair, re-equipping, and reconstruction/rehabilitation of 86 damaged health facilities. The stability of essential health and nutrition services for affected populations, particularly displaced persons, must be ensured together with expanded capacity to meet increased demand as a result of the earthquakes, including long-term trauma and surgical care for injured persons, physical rehabilitation services, mental health and psychosocial support services, and therapeutic and supplementary feeding for treatment of malnutrition. The health sector needs to maintain, strengthen, and expand surveillance and response capacity in affected areas.

Looking ahead, the health sector applies an "all hazards" approach to develop and implement a coordinated, inclusive, participatory, whole-of-population health system early recovery plan to build back better (BBB). Furthermore, the health sector will promote BBB within early recovery approaches, including investments in improving/strengthening the infrastructure, health information systems, preparation of mass casualty plan, integration of primary health care and nutrition services, support to policy and partnership, and workforce development. Achievement of health sector recovery interventions will depend upon sufficient investment of resources, political will, and avoidance of additional emergencies during the recovery period. US$6.4 million is required for the short term (up to one year) and US$1.6 million will be needed for the intermediate term (up to three years).

Education

The October 2023 earthquakes in Herat Province have exacerbated the existing challenges of the education sector. 295 public schools and community-based education (CBE) classes were directly affected, amounting to over US$53.2 million in direct damages and losses to the sector. Of this amount, the cost of total damage is estimated at US$50.8 million and total loss at US$2.4 million. The infrastructure of 99 institutions was assessed as fully damaged, with more than 60 percent of the infrastructure (classrooms, boundary walls, water and sanitation facilities) being damaged, and 189 institutions were assessed as partially damaged, sustaining a range of 20 percent to 59 percent damage to infrastructure. CBEs, which are held in spaces provided by the community (homes and/or community spaces) sustained the most damage, as houses often have poor foundations and plinths and are seismically vulnerable.

Almost 180,000 students and 4,390 teachers in the 295 affected institutions have been impacted, experiencing loss of learning time and productivity as education institutions are fully or partially closed following the earthquakes. The losses for the education sector were categorized in service and productivity losses due to disruptions in learning during the cold climate academic year following the earthquakes and increased or unforeseen costs associated with the use of temporary learning spaces and the need for demolition and debris removal to restore infrastructure. It also includes learning loss of about 10 weeks, estimated from the time since the earthquakes to the start of winter break.

About US$69.5 million is required for recovery in the education sector, considering the need to build back better, mitigate learning loss and school dropout, and ensure improved DRR in the sector. As such, recovery costs focus on three categories: (i) rebuild institutions and facilities (US$50.8 million); (ii) learning recovery (US$3.8 million); and (iii) mitigate the human impact of the earthquakes (US$14.8 million), which could otherwise impact student attendance and learning in education. In addition, a further recovery cost (US$0.1 million) is included to strengthen disaster risk resilience of the

overall education sector and ensure institutionalization of disaster risk reduction (DRR) principles. As the most urgent priority for recovery is ensuring students return to school, short-term efforts should focus on community mobilization and advocacy to raise awareness on safety and the importance of education. This should be accompanied by provision of temporary learning spaces and other teaching and learning materials to ensure learning resumes as soon as possible and make-up for loss incurred following the earthquake so children do not fall behind.

The short-term needs in education over the next 12 months amount to almost US$36 million. Medium- to long-term efforts should focus on the reconstruction and rehabilitation of damaged infrastructure and to rebuild schools and education centers so that they are not only safe, but also are quality and equitable learning environments for all children. The medium-term needs over the next three years amount to US$28 million. Long-term efforts should also focus on improving disaster risk management throughout the education sector through capacity building of education stakeholders and mainstreaming DRR in education. The long-term needs within the next five years amount to US$5.5 million.

Cultural Heritage

The overall estimated damage and loss for the cultural heritage sector amounts to US$3.02 million. The recent earthquakes in Herat have caused significant damage and loss to the cultural sector, threatening the city's cultural heritage and the lives of its residents. Initial assessments indicate that approximately 6 percent of the infrastructure and physical assets within the sector have been affected. This damage poses a severe risk to the functionality and service delivery of cultural facilities, hindering access to cultural services and impeding the preservation and promotion of Herat's cultural heritage. The most affected assets include historic buildings, residential quarters, and key cultural landmarks such as vernacular architecture structures in the Zindajan and Injil districts.

The cost of recovery and reconstruction needs for the cultural heritage sector is US$4.8 million. In the short term, immediate action is required to assess and stabilize the severely damaged infrastructure and physical assets within the cultural sector. This includes conducting comprehensive damage assessments of residential and historical buildings, prioritizing their stabilization and restoration to prevent further loss. Medium-term recovery efforts should focus on capacity building initiatives to enhance the skills and knowledge of cultural professionals and local communities involved in preservation and promotion activities. Long-term recovery and reconstruction efforts should encompass comprehensive planning and investment in infrastructure development, restoration projects, and the revitalization of cultural programs and activities.

Preserving Herat's historical cultural diversity in the aftermath of the earthquakes requires swift and coordinated action, addressing both the immediate needs and long-term objectives. By investing in strategic initiatives that foster heritage conservation, support local livelihoods, and promote economic opportunities, Herat can rebuild and safeguard its cultural heritage for future generations while enhancing the overall well-being of its residents.

Productive Sectors

Agriculture, Livestock, and Minor Irrigation

The cost of damage and loss to agriculture and livestock is estimated at US$14.6 million and US$24.6 million, respectively. Around 577,278 hectares of agriculture land and more than 660,000 animals have been impacted in eight affected districts. In addition, damage to private infrastructure, such as animal shelters, storage, and on-farm irrigation systems and equipment, has been reported. The damage in the crop subsector estimated at US$8.8 million is related to damaged irrigation systems, stored seeds, and agriculture input, including saffron production. The total value of damage in the livestock subsector is estimated at US$5.8 million and is due to death of over 10,000 animals as a result of direct and indirect effects (diseases, dehydration, or starvation) of the earthquakes. The most damage (both partial and full destruction) in the livestock sector was mainly to animal shelters and animal feed storage.

The aggregate change in economic flow in the sector and impact on service delivery is estimated at US$24.6 million. The estimated production loss in the crop subsector is US$17.3 million. Wheat, under irrigated conditions, for the season 2023–24 has been the most affected, followed by the second crop on irrigated land (pulses) and saffron. The estimated production loss in the livestock subsector is US$7.3 million. Spread of animal diseases was also registered among the affected live sheep, goat, and cattle population, which coupled with lack of fodder, feed, shelter, and drugs might contribute to reducing current and future production of livestock.

Recovery needs of the sector are estimated at US$59.5 million. The aims of the recovery and reconstruction efforts in agriculture are to revive economic activities across the sector and to strengthen farmers' capacity to be more resilient to similar future shocks in accordance with BBB principles. The recovery strategy will consist of short-term activities and medium- to long-term interventions. In the crop subsector, it will include ensuring preparedness for the incoming winter wheat season, provision of seedlings, and restoration of orchards and fruit tree plantations, and rehabilitation of irrigation schemes, which should be implemented through cash for work or public works. It should also include supporting eco-friendly and healthy climate smart agriculture, soil preservation, and water management techniques, and increase disaster resilience by improving land resource management, establishing new drainage systems where required, distributing resilient crops, increasing awareness of traditional disaster management, and introducing income diversification in agriculture adapted to local context. In the livestock subsector, it includes scaled-up provision of animal shelter, feed, fodder, veterinary drugs as well as restocking of small animals (i.e., poultry), especially targeting women and the most vulnerable animal keepers; access to financial support; restoration of destroyed animal shelters using BBB principles; and distribution of dairy kits to increase income in early spring. Further resources would be required for restoring the livestock economy, promoting large and small ruminants restocking in select zones, and capacity building for field veterinarians and livestock keepers. The estimated recovery needs for the short term are US$37.5 million, for the medium term US$17.8 million, and for the long term US$4.2 million.

Commerce, Private Sector, and Industries

Following the devastating earthquakes that struck Afghanistan, the private sector has faced significant damage and loss, critically impeding its capacity to contribute to the country's already fragile economy. Industries such as food processing, agriculture, retail, manufacturing, various services, and construction were among the hardest hit. The estimated cost of total damage reached around US$5.6. million, leading to projected losses of about US$8.2 million in the year following the disaster. The extensive damages and even more considerable losses reveal a private sector under siege, struggling to cope with the earthquakes' aftermath. Beyond the immediate financial toll, the destruction has affected the livelihoods of thousands of Afghans, compromising the economic recovery of a nation already grappling with socio-political challenges.

The recovery needs for commerce, private sector and industries in the affected regions amount to US$18 million. The recovery needs in the agribusiness sector are highest across the sectors, amounting to US$4.9 million. This highlights the substantial impact of the earthquakes on activities that are closely linked to agriculture and livelihood. The approach to recovery

must be tailored to suit businesses of different sizes, as each category—small, medium, and large—demands a unique strategy. PDNA data reveal that small and medium enterprises (SMEs), which are crucial for local economic growth and job creation, bear a significant portion of recovery expenses. Small businesses in particular need approximately 49.8 percent of the total estimated funds for damage repair and 44.2 percent for compensating economic losses. Meanwhile, medium-sized enterprises experience a marginally lower damage rate at 46.6 percent, yet they suffer greater economic losses, requiring 53.4 percent of the resources. The data highlights the critical necessity of providing focused assistance to enable SMEs to effectively rebuild and recuperate. The recovery cost required for the short term (up to one year) is US$6.9 million and for the medium term (up to three years) US$11.1 million.

Infrastructure Sectors

Water and Sanitation

The cost of total damage and loss for the water, sanitation, and hygiene (WASH) sector is estimated at US$9.4 million. The damage for the sector is estimated at US$6.2 million across the nine affected districts. This amount represents the cost of damage to water-related infrastructure, such as (i) borewells with hand pumps; (ii) pipe schemes with electrical pumps; (iii) pipe schemes with gravity-fed system; (iv) pipe schemes with solar pumps; and (v) reservoirs. The damage cost covers only the public water supply in the affected communities. The water sector assessment excluded household sanitation facilities as these are captured by the housing sector assessment, whereas institutional WASH facilities are covered under education and health for schools and health facilities, respectively. The total loss for the sector is estimated at US$3.2 million, covering the additional costs incurred to provide water trucking, provision of WASH supplies, emergency latrines, and hygiene promotion.

The recovery and reconstruction needs for the sector are estimated at US$7.9 million. This amount will be utilized to implement immediate recovery interventions, such as reconstruction of water supply networks, wells, and water towers. This will ensure the sustainable recovery of WASH service, restore water supply to the affected communities, and provide the immediate basic human right to water and sanitation in Afghanistan, as well as respond to disease outbreaks because of deteriorating WASH service in the affected areas. The short-term needs in WASH over the next 12 months amount to

US$1.6 million and the medium-term needs over the next three years amount to US$6.3 million. No cost for long-term needs has been planned for the WASH sector.

Energy

The recent earthquakes that struck Herat Province have caused damage and loss in the energy sector infrastructure. The transmission poles, distribution transformers, and substation buildings have been affected in the impacted areas with the cost of total damage estimated at US$1.1 million. The earthquakes resulted in the collapse and destruction of several transmission poles, leading to disruptions in power transmission. Additionally, the distribution transformers, crucial components for local power supply, have suffered damage, affecting their functionality. Moreover, several substation buildings have been structurally compromised, further exacerbating the challenges faced in the energy sector. This damage has resulted in widespread power outages and hindered the provision of electricity to more than 3,000 households in the affected communities with a revenue loss of around US$11,500 daily or a total revenue loss of US$0.7 million, accounting only for the first two months.

In light of the damages caused by the earthquakes, addressing the recovery needs of the energy sector is of utmost importance. The primary focus should be on rebuilding and replacing the damaged transmission poles to restore the power transmission network swiftly. Simultaneously, urgent attention must be given to the repair and replacement of distribution transformers to ensure the resumption of electricity supply to local communities. Furthermore, it would be vital to reconstruct and strengthen substation buildings to guarantee the safe and efficient operation of the energy infrastructure. It is crucial to mobilize resources, both human and financial, to expedite the recovery process and restore the energy sector to its pre-disaster state.

The total amount for recovery needs is US$8.1 million, which includes the needs in the short term, such as conducting a rapid assessment of the energy infrastructure to develop a recovery plan in the affected areas, conduct capacity building trainings for Da Afghanistan Breshna Sherkat (DABS) staff on the maintenance of the distribution and transmission equipment, and provision of solar street lighting. Other needs for the medium and long term are also of crucial importance to rebuilding a resilient energy sector that can withstand future disasters and provide reliable electricity services to the affected areas. These recovery needs include capacity building in the construction of disaster-resilient energy infrastructure, providing solar energy systems to the affected 3,304 households, and conducting a detailed study on building disaster-resilient transmission, synchronization, load balancing, and upgrading of the protection system of the national grid. The short-term needs in energy over the next 12 months amount to US$2.8 million, the medium-term needs over the next three years amount to US$2.8 million, and the long-term needs for up to five years are US$2.5 million.

Transport and Telecommunications

The cost of damage to the transport and telecommunications sector is estimated at US$32.9 million. This includes damage to primary, secondary, tertiary, and other roads, of which 26 percent of costs are due to completely destroyed roads and 74 percent to partially destroyed roads. The indirect losses account for an estimated US$3.3 million. The transport sector plays a crucial role in driving economic growth and activity. Prompt sector recovery can help mitigate the earthquakes' negative impacts. Proper sector recovery does not only depend on reconstruction and rehabilitation works, but also requires restructuring governance, improving policy decisions, updating engineering design practices, and embedding disaster and climate resilience into the infrastructure of new roads. Furthermore, private sector mobilization is key to supplement funding from public national, multilateral, and bilateral resources. Wherever possible, private sector participation should actively be pursued at different stages of the recovery and reconstruction process of new infrastructure.

The reconstruction and recovery needs amount to US$50.3 million across the nine affected districts. The total recovery demand will have to be met through a multi-stage implementation plan. Priority should be placed on roads that are completely damaged but are critical for recovery, particularly primary roads. Considering labor availability and the extent of road damage, certain repair and restoration work may employ labor-intensive methods to offer temporary employment to affected communities and improve their livelihoods. The recovery needs for the short term (up to one year) are US$5.8 million, for the medium term (up to three years) US$19.8 million, and for the long term (up to five years) US$24.7 million.

Cross-cutting Sectors

Employment, Livelihoods, and Social Protection

The earthquakes have had a devastating impact on the employment and livelihoods of the people in the nine affected districts in Herat. This assessment estimates that the disaster resulted in the loss of 22,932 jobs, of which approximately 26 percent were held by women. The loss of workdays and personal income due to the reduced work opportunities is estimated at 6.96 million workdays and US$35.6 million, respectively, for the year following the earthquakes. The agriculture sector was the most affected, accounting for 93.8 percent of the job losses and 76 percent of the income loss. The commerce and industry sector also suffered significant damage, especially among small and medium enterprises.

The earthquakes have also increased the vulnerability of the affected communities to multidimensional poverty and disrupted their access to basic services and infrastructure. Based on the report of health cluster, 114,000 people need humanitarian assistance as of October 19, 2023. The disaster damaged the water supply in the affected districts, affecting the access of around 400,000 people to water supply for household needs. Most of them are women and girls, who face increased risks of disease, violence, and exploitation. The disaster also damaged 56 public health facilities and one regional hospital in the center of Herat Province, along with 29 private clinics. The damage reduced the availability and quality of health care services for the affected population, especially for women, children, and the elderly. Moreover, the disaster destroyed or damaged 10,113 houses and 295 schools in

the affected districts, impacting the shelter and education of the people. The damage exposed the affected population to harsh weather conditions, insecurity, and displacement. The disaster also affected the education of almost 180,000 students and productivity of 4,390 teachers, and increased the risk of dropout, especially for girls and children with disabilities.

The earthquakes have exacerbated existing vulnerabilities of the disaster-hit districts in Herat following the historic political and administrative transition in August 2021, which left the population grappling with a severe humanitarian crisis due to immensely harsh economic conditions. A significant number of the population in Herat are in dire need of employment, livelihoods, and social protection in the aftermath of the earthquakes. Promoting Employment, Decent Work and Social Protection Through the Humanitarian-Development-Peace Nexus is proposed as a comprehensive and integrated approach to bridge the continuum from immediate income generation to medium- and long-term livelihood recovery, contributing to ensuring social protection. The program combines employment-intensive investments, livelihood programs, employment services, protection of vulnerable groups, and social protection to respond to the relief and recovery needs of the earthquake-affected communities, with a particular focus on the most vulnerable households, including those headed by women and persons with disabilities. The estimated budget for the recovery needs amounts to US$50.5 million.

Disaster Risk Reduction

The combined cost of total damage and loss in the disaster risk reduction (DRR) sector is estimated at US$3.3 million. Of this figure, the cost of total damage has been estimated at US$1.4 million, comprising damages to 10 buildings, 8 doors, 6 computers, 5 protection walls, and 3 retaining walls. All the damage incurred was in the public sector and no damage data for private sector DRR assets were reported. The DRR sector estimated a total loss of about US$1.9 million. These losses comprise additional public expenditures for emergency response operations; regular budgets diverted/reallocated to earthquake response; forgone staff time for service delivery due to injuries of personnel sustained from the earthquakes and additional costs for related medical treatment; loss of files and documents; and cost of service delivery disruptions and delays. The earthquake disaster exposed the gaps in the country's national disaster preparedness and response systems. It likewise revealed the inadequate capacity of the de facto DRR authorities and at the community level in Herat Province to coordinate the humanitarian response and recovery process. The earthquakes have significantly intensified existing vulnerabilities in Herat. The earthquakes struck vulnerable communities, which were already grappling with decades of conflict and underdevelopment that have left them with little resilience to cope with multiple and intersecting shocks. The socioeconomic disparities between the urban and rural areas have become more pronounced. The hardest hit are the rural communities who have been living at subsistence levels with no access to basic services, such as health, education, and welfare.

The DRR sector recovery needs are estimated at US$7.7 million. This amount is to be distributed as follows: (i) US$1.9 million for the recovery of damaged infrastructure and assets, comprising reconstruction and repair of damaged buildings and protection and retaining walls, and replacement of damaged equipment and lost documents; (ii) US$0.4 million for the restoration of DRR services and access to these services; (iii) US$3.4 million for improvements in the DRR systems in Herat and to ensure a resilient recovery by strengthening the capacity to build back better; and (iv) US$2 million to address emerging risks and vulnerabilities caused by the earthquakes. Estimated recovery needs in the short term (up to one year) are US$2.8 million. The estimated cost for the implementation of the activities in the medium term (2-3 years) is US$3.5 million and for the long term (4-5 years) US$1.4 million.

Gender

A total of 48,347 families, comprising 275,256 people, were directly affected by the earthquakes. Women were among the hardest hit by the earthquakes. A total of 142,000, or 52 percent of the affected population, are women, including over 17,000 pregnant women (12 percent of affected women). Over 6,800 affected households are headed by women, representing 14 percent of affected families. Prior to the earthquakes, findings in the 2023 Annual Whole of Afghanistan Assessment indicated that 7 percent of women in the households surveyed had a disability. Almost 70 percent of the aggregate number of affected women-headed households were from Injil and Herat districts, with Injil recording the most substantial impact in the number of women-headed households (2,585) affected by the earthquakes, representing 38 percent of all affected women-headed households.

The October 2023 earthquakes served to reinforce the already existing gender-based issues and challenges. Due to the mobility restrictions placed on women by the DFA, access to basic and gender-specific services, including humanitarian assistance after the earthquakes, has been challenging for women and girls in Herat Province. Women expressed staggering needs for shelter, education, food security and livelihoods, health, addressing gender-based violence, WASH, and winterization essentials after the earthquakes and emphasized the importance to access these services and support through women.

The devastating impact on the housing sector has compounded existing protection risks experienced by women and girls who lost their homes. Rising food prices, women's limited access to market, and destruction of the common oven and cooking spaces have increased the vulnerability of women and girls to food insecurity. The earthquakes have further impacted the livelihoods of the affected population. The impact on women's livelihoods is even grimmer. The economic situation of women-headed families is highly fragile. About 60 percent–70 percent of women-owned businesses have been affected by the earthquakes and only around 10 percent have been able to resume their businesses. Women who had been running businesses from

inside their homes due to mobility restrictions have lost livelihood assets and have been unable to continue operations.

The earthquakes have also worsened girls' access to education, already restricted through an edict preventing girls from attending school beyond Grade 6. An estimated 89 girls' schools, affecting 77,500 girls and 700 female teachers, were damaged by the earthquakes, with school buildings destroyed or partially damaged, and no access to safe drinking water and WASH facilities in schools. With WASH facilities destroyed by the earthquakes, protection concerns for women and girls are underlined as well. The earthquake has worsened mental health outcomes for women in affected villages.

The recovery strategy should account for the needs of the most vulnerable, especially women and girls. A gender-responsive recovery is strongly tied to the recovery of other sectors, such as housing, livelihoods, agriculture, health, education, and WASH. This means meeting women's most urgent and basic needs by providing shelters, access to basic services, and economic restoration. Some specific considerations include the critical inclusion of women in assessments and design teams to ensure housing recovery efforts build back better and are gender responsive. Livelihood recovery of women is strongly tied to housing reconstruction since most of women's livelihoods and enterprises are done inside their homes.

In the short term, cash transfers to women, particularly women-headed households, should be a priority. Moreover, the reconstruction of common oven/cooking spaces offers multiple recovery benefits, such as access to food, mental health, WASH, and other protection issues. These common oven and cooking spaces are one of the few places where women are able to interact with other women. The provision of these cooking spaces will be essential for community recovery and to ensure food security. Engagement with communities in the context of earthquake recovery could be used as an opportunity to engage with adolescent girls and provide education services to this population, including using other spaces such as safe spaces for women and adolescent girls.

Mine Action

Decades of war have contaminated vast swathes of Afghanistan with explosive ordnance (EO), including landmines, unexploded ordinance, and improvised explosive devices. This deadly legacy of war threatens the safe movement of people from 1,725 communities and blocks access to basic services, such as health care and education, with 800 health facilities and 505 educational facilities located within 1 km of a hazardous area. Displacement due to the earthquakes has further exacerbated the affected population, increasing existing vulnerabilities. In Herat Province, there are 64 EO-recorded hazards located in five of the districts affected by the earthquake —Gulran, Guzara, Kohsan, Kushk, and Zindajan. No EO civilian casualty has been reported since the earthquake occurred, however, the possibility of

EO incidents taking place cannot be ruled out, particularly due to the current economic conditions, which often lead men and children, especially boys, to collect scrap metal to support their families.

The recovery strategy for mine action is mainly to enable sustainable and mine-free recovery of the earthquake-affected population of Herat Province. Clearance from mine hazards will open up land for housing relocation areas and agricultural and other recovery activities. It will also improve access to health facilities and schools, and the restoration of livelihoods in the province. It is therefore critical to give due consideration to mine action as a fundamental element of all recovery implementation. A total of US$4.7 million is required in the short term (up to one year) to clear the recorded hazards in the earthquake-affected districts, including to conduct a fresh mine action survey in some areas that may have been contaminated due to conflicts before August 15, 2021.

Methodology and Limitations

The assessment used the PDNA methodology jointly developed by the United Nations Development Group, the EU, and the World Bank. The PDNA focused on the disaster-affected areas and examined the damage and losses related to the earthquakes and identified resilient recovery needs. The PDNA relied as a reference on the World Bank's Global Rapid Post-Disaster Damage Estimation (GRADE) that estimated direct physical damage to buildings and infrastructure at US$314 million (~2.2 percent of the 2021 GDP). GRADE has centered on physical damages, relying on earthquake damage modeling and exposure analysis. The PDNA also made reference to the Herat Earthquakes Multi-Sectoral Rapid Assessment Form developed by the Humanitarian Country Team (HCT) for preliminary disaster effects and impacts. The Herat PDNA complements the Emergency Response Plan consolidated by OCHA on behalf of the HCT and partners to address immediate humanitarian needs from October 2023 to March 2024 as a result of the earthquakes.

The PDNA is built on a sector-by-sector analysis undertaken in the most affected sectors in accordance with the coordination structure established by the leading agency, with support from partners. The PDNA provides sectoral assessments of damage, losses, and needs through the data collected and triangulation tools. It was largely conducted remotely, relying primarily on humanitarian assessments as well as satellite imagery, publicly available information, social media analytics, and existing databases (e.g., Information Management System for Mine Action), corroborated and validated by other sources and means, including remote sensing analytics and data from partners, field visits, and discussion with affected groups. The PDNA is not a substitute for in-depth sector-specific assessments of affected areas. Wherever possible, the sector teams triangulated the data available and provided realistic and credible estimates.

The different sectors have elaborated the respective methodology used in the sector assessments and highlighted the limitations. Aside from the data collection and triangulations tools used, the following are notable parallels across the sectors' methodology and tools: use of household surveys, key informant interviews, data available on open street maps, field visits, stakeholder consultation, and use of sector-specific interview guide questionnaires. For earthquake-affected areas that were either inaccessible or unvisited (due to time constraints), the analysis was based on extrapolation of data. Moreover, all the sectors used the following three damage categories and definitions in the damage estimations: (i) Major means fully/totally damaged = structural damage or total collapse; requires reconstruction >60 percent; (ii) Moderate means partially/moderately damaged = damage to walls and roof, but structure intact; repairable 20 percent–60 percent; and (iii) Minor means slightly damaged = minor surface damage, easily repairable (e.g. paint, windows)<20 percent.

Volume B

The Main Report

Photo Credit: UNDP Afghanistan

The Series of Earthquake Events

A series of four shallow earthquakes hit Herat Province in western Afghanistan, all with the same magnitude (Mw) 6.3, accompanied by recurring aftershocks since October 7, 2023. The initial two Mw 6.3 earthquakes struck around 40 km northwest of the city of Herat on October 7 at 11:11 am and 11:42 am local time, followed by numerous aftershocks. Two more Mw 6.3 earthquakes occurred on October 11 and 15, further impacting the same areas. All four events were shallow with focal depths of 6 km to 14 km, according to the United States Geological Survey. The epicenters of the four earthquakes were located within the Herat region, the third highest seismic hazard zone in Afghanistan,[2] which had remained relatively unaffected by strong earthquakes for an extended period. Tectonically, the Herat region is dominated by the 730-km-long Hari-Rud fault. This fault stretches from its intersection with the Chaman fault, north of Kabul, and extends westward across Ghor and Herat Provinces to the Iranian border. The October 2023 earthquake events were the deadliest in Afghanistan since the May 30, 1998, earthquake that impacted districts in Badakhshan and Takhar Provinces.[3]

These seismic events had a profound impact on the region, with an estimated 1.6 million people experiencing high intensity shaking (MMI 6+). More than 275,000 people in nine districts have been directly affected by the earthquakes, with Injil and Zinjadan districts suffering the most severe consequences. Around a quarter of those affected were children under the age of five. The combined earthquakes from October 7 to 15 have had devastating effects, resulting in a total of over 1,500 fatalities and over 2,600 injuries.[4] Herat Province witnessed the destruction and damage of homes, schools, water systems, health care facilities, and other critical civilian infrastructure. Thousands of families have been left exposed to the element—either living in the open, makeshift shelters, or informal settlement sites—making them highly susceptible to adverse weather conditions, health risks, and other protection hazards.[5] The earthquakes' impact has been particularly severe on the water supply infrastructure, leading to substantial damage to essential water points and sanitation facilities in the affected districts. Herat is renowned for its rich cultural heritage, featuring over 850 cultural monuments and historical sites. Notable historical sites damaged in the earthquakes include Qila Ikhtiarudin (Herat citadel), the Masjid Jami Herat, and the Minaret of Jam.[6]

Humanitarian Response

The Herat Earthquake Response Plan led by the United Nations Office for the Coordination of Humanitarian Affairs (OCHA) estimated humanitarian assistance needs to address the critical, time-sensitive needs of the most vulnerable populations at US$93.6 million (covering the period from October 2023 to March 2024). The United Nations (UN), World Bank (WB), nongovernmental organizations (NGOs), and implementing partners are providing emergency relief and humanitarian assistance and lifesaving immediate basic human needs support to the affected population with contributions from the European Union (EU), Asian Development Bank (ADB), and other members of the international community. Humanitarian partners are coordinating with the de facto authorities (DFA), including the de facto Provincial Governor, de facto Ministry of Economy, de facto Ministry of Refugees and Repatriation, and de facto Afghanistan National Disaster Management Authority as well as their respective departments at the subnational level.

Initial relief assistance provided by the UN and implementing partners includes emergency shelter and basic household items; provision of trauma care, referrals to medical facilities, provision of medical kits/supplies and equipment, as well as mental health and psychosocial support services; therapeutic and supplementary feeding for those acutely malnourished, as well as malnutrition screenings; dignity kits; water trucking, latrine construction, and hygiene kits; and food commodities and cash packages; emergency repairs to damaged kariz (traditional underground gravity based spring water systems) and local irrigation systems; and emergency livestock protection including safe burial of animal carcass, emergency animal feed, water, animal-health services, and animal shelters. Emergency health care services are also being deployed to address the medical needs of the affected people, while protection measures are being implemented to safeguard especially vulnerable populations.

Over two months on from the earthquakes in Herat Province, humanitarian actors had reached 266,800 affected people with direct assistance. Assistance provided to affected communities to date includes emergency shelter (tents) to 16,169 households and US$5.1 million in multipurpose cash assistance (MPCA) to 19,652 households—almost 5,961 received the full MPCA package (US$340 per household) and 4,310 the half MPCA package (US$170). Additionally, 21,017 families have received non-food items, 13,101 families winter blankets, and 11,782 families shelter

repair kits. Emergency food assistance has also been provided to 110,033 people, livestock support to 853 people, nutritious foods to almost 64,512 boys and girls under five years old, and essential primary health care to 60,256 people. Under protection, dignity kits have been provided to more than 11,822 women and girls, child-friendly space activities to 9,494 children, and psychosocial support to 14,045 individuals, among other activities.[7]

The scale of the disaster requires strategic coordination to effectively link and transition from humanitarian response to recovery. An assessment of the full extent of the damage, destruction, and human impact across all major sectors is considered imperative to timely lay the foundations for early recovery, to build back better, and help people resume their disrupted lives. The recovery strategy set out in the Post-Disaster Needs Assessment (PDNA) seeks to build on and complement the humanitarian response.

The Disaster Context

The earthquakes in Herat have hit vulnerable communities with limited resilience to handle multiple concurrent shocks. Prior to the earthquakes, Afghanistan was already suffering from decades of conflict, successive droughts, a shrinking economy, rising poverty, food insecurity, and malnutrition. Over 90 percent of the population live below the poverty line. Around 17 million people are experiencing acute food insecurity, which is approximately 50 percent of the population based on the National Statistics and Information Authority (NSIA) estimate for 2021–22.[8]

Herat's multiethnic society is comprised of Tajik, Pashtun, and Hazara as well as smaller Uzbek, Turkman, Aimak and Arab communities.[9] The province has been one of those hosting the largest numbers of internally displaced persons (IDPs) in Afghanistan. The displacement due to conflict and drought has had serious impacts on access to services, land, and shelter, and has resulted in negative coping mechanisms. The disaster has further exacerbated insufficient levels of service delivery that predate the earthquakes. In addition, sector specific and ad hoc restrictions by the DFA continue to impact and at times delay the delivery of assistance.

Furthermore, the existing socioeconomic conditions and vulnerabilities may exacerbate the impacts of the earthquake events on Herat Province. In 2023, Afghanistan was ranked at the bottom of the Global Gender Gap Index, emphasizing its continued challenges in narrowing gender disparities across sectors. Children under the age of 14 comprise 46 percent and those under nine years old constitute 32 percent of the province's population. Herat Province is characterized by a predominantly rural demographic, with 69 percent residing in rural areas and 31 percent in urban areas, according to NSIA 2021–2022 estimates. The rural population faces heightened vulnerabilities, with strained pre-earthquake education and health care services, impacting timely medical care for the injured. Earthquake impacts on rural agriculture disrupted livelihoods and exacerbated economic vulnerability in these communities. Weather and environmental conditions further aggravate these vulnerabilities as the timing of the earthquakes coincided with Afghanistan's harsh winter.[10]

Already suffering from decades of conflict and instability, Afghanistan's human rights, governance, humanitarian, development, and, notably, gender equality situations have deteriorated sharply since the Taliban takeover in August 2021.

While there has been a notable improvement in the security situation, extremist and insurgent groups are still active and lingering tensions and grievances pose threats to stability in the country and threaten the international community and its ability to deliver assistance in a safe and secure manner. The most potent armed opposition faction is the Islamic State Khorasan Province, carrying out attacks against the de facto authorities and civilians, most often targeting Shia-Hazara communities.[11]

The country's economy contracted by about 30 percent between 2020 and 2022. While significant International donor assistance has mitigated some economic decline, the economy has not recovered to its pre-2021 levels and prospects are not favorable. Since seizing power, the DFA have focused on the transition from insurgency to administration, despite lacking international recognition. Their restrictive policies on women's political, social, and economic rights, and access of women and girls to education and work, as well as inclusivity of the governance structures, violations of human rights and freedom of speech, and increased interference in the delivery of international assistance are the primary barriers preventing members of the international community from considering a return to broader development support. Afghanistan ranks as the world's seventh most vulnerable country to climate change.[12] As a compounding challenge, since September 2023, hundreds of thousands of Afghans, most of whom are women and children, are being repatriated from Pakistan and Iran to a country struggling to absorb the high number of returnees.

To help ensure principled delivery of interventions, including the participation of and for the benefit of women beneficiaries, agencies and implementing partners are recommended to liaise with the DFA at the technical level to secure local arrangements. The integrated delivery of interventions across sectors, e.g., delivery of psychosocial support interventions in less sensitive programming areas such as health, reduces the need to renegotiate agreements for principled assistance to meet recovery strategy targets. In a resource constrained environment, community engagement with all communities, including with local nongovernmental decision-makers, will be paramount to avoid exacerbating tensions over intervention delivery. This may include hiring of project staff, including women, from the affected areas.

Toward Resilient Recovery: Vision, Principles, and Key Pillars

Recovery Vision

Achieving an inclusive recovery in areas affected by the earthquakes by adopting a people-centric, gender-responsive and integrated approach, fostering community resilience to climate and disaster risks, and ensuring the equitable development of communities and their livelihoods.

Guiding Principles

1. Prioritize the urgent needs of the most affected population and vulnerable groups (including women, the elderly, children, persons with disabilities).

2. Ensure that results are delivered in an efficient, equitable, conflict sensitive and transparent manner.

3. Tailor recovery efforts to the specific socio-political and economic landscape, with a keen emphasis on community engagement and participation to address local perspectives and needs.

4. Build resilient infrastructures to address both immediate recovery and long-term resilience to future seismic risks.

5. Establish robust coordination mechanisms among international organizations, donors, national and subnational nongovernmental organizations (NGOs) for a comprehensive recovery.

6. Ensure the inclusivity of recovery programs by acknowledging and addressing the specific needs and vulnerabilities of diverse demographic groups, including marginalized communities and indigenous populations, and incorporating a cross-cutting, gender sensitive approach.

Key Pillars

1. **Building Community Resilience against Shocks and Crises.** The strategic objective of this pillar would be to build community resilience through the provision of assets, and support services to strengthen capacities of communities to recover and rebuild from the earthquakes disaster and to build their adaptive capacities to manage and protect themselves from repeated shocks. To this end, the most affected households will be provided with a core earthquake resilient house, supported by livelihood interventions centered on local economic development, and critical infrastructure in communities will be rehabilitated to facilitate access to markets and all services. This encompasses the restoration of vital small-scale infrastructure, such as roads, bridges, irrigation, water and sanitation, and alternative energy sources, to ensure connectivity to schools, health care facilities, and markets. This pillar would promote a community-led restoration combined with livelihood development approach where possible, a participatory and empowering method wherein communities take an active role in identifying, planning, and implementing initiatives that address their unique needs, fostering inclusive and sustainable development from within.

2. **Restoration of Access to Essential Services.** The strategic objective of this pillar would be to swiftly reinstate essential services for the affected communities, including in health, education, energy, and water and sanitation sectors. The goal is to go beyond reinstating services to their pre-disaster levels; it will be about ensuring the enduring resilience of these services in the face of similar future seismic disasters and improving services to the most vulnerable people. Specifically, this includes reconstruction and repair of all schools and hospitals and water and sanitation services with improved services. Additionally, it aims to provide equitable access to services and make it efficient for women who are engaged in the care economy to use their time for productive activities. Households with young children will be given additional cash support to offset any risks of dropping out from schools. Health posts functioning in households will be given better training and equipment to respond to women's health needs. The health posts could also be used as safe spaces for women to meet and raise sensitive issues.

3. **Recovery and Enhancement of Community Livelihoods.** The strategic objective of this pillar would be to revive pre-disaster economic activities, improve and diversify livelihood opportunities, and foster community resilience and sustained growth. Livelihood restoration and economic recovery is crucial for communities to move forward and achieve sustained, long-term, and inclusive economic development. This requires decent employment creation and productive income-generation interventions, as well as restoration of agriculture activities, repair of damaged surface irrigation systems and *kariz* systems, and other economic activities. This would allow individuals and families to recover their livelihoods, build resilience, and participate more productively in society.

   Enhancing private sector participation, building the capacity of micro, small, and medium supply chain actors, and enhancing access to credit and technology will also be critical for recovery and accelerated economic growth. This would include small grants and loans to households, and loans to revitalize micro, small, and medium enterprises (MSMEs). It would also be vital to restore infrastructures, small-scale irrigation, and animal sheds and provide support to farmers through input assistance to targeted smallholder farmers and herders.

The sectoral recovery needs and strategies set out in the PDNA are guided by the principles set out in the Afghanistan Coordination Group's (ACG) Framework for International Partner Support in Afghanistan 2023-2025 (ACG Framework) and the complementary principles and considerations for support to Basic Needs and Livelihoods in Afghanistan. In particular, three cross-cutting considerations are recommended to guide the implementation of interventions:

1. **Disaster risk reduction/strengthening climate resilience:** Develop and implement disaster risk reduction (DRR) and climate change adaptation (CCA) strategies. Build community-level awareness and capacities on DRR and CCA with relevant decision-makers at the community level. Given Afghanistan's vulnerability to climate change and disasters, the strategy proposes interventions to promote climate-resilient and more sustainable agriculture and livelihoods and to ensure that climate risks are systematically integrated into all recovery interventions.

2. **Promoting gender equality and women's empowerment in Afghanistan with a "by women for women and girls" approach:** The PDNA recognizes that Afghan women and girls are not only beneficiaries of support, but necessary agents and catalysts for the implementation of recovery. As such, women must be central to the design and delivery of recovery, including through their meaningful participation—as well as that of women-led and women's rights organizations—to ensure that women and girls across areas affected by the disaster can safely and equitably access support.

3. **"Do no harm":** Throughout, interventions must strive to "do no harm" when implemented, particularly those that may inadvertently contribute to further conflict, human rights violations, and systemic discriminatory and harmful policies and practices, including those affecting women and girls and other vulnerable and marginalized groups. Accountability to "do no harm" principles also requires that basic needs support does not exacerbate inequalities between men, women, boys, and girls. To this end, the centrality of protection will be applied so that protection principles are placed at the center of all recovery actions, including through mainstreaming across all sectors and activities.

Macroeconomic Impact

Summary

The earthquakes in Herat had a localized impact on the country's economy, mainly affecting rural areas and causing substantial damage to assets. While the macroeconomic implications were relatively mild, the destruction of assets was extensive, particularly in the services sector. Industries also faced challenges, with disruptions in supply chains and increased production costs, particularly in areas where energy, water, and buildings were affected. The industrial sector experienced less damage than the services sector but still faced setbacks in production and output. Similarly, the agriculture sector, including farming and livestock production, witnessed challenges, posing a threat to household vulnerability and food insecurity in the affected districts.

While estimates indicate a decline in sectoral production and overall economic activities, the earthquakes had limited impact on fiscal and balance of payments due to smooth international trade operations and continued support from the international community. The overall economic outlook is pessimistic, with downside risks such as reduced demand, potential aid reduction, banking sector instability, and climate events posing ongoing threats to recovery. Despite the negative impact on overall production levels and economic growth projections for 2024, recovery efforts, including international support, are expected to mitigate some of the adverse effects, primarily through growth in the service delivery sector and reconstruction work.

Economic Context Before the Crisis

After the Taliban takeover in 2021, the economy contracted for two consecutive years, declining by 20.7 percent in 2021 and 6.2 percent in 2022. This downturn affected all sectors. Services, which comprise 45 percent of the GDP, shrank by 6.5 percent in 2022, following a staggering 30 percent decline in 2021. The agriculture sector, which accounts for 36 percent of the GDP, experienced a decline of 6.6 percent in 2022 due to unfavorable weather conditions. The industrial sector also saw a contraction of 5.7 percent in 2022, mainly attributed to manufacturing setbacks as businesses faced closures due to limited access to resources and financial challenges. The economy was anticipated to worsen, with negative growth continuing for the third year in a row. The repatriation of migrants and the Herat earthquakes have exacerbated the problem further.

Assessment of Disaster Effects

The earthquakes that struck Herat did not have a significant impact on the country's economy, as they only affected a small area and did not disrupt overall production and the economy. The earthquakes primarily impacted production and activities in the rural areas of Herat. While the destruction of assets was significant at the local level, the overall impact on the economy was not as severe. The services sector was the most impacted, which includes education, health and nutrition, transport, and telecommunication in its subcategories, followed by industries, which include housing, commerce, the private sector, water and sanitation, and energy in its subcategories, and the agriculture sector, which includes agriculture, livestock, fisheries, and minor irrigation. The earthquakes' impact is expected to largely shrink next year. However, it is essential to emphasize that while the macroeconomic implications were relatively mild, the destruction of assets was massive. This indicates that assistance is needed to help rebuild and recover from the disaster.

The service sector has suffered significant damage due to the impact on the health, education, and transport sectors. The estimated damage in the service sector accounted for approximately 64 percent of the total damage, equivalent to 0.9 percent of projected gross domestic product (GDP) for 2023 (table 2). This means that businesses providing services, such as education, health, transport, and retail, have experienced a decline in their activities. Similarly, transport services have been disrupted. This disruption can delay the delivery of essential goods, affecting the activities in sectors that rely on these goods. As a result, damages in the service sector have had a significant negative impact on various businesses, resulting in a decline in economic activity in the months following the earthquakes.

Industries were also affected by the earthquakes, though less than the service sector. Manufacturing and production activities have been disrupted due to factory damage, supply chain disruptions, and increased production costs.

The interruption in the energy and water supply and the ruining of buildings made production expensive for the industries. This means that industries that required energy, water, and buildings for their operations and were interrupted have increased production costs in the earthquake-affected areas, which would ultimately impact overall production.

According to estimates, damages to the service sector due to the earthquakes would pull down the countrywide service sector value addition by about 1 percent and the overall output or income level in the economy by 0.5 percent from the baseline projections (table 3).

The industrial sector suffered approximately 28 percent of the total damage caused by the earthquakes. This suggests that the industrial sector in that area bore a considerable percentage of the overall damage, amounting to 0.4 percent of the country's GDP. Estimates show that the damage to the industrial sector will result in a decline in sectoral production by 1 percent and the country's overall output or income level by 0.1 percent from the baseline (table 3).

The agriculture sector was also impacted, with agricultural activities, such as farming and livestock production, affected and posing a critical threat to heightening the vulnerability and food insecurity at the household level in the nine districts affected by the earthquakes. Damages to the agriculture sector were approximately 7.3 percent of the total damage caused by the earthquakes, about 0.1 percent of the GDP. The damage to the agriculture sector resulted in a decline in production by 0.2 percent, while the overall economic activities of the country declined by 0.1 percent (table 3).

Table 2: Sectoral Damages in Herat Province and Share of FY23 Nominal GDP

	Sectoral Damages (US$ millions)	Share of Total Damages (%)	Share of FY23 Nominal GDP (%)
Agriculture	14.6	14.6	0.1
Industry	56.2	14.6	0.4
Services	128.6	64.0	0.9
Total Damages	199.4	99.8	1.4

Source: World Bank staff calculations

Table 3: Productivity Losses in Herat Province and Share of Decline in FY23 GDP

	Sectoral Damages (US$ millions)	Share of Total Damages (%)	Share of FY23 Nominal GDP (%)
Agriculture	10.7	0.2	0.1
Industry	17.7	1.0	0.1
Services	58.3	1.0	0.5
Real GDP Losses	86.7	0.7	0.7

Source: World Bank staff calculations

Table 4: Real GDP Impact Analysis

	2021-22	2022-23	2023-24	2024-25	2025-26
	Actual	Actual	Proj.	Proj.	Proj.
Assumptions					
Exchange rate	87.7	88.5	80.5	73.3	80.7
Baseline GDP Performance					
Real GDP (US$, millions)	12,553.5	11,602.7	12,463.0	13,953.7	13.075.0
Agriculture (US$, millions)	4,550.5	4,151.5	4,310.1	4,894.4	4,627.5
Industries (US$, millions) U	1,813.7	1,694.6	1,851.0	2,073.9	1,931.9
Services (US$, millions) U	5,612.0	5,201.4	5,632.0	6,304.5	5,870.2
Annual Growth, percent	(20.7)	(6.7)	(2.4)	2.0	3.1
Earthquake-related Losses					
Real Production decline (US$, millions)			86.7	28.6	
Agriculture (US$, millions) U			10.7	3.5	
Industries (US$, millions)			17.7	5.8	
Services (US$, millions) U			58.3	19.2	
Decline in Annual Growth, percent			0.7	0.2	
Post-earthquake Impact on GDP Performance					
Real GDP, in million US$	12,553.5	11,602.7	12,376.2	13,828.2	12,957.4
Agriculture, in million US$	4,550.5	4,151.5	4,299.4	4,878.8	4,612.7
Industries, in million US$	1,813.7	1,694.6	1,833.2	2,048.2	1,908.0
Services, in million US$	5,612.0	5,201.4	5,573.7	6,220.3	5,791.7
Annual Growth (percent)	(20.7)	(6.7)	(3.1)	1.8	3.1
GDP Impact, (percent)	-	-	(0.7)	(0.2)	-

Source: World Bank staff calculations

The earthquakes are expected to hurt the overall production level and exacerbate the already negative growth projections for 2024. According to estimates, the effects of the earthquakes will decrease the country's overall production level by 0.7 percent in 2023 and by 0.2 percent in 2024. The effects of the earthquakes will further hinder economic growth and negatively affect the country's production. It is important to note that these estimates are based on the information available, and the analysis conducted. However, the recovery efforts are expected to partially offset the negative effect on economic activities, mainly through the growth of the service delivery sector and the reconstruction work.

Also, as a result of international support, the earthquakes had limited impact on other sectors of the economy, such as fiscal and balance of payments. The earthquakes had no effect on the balance of payments because it did not disrupt trade with the rest of the world and was operating smoothly.

Risk to the Outlook

The economic outlook is pessimistic, with significant downside risks highlighted. External support is crucial to address issues like unemployment and poverty for sustainable recovery. A major concern is the decline in domestic demand, leading to economic slowdown and negative inflation. The overvaluation of the afghani, the Afghan currency, poses challenges for exports, impacting the struggling domestic industry. To restore the economy, there is a need to boost domestic demand, improve private sector sentiments, attract investment, and not rely solely on humanitarian aid. The baseline scenario suggests a slight contraction in economic growth, with poor sentiments hindering private sector investment and ongoing deflation causing layoffs. Widespread poverty is expected to persist due to slow economic recovery and insufficient job creation. Various downside risks, including reduced demand for goods, potential aid reduction, banking sector instability, and climate events, pose additional threats to the economic outlook.

Human Impact

Summary

The overall socioeconomic context of deprivation and low development levels faced by population groups in the 382 affected villages in the districts of Herat, Injil, Kushk, Zindajan, Gulran, Guzara, Ghoryan, Karukh, and Kohsan in Herat Province in western Afghanistan[13] prior to the series of seismic events in early October 2023 was already dire with the economy struggling to recover from a 27 percent cumulative contraction since 2020. Moreover, 7 out 10 Afghans face **enduring deprivation and lack of access to fundamental necessities, opportunities, and essential services required for subsistence living**.[14] Across the country, food security continues to be a top priority. International aid has primarily targeted humanitarian assistance[15] and has been instrumental in averting a complete economic breakdown but it falls short in driving the economy forward at the required pace to reduce poverty and create opportunities equitably.

The earthquakes have intensified the widespread and multidimensional hardships experienced by **275,256 people and over 48,000 families. These families encompass various vulnerable groups: 4,477 internally displaced individuals; 17,358 pregnant women; 17,146 infants; 3,976 individuals with severe disabilities; 3,207 elderly families facing vulnerability; 6,806 households led by women; 3,176 people enduring chronic illnesses; and 147,000 children under 18 years old**.[16] Therefore, the recovery plan must also ensure tailored interventions to improve the conditions for those under 18 years of age. Further, it must also tailor the recovery approach for urban and rural areas. For instance, Herat City, serving as a bustling economic center, holds better prospects for recovery compared to the affected rural villages. Preserving heritage sites within Herat City will demand a specialized strategy that intertwines monument restoration with local livelihoods and economic growth. Rural villages, lacking resilience and resources, struggle to attract investments, existing as remote areas primarily reliant on subsistence living.

Overview

The seismic events hit Afghanistan amid a continuing humanitarian crisis since the Taliban takeover. Prior to the disaster, existing aid groups faced financial shortages. In response to the earthquakes, international entities appealed for donations. Numerous international organizations provided rescue and continue to provide relief operations. Hospitals, however, struggled to cope with the influx of injured individuals and a shortage of essential equipment. Furthermore, thousands more found themselves

homeless due to the calamity in the face of an approaching winter. Enhanced coordination and convergence of recovery efforts will be necessary to ensure that all affected groups and communities receive the required support, and that limited aid is properly distributed.

Globally, Afghanistan continues to rank among the bottom 10 countries with the lowest human development based on the Human Development Index, a comprehensive index encompassing life expectancy, educational attainment, and overall welfare, often measured by per capita income. Two years after the power transition in August 2021, Afghanistan finds itself in a dire and multifaceted crisis.

Herat Province, with a population of around 2.2 million residents in over 2,000 villages, stands as Afghanistan's second most populous province, behind only Kabul Province in population size.[17] In the earthquake-affected rural villages in the province, people have suffered huge losses. Houses have been levelled to the ground. While **382 villages in the districts of Herat, Injil, Kushk, Zindajan, Gulran, Guzara, Ghoryan, Karukh, and Kohsan** were affected directly, residents of more than 2,000 villages across Herat Province evacuated their homes during the seismic events.[18] As the impact of the earthquakes on population groups becomes clear, the latest data indicate that **a total of 275,256 people and over 48,000 families were impacted, cutting across various vulnerable groups: 4,477 internally displaced individuals; 17,358 pregnant women; 17,146 infants; 3,976 individuals with severe disabilities; 3,207 elderly families facing vulnerability; 6,806 households led by women; and 3,176 people enduring chronic illnesses, and 147,000 children under 18 years old**.[19]

The core of human impact assessment revolves around the notion of human development. It focuses on gauging the adverse effects on individuals and how they reclaim their capacity to lead productive and creative lives, aligning with their needs and preferences. This entails ensuring fair access to stable livelihoods, health care, housing, land, safety, freedom, communal ties, and other essential services that bolster human recovery and development. A crucial aspect is empowering and strengthening human capabilities to recover after the disasters. Facilitating human recovery necessitates fostering an environment where women, girls, boys, men, communities, specific population groups, and the de facto authorities can collectively recover from the impact of disasters.[20]

A people-centered, human-recovery approach to post-disaster assessment and recovery focuses on the following elements:[21]

- The human development impact of disasters.
- The distinct needs and priorities of women, girls, boys, and men of all ages, and subgroups of affected populations through stakeholder engagement.
- The participation of affected stakeholders in their own recovery process.
- Recognition of and support to spontaneous recovery efforts for the affected population.
- Consideration of the sociocultural aspects of disaster recovery, in addition to economic imperatives.
- Measures to build resilient communities and societies.

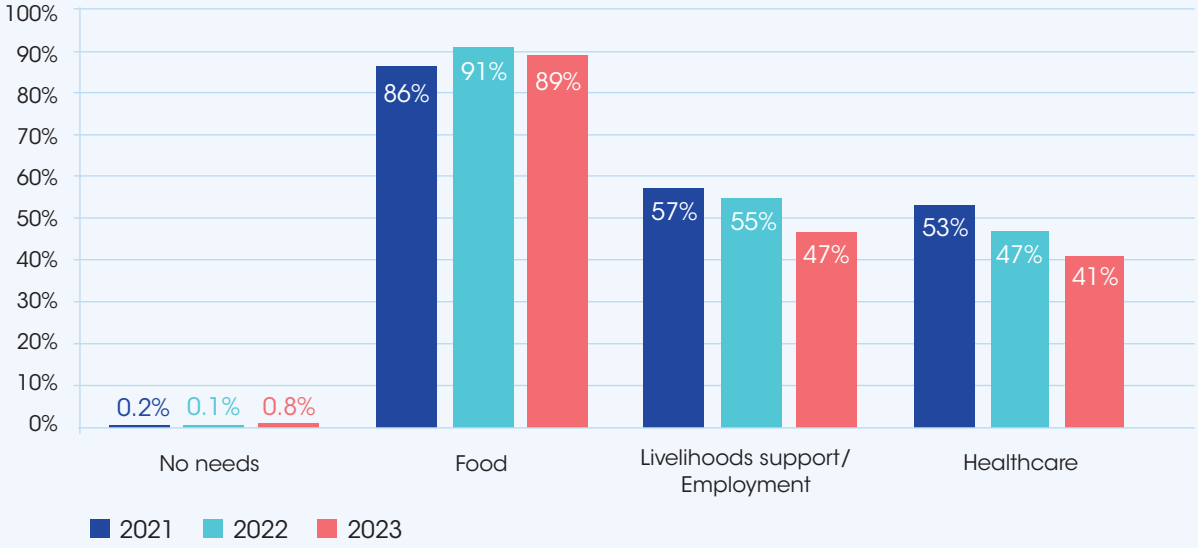
The overall goal of a human impact assessment is to evaluate the impact of disasters on people, their living conditions, health, access to education, livelihoods, food security, social status as well as overall levels of poverty and human development. The key dimensions assessed include:[22]

1. Living conditions: Impacts of the disaster on people's access to water, sanitation, electricity, cooking fuel, housing and basic household assets as well as health and education.
2. Livelihoods: People's access to livelihoods, income and productive assets, and resources.
3. Food security: Food security and household coping strategies.
4. Gender equality: Gender differential impact, access to resources, and decision making.
5. Social inclusion: Including unequal access, unequal participation, denial of opportunities, and the identification of vulnerable populations.

1. Deprivations in Living Conditions

The Subsistence Insecurity Index[23] reveals that there were minor improvements in incomes, expenditures, and living conditions of households in 2023. Despite these improvements, food remains the primary necessity for households in Afghanistan. Even with increased income and considerable price reductions in 2023, households consistently identify food as their foremost requirement (figure 2). During the Whole of Afghanistan Assessment (WoAA) 2021–23, households were asked to list their top three needs from a comprehensive range of options. Across all three years, food was the leading concern (86 percent in 2021, 91 percent in 2022, and 89 percent in 2023), followed by livelihood support/employment (57 percent in 2021, 55 percent in 2022, and 47 percent in 2023) and health care (53 percent in 2021, 47 percent in 2022, and 41 percent in 2023). Less than 1 percent of households reported having no needs, underscoring the severity of subsistence challenges faced by households.

Figure 2: Top Needs of Households in Afghanistan, 2021–23

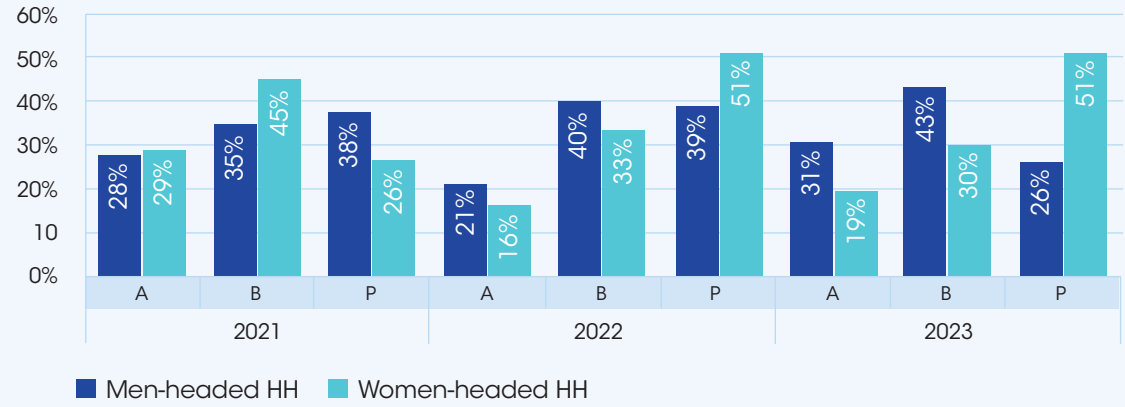


Source: UNDP. 2024. *Two Years in Review* (data provided by WoAA2021, WoAA2022, WoAA2023)

Deprivation in numbers

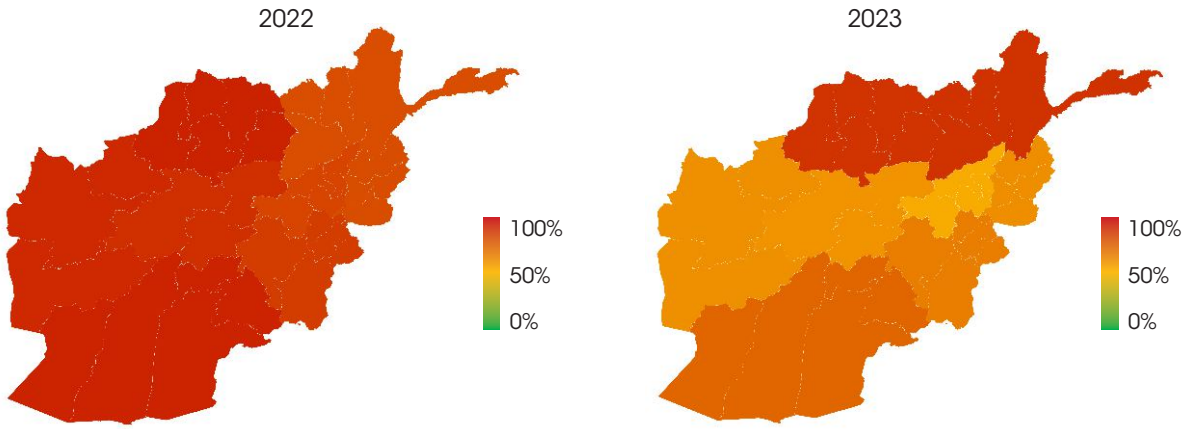
Subsistence insecurity has slightly improved in the Western Region from 59 percent (2022) to 52 percent (2023)—measured by 17 indicators (table 5). Overall, in Afghanistan, urban areas experience relatively lower levels of subsistence insecurity compared to rural regions, with women-headed households tending to face higher levels of insecurity than men-headed households.[24] While there is a notable improvement for men-headed households in the poor food consumption level (39 percent in 2022 and 26 percent in 2023) during this period, around half of women-headed households had poor food consumption levels.

Figure 3: Food Consumption of Households by Sex of Household Head Acceptable (A), borderline (B) and poor (P)



Source: UNDP. 2024. Two Years in Review (original data source MSNA 2021–2023)
Note: Acceptable (A), borderline (B), and poor (P)

Map 1: Subsistence Insecurity Index in Afghanistan, 2022-2023



Source: UNDP. 2024. *Two Years in Review*

In Herat Province, while subsistence insecurity has significantly improved from about 78 percent (2022) to 40 percent (2023) on average (table 5), the disparities between urban and rural areas continue to be prevalent and have been exacerbated by the earthquakes in early October 2023. Disaggregated data are required to better understand these stark differences. The 382 affected villages in Herat Province lack resilience and the resources to recover and are primarily reliant on subsistence living, as observed in the calculation of the SII (table 5).

The SII for Herat Province indicates substantial improvements across many of the indicators for health, living conditions, and livelihood. Exceptions are the indicators on insufficient water availability and financial impact, where the estimated percentage of households negatively affected is higher in 2023 than in 2022. The earthquakes' effects are expected to further exacerbate household subsistence insecurity in the coming months.

Table 5: Dimensions Captured in the Subsistence-Insecurity Index for Herat Province

SII Dimension	Indicator	Household is (or people are) subsistence-insecure if	Weight	2022	2023
Health	Nutrition	Food consumption score is poor.	1/9	56%	6%
	Health care affordability	Specific medicine, treatment, or service is too expensive.	1/9	41%	24%
	Health care availability	The nearest health care center is more than an hour away.	1/9	13%	11%
Living conditions	Water	Insufficient water availability.	1/24	77%	82%
	Sanitation	There are no adequate sanitation facilities.	1/24	52%	9%
	Electricity	Less than five hours of electricity per day	1/24	28%	7%
	Heating fuel	There are no adequate heating fuel sources.	1/24	84%	26%
	Housing	Shelter has significant damage or is fully destroyed.	1/24	50%	44%
	Blankets	Less than one blanket per member.	1/24	55%	24%
	Cooking items	No daily access or no ownership of cooking items.	1/24	3%	4%
	Winter clothing	No daily access or no ownership of winter clothing for all members.	1/24	78%	57%
Livelihood	Work	All male members 18+ are not working or no male member 18+.	1/18	12%	1%
	Dependency	There is less than one member who works for every six members.	1/18	18%	11%
	Market food prices	Prices are too high to afford food items at the market.	1/18	92%	63%
	Food consumption	Reduced coping strategy index is high.	1/18	60%	56%
	Financial impact	Financially impacted by at least one adverse event.	1/18	73%	91%
	Coping	Affected by at least two livelihood coping strategies used or exhausted.	1/18	80%	46%
			SII (Herat) or Average SII (%)	**78%**	**40%**

Source: UNDP. 2024. *Two Years in Review*

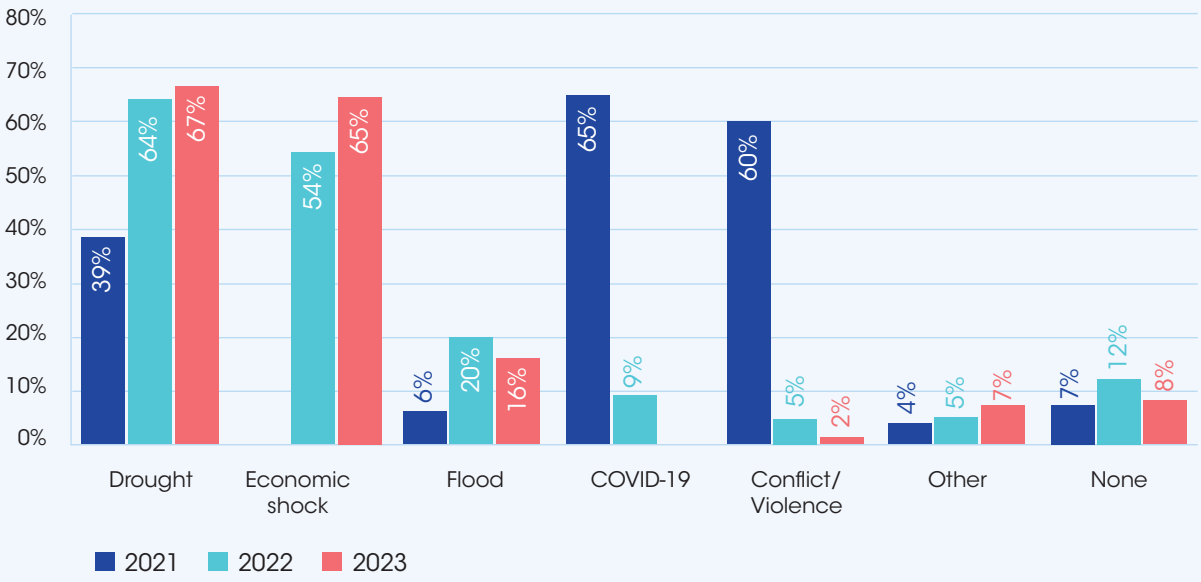
The impact of droughts combined with inadequate water infrastructure has exacerbated water insecurity in many of the villages in Herat Province, with a direct impact on livelihoods. In the earthquake area, 138 out of the 382 affected villages reported inadequate access to ample water resources. Among these, the districts of Injil, Kuskh, and Gulran stand out, with insufficient water access affecting 36 villages in Injil (26,792 residents affected), 32 villages in Kuskh (16,725 residents affected), and 20 villages in Gulran (18,990 residents affected).

2. Livelihoods

Major shocks affecting households

Overall, households in Afghanistan have faced significant impacts from major adverse shocks. In 2021, the primary events were COVID-19, active conflict, and drought, affecting 65 percent, 60 percent, and 39 percent of households, respectively (notably, economic shock was not included as an option). However, by 2022–23, the influence of active conflict and COVID-19 had diminished. In 2022, drought emerged as the major event impacting households (64 percent), followed by economic shock (54 percent), and floods (20 percent). These events maintained their order as the top three adverse occurrences in 2023 (67 percent, 65 percent, and 16 percent, respectively) (figure 4).

Figure 4: Proportion of Households Affected by Major Shocks, 2021–23

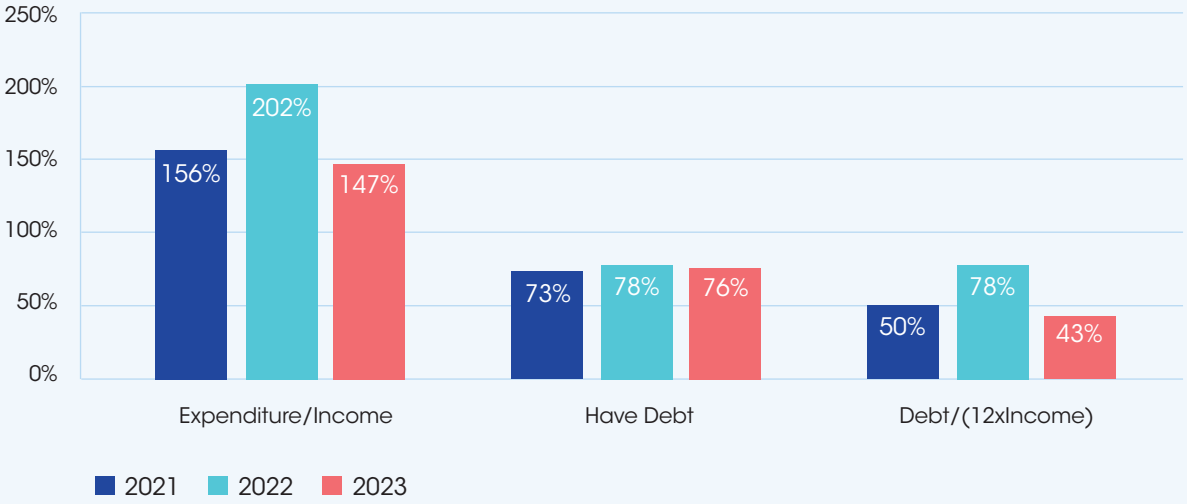


Source: UNDP. 2024. *Two Years in Review* (data provided by WoAA2021, WoAA2022, WoAA2023)

Cash flow to households

Across Afghanistan, household incomes were exceptionally low in 2021–22, to the extent that even with a 76 percent increase in 2023, these incomes remained insufficient to cover basic needs. The Afghan economy experienced a severe downturn from 2021 to 2023, with GDP shrinking by almost 26 percent. Consequently, households faced considerable challenges in securing stable livelihoods, particularly in 2022.[25]

Figure 5: Household Cashflow



Source: UNDP. 2024. *Two Years in Review* (data provided by WoAA2021, WoAA2022, WoAA2023)

The compounded impact of this harsh reality, along with the earthquakes' impact on livelihoods already at subsistence levels, has exacerbated the challenges for households in the affected villages, making coping even more difficult.

Jobs and Livelihoods

In Herat Province, the agriculture and livestock sector employs 50 percent of the labor workforce, trade 11 percent, manufacturing 5.9 percent, transport 5.9 percent, and services 9.3 percent. Most of the workers in the affected villages were engaged in the agriculture and livestock sector.

In total, there are 118,149 registered businesses across Afghanistan. In Herat Province, about 20,000 businesses are officially registered, with half operating in the manufacturing sector. This represents 16 percent of all national registered firms. Moreover, 43 percent of the population (age 14 and above) in the province worked an average of 8 hours per day compared to 40 percent in Kabul in 2017.[26]

Active private sector associations include the Afghanistan Chamber of Commerce and Investment (ACCI), Afghanistan Women's Chamber of Commerce and Industry (AWCCI), Afghanistan Chamber of Industries and Mines (ACIM), and Harakat (not for profit, Public-Private Dialogue platform).

Only formal businesses reported losses and damages to the de facto Directorate of Commerce and Industry, Herat Chamber of Commerce, Herat Women Chamber of Commerce and Industry, Management Authority of Industrial Park, de facto District Authorities, and Special Commission. The ratio of formal and informal businesses is 1:3 (see also the chapter on Commerce, Private Sector, and Industry).

Overall earthquake impact

The earthquakes severely impacted employment and livelihoods of residents across the nine districts in Herat. The livelihoods sector assessment reveals that the disaster led to a staggering loss of 21,244 jobs, with 26 percent of the jobs affected held by women. The reduced work opportunities are estimated at 6.96 million lost workdays and a personal income reduction of US$35.6 million for the year following the earthquakes.

Among the affected sectors, the food processing and agribusiness sector reported the highest losses, with breakdown and disruption in the supply chain, affecting production and distribution. Businesses reported loss of labor because of displacement or casualties, impacting more than 66,000 people across the affected districts. The agriculture sector took the hardest hit, experiencing 86 percent of job losses and 74 percent of income reduction. The commerce and industry sectors, particularly small and medium enterprises, also suffered significant income losses.

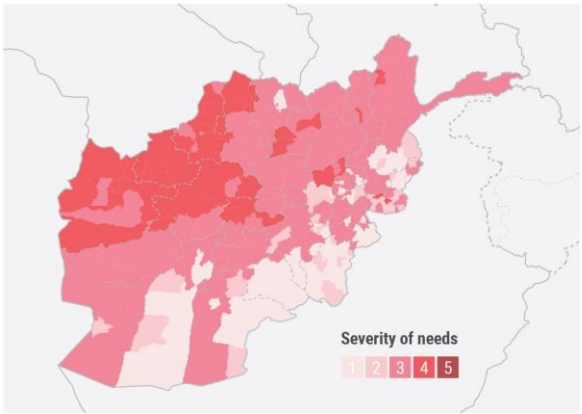
3. Food Security

Overall food security situation in the country

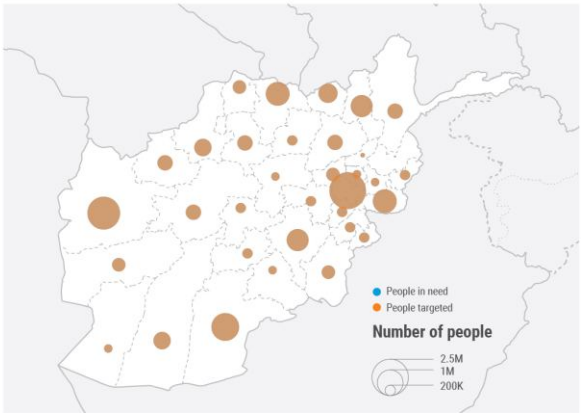
In Afghanistan, persistent challenges like harsh climate conditions, limited income opportunities, and obstacles to basic services contribute to ongoing hunger and malnutrition among its population. In 2024, an estimated 15.8 million people are anticipated to face severe food insecurity, as per the Integrated Food Security Phase Classification (IPC 3+).[27] In Herat Province, most households are classified as IPC3/4 (figure 6). In IPC Phase 3, households face food consumption gaps or are minimally meeting their food needs through negative coping strategies. In IPC Phase 4, coping strategies become extreme, including asset depletion.

Map 2: Sectoral Severity of Needs and People in Need and People Targeted in 2024

Sectoral severity of needs by district (in 2024)

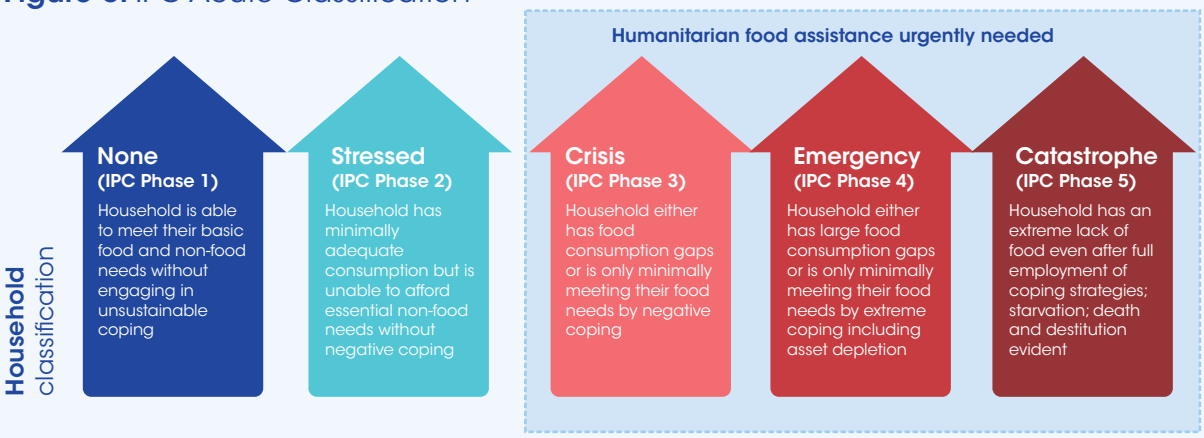


Sectoral people in need and people targeted by district (in 2024)



Source: OCHA. 2023. Afghanistan Humanitarian Needs and Response Plan 2024 (December 2023)

Figure 6: IPC Acute Classification



Source: Famine Early Warning Systems Network (FEWS Net)

The onset of El Niño in early 2024 is predicted to boost agricultural output, in anticipation of above average rainfall, and a near average harvest in the upcoming year. Nevertheless, households will still be recovering from prolonged drought-like conditions, remaining highly susceptible. Enhancing food security hinges on socioeconomic factors and ensuring timely access to seeds and fertilizers crucial for agricultural production in the right areas.[28]

Impact on food availability, access, and utilization

Among the 25,785 affected families who lost their food reserves post-earthquakes, Injil District accounts for 21 percent, Zindajan for 13 percent, and Herat for 11 percent. Regarding livestock losses, 3,276 families were affected, with 19 percent affected in Zindajan, 18 percent in Injil, and 15 percent in Kushk. Notably, 160 villages indicated having sufficient food supplies in their markets, primarily located in Injil , Herat, and Guzara.[29]

Markets reverting to pre-earthquake levels

The Joint Market Monitoring Initiative suggests that marketplaces are reverting to their pre-earthquake conditions across six districts.[30] It also notes that food prices remained unchanged or had decreased post-earthquakes (96 percent of respondents), with the overall cost of essential food items reverting to pre-earthquake averages. This indicates a stabilization of food markets after the initial disruption caused by the earthquakes.

Deforestation exacerbating climate impact, sandstorms, and food insecurity

As most households in Afghanistan rely on natural resources for their livelihoods, the depletion of ecosystems, deforestation, land degradation, and desertification pose a substantial threat to these communities. These phenomena lock families into poverty, amplify their struggle to access food, heighten conflicts over scarce resources, and exacerbate climate impact and the occurrence of sandstorms. Top of form sandstorms can have various impacts, from reducing

visibility and causing respiratory issues to damaging crops, infrastructure, and disrupting daily life in the region. Efforts to address land degradation and desertification through nature-based solutions, engaging the community directly, play a crucial role in mitigating the occurrence and severity of droughts and sandstorms in Herat Province and similar regions.

4. Gender Equality

General restrictions on women's rights and movement

It is crucial to recognize the distinct impact the disaster has on gender equality, specifically focusing on the primary roles of women and girls and the restrictive countrywide political context since August 2021(figure 7).

In addition to the DFA restrictions, cultural norms heavily influence gender dynamics, often resulting in unequal access to resources and services. Further, it is important to understand the impact of the earthquakes on access to services, resources, and productive roles, and decision making at the household and community levels.

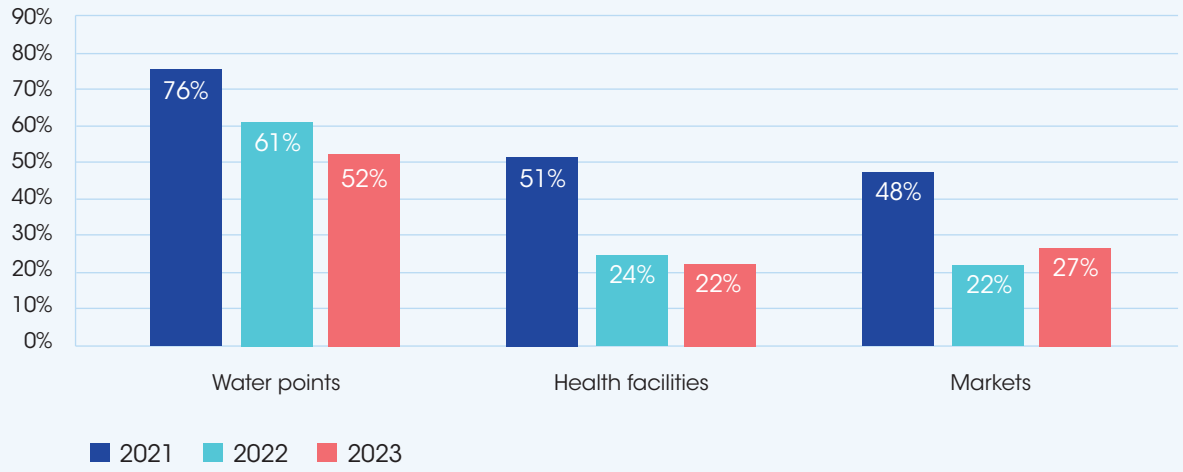
Figure 7: Timeline of DFA Edicts Restricting Women's Rights, August 2021–August 2023

Source: UNDP. 2024. *Two Years in Review*

Access to services, resources, and decision making

Gender relations tend to be culturally specific and are often characterized by unequal distribution and/or access to services and resources. They are also characterized by unequal distribution and/or access to power and decision making to vocalize priorities and needs and use individual potential and capacities.

Figure 8: Unaccompanied Access to Public Spaces for Women and Girls in Men-Headed Households, 2021–23



Source: UNDP. 2024. *Two Years in Review* (data provided by WoAA2021, WoAA2022, WoAA2023)

Women's access to public spaces has been significantly limited across Afghanistan since August 2021. In the WoAA surveys, women and girls in men-headed households were questioned about their ability to access public spaces such as water points, health facilities, and markets (figure 8). In 2021, 76 percent women could independently access water points, 51 percent could visit health facilities alone, and 48 percent could go to markets unaccompanied. However, by 2022–23, imposed restrictions on women led to substantial declines in these figures. In 2023, only 52 percent women could go to water points unaccompanied, a mere 22 percent could visit health facilities alone, and only 27 percent could access markets independently.[31]

In Herat Province, affected women have been singled out as particularly vulnerable to trauma resulting from earthquakes, necessitating sustained psychosocial support. Ensuring recovery entails acknowledging the limitations on women's movement and their access to infrastructure and basic services, in particular health care.

The villages in Injil and Herat districts together account for nearly 70 percent of all households headed by women that have been impacted. Among these, Injil District stands out significantly, bearing the brunt of the earthquakes' impact. It not only houses the largest number of affected individuals (89,317) but also hosts the highest number of women-headed households affected (2,585), making up 38 percent of all affected households led by women.[32]

Women's livelihoods and business

Following the earthquakes in Herat, reports indicate that 60 percent to 70 percent of businesses owned by women have been affected. The situation is notably severe in districts like Zindajan, Ghoryan, Gulran, Injil, and Karukh, where women have borne the brunt of the crisis. Only about 10 percent of women-led businesses have managed to restart. Due to mobility constraints, women had been operating their businesses from home, but the destruction of their houses have resulted in the loss of assets, impeding their ability to carry on with their business operations.[33]

5. Social Inclusion

Ethnic diversity

To promote social inclusion, it is important to identify marginalized population segments, analyze how the earthquakes have exacerbated their deprivation or exclusion, and outline strategies to foster their social inclusion during the recovery phase. Like Afghanistan, Herat Province is ethnically diverse with many different population groups. While there are no reliable statistics on percentages of the prevalence of different ethnic communities in Herat Province, Tajiks are thought to make up the largest population group, followed by Pashtun and Hazara.

Vulnerable population groups

Afghanistan's living standards remain vulnerable, susceptible to seasonal changes, economic fluctuations, and climatic disturbances. Major factors contributing to increased vulnerability include economic instability, high unemployment rates, growing debt, soaring costs of agricultural and livestock inputs, and weakened purchasing power. Prolonged conflict, severe weather conditions like multi-year droughts, harsh winters, floods, and disasters such as earthquakes have significantly diminished households' ability to withstand these shocks. In 2023, funding shortages excluded 10 million Afghans from crucial assistance, leaving long-standing emergency needs unaddressed, particularly affecting new and expecting mothers, toddlers, and preschool children.[34]

Rural populations

Rural communities, in particular, encounter obstacles in accessing essential services due to inadequate infrastructure, leading to increased time spent traveling to or waiting at public service locations. Approximately 28 percent of rural households rely on unimproved water sources, compared to 17 percent in urban areas. Additionally, rural households experience nearly a 10 percent lower income per person (AFN1,651) compared to urban households (AFN1,802), making them more vulnerable to disease outbreaks and less equipped to withstand economic fluctuations.[35]

People with disabilities

In Afghanistan, households with a member with disability have increased vulnerability, including 25 percent higher debt levels (AFN59,876) than the national average (AFN46,530) and a greater reliance on livelihood coping strategies (32 percent compared to the national average of 22 percent). Moreover, these households tend to have higher instances of child labor (23 percent reporting at least one boy working outside of the home, compared to the national average of 15 percent). The integration of persons living with disabilities into society encounters obstacles because of limited accessibility to infrastructure, insufficient health care, discrimination, and stigma. In the earthquake-affected areas, 3,976 persons living with disabilities were directly impacted.[36]

The impact of returnees

A key element that could disrupt social inclusion and cohesion, warranting close attention, is the massive numbers of returnees from Pakistan and Iran, given the lack of resources to support those affected by the earthquake and those returning. Since September 15, 2023, when Pakistan initiated the repatriation of undocumented Afghans based on the decree "Illegal Foreigners' Repatriation Plan," more than 478,800 returnees have arrived at the Afghanistan border (as of December 21, 2023).[37] This number is expected to grow exponentially given that the decree applies to 1.3 million undocumented Afghans residing in Pakistan.

Conclusion and Recommendations

Looking at the overall human impact dimensions across (1) living conditions and multidimensional poverty; (2) livelihoods; (3) food security conditions; (4) gender equality; and (5) social inclusion, it is recommended that:

- **Measures are tailored to the needs of affected urban and rural areas**, considering that rural areas are primarily reliant on subsistence living.
- **Measures are tailored to suit the needs of different demographics, in particular children and teenagers (under 18)** living in affected areas (as they comprise over 50 percent of affected individuals).
- Given the subsistence living in the 382 affected villages, housing reconstruction and restoring livelihoods emerge as top priority to mitigate the earthquake impact on living standards. Therefore, emphasis should be placed on **rebuilding housing structures** that adhere to robust standards, ensuring resilience against potential future seismic events. There is a **pressing need for convergence of efforts and enhanced collaboration among UN agencies and international and local NGOs** involved in the recovery efforts.
- **Urgent revitalization of livelihoods,** including livestock, and water canals, critical surface irrigation systems, *kariz* system repairs, and borewells, **and prioritization of income-generating activities** for both men and women are imperative (e.g., training and access to markets for women involved in garments, food production and processing, handicrafts, and livestock is necessary).

- **Restoration of access to fundamental services, such as primary schools, and water and sanitation,** should not only aim to return to pre-disaster levels but must also align with the SDG WASH targets set for 2030. Special consideration should be given to measures benefiting women and girls.

- Advocate for **gender-sensitive recovery efforts**, guaranteeing thorough consultation and inclusion of women in all stages of the recovery process and implementation.

- Evaluate the viability of implementing alternative solutions to **expand social protection schemes**. This could involve exploring options like cash-for-work programs, conditional cash transfers tied to children's education milestones, transportation vouchers aimed at reducing travel costs for villagers accessing health care in larger urban centers, and other potential strategies.

- **Promote financial inclusion measures**, including financial services such as microfinancing that are accessible and adequate for men and women, to boost shared prosperity and reduce poverty.

- **Enable sustainable and affordable access to energy** for essential purposes like cooking, heating, enhancing basic services, and supporting productive activities.

- **Promote and invest in a more robust collaboration among local communities, businesses, and local institutions to tackle environmental degradation effectively, with the aim of reducing land degradation, deforestation, and the risk of sandstorms.** This should blend restoration projects with comprehensive nature-based solutions aimed at stopping desertification and restoring the ecosystems that have been affected by the damage (e.g., as done in other regions, support vulnerable women to establish and manage community sapling nurseries).

Social Sectors

Photo Credit: UNDP Afghanistan

Housing

1. Summary

Housing is the most affected sector in the Herat earthquakes with 13,516 houses fully collapsed or damaged beyond repairs, major damage to 18,434 houses, and minor damage to 17,628 houses in over 380 villages in the nine affected districts in Herat Province. The damage data are based on the Multi Sectoral Rapid Assessment Form (MSRAF) (UNOCHA), remote-sensing analytics, and Housing and Building Damage Assessment (HBDA) (UNDP & Reach). Total damage, considering replacement cost for the collapsed houses, repair cost of partially damaged houses, replacement cost of toilets, household goods, and compound walls, is valued at US$98.6 million. Total losses, which include the cost for salvaging and site clearance and intermediate transitional shelters, are valued at US$30.1 million. Hence, the total cost of effects of the disaster in the housing sector is valued at approximately US$129 million. The details of the estimated value of damage and loss are provided in table 6.

The total needs for recovery and reconstruction are estimated at US$164.5 million, which include cost of salvaging and site clearance, intermediate transitional shelters, cost of reconstructing new houses for the collapsed ones, repairing and retrofitting partially damaged houses, as well as the cost of socio-technical facilitation. It is proposed that recovery and reconstruction include hazard resistant features using appropriate technology options that are environment friendly, have low carbon and water footprint, and use locally available materials and skills. This would require developing technical norms and training masons and engineers to ensure their inclusion in the reconstruction and recovery process. Effective recovery process will require socio-technical facilitation of owner-driven process to ensure that all households, particularly the vulnerable, are included. An active collaboration of UN agencies, other international and national organizations with active participation from the house owners will be the key modality for recovery and reconstruction of the housing sector. It is proposed that short-term activities like material salvaging, intermediate transitional shelters, and planning for long-term durable housing be done in a duration of up to 12 months. The reconstruction of long-term durable housing and repairs and retrofitting of houses will take up to 36 months.

Table 6: Total Damage, Loss, and Need by Province/District - Housing

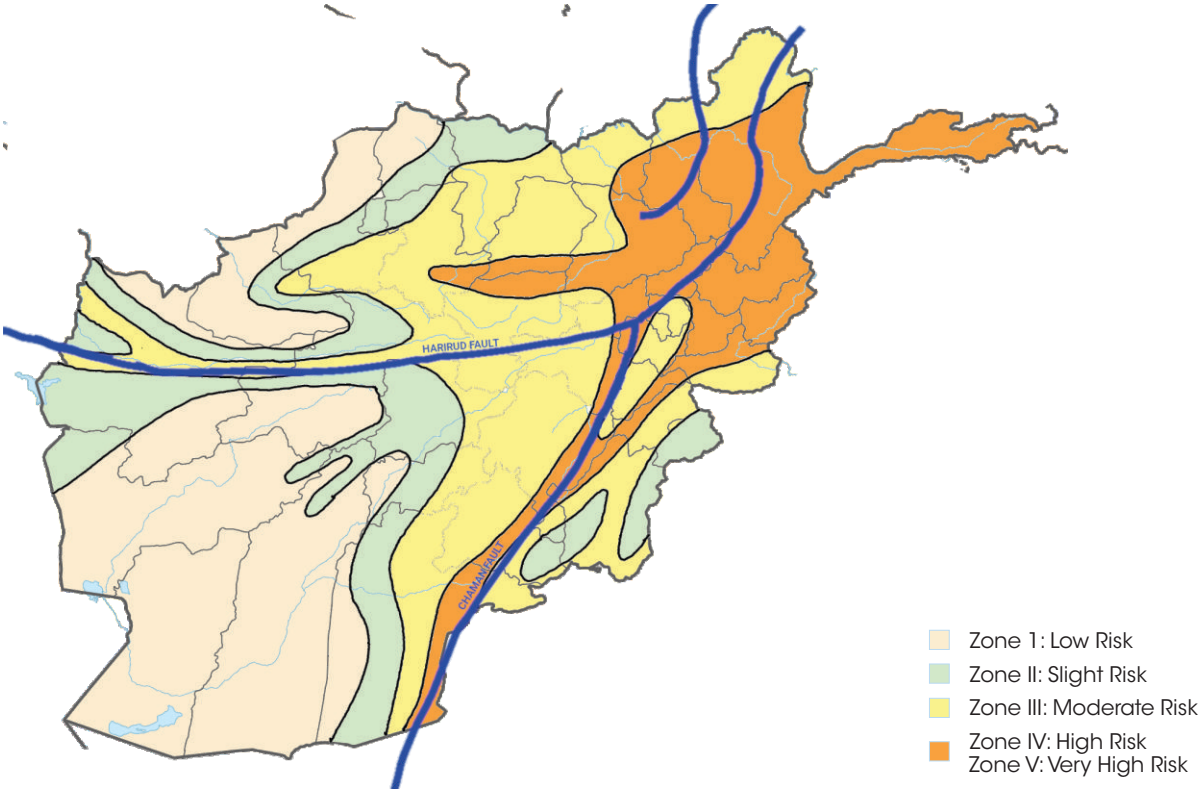
Province/District	Total Damage (US$)	Total Loss (US$)	Total Need (US$)
Ghoryan	1,013,485	307,400	1,687,884
Gulran	6,896,379	2,136,800	11,487,249
Guzara	6,958,840	2,905,600	12,995,136
Herat	20,975,083	6,936,800	35,933,622
Injil	26,737,990	7,327,100	43,711,800
Karukh	864,466	148,400	1,394,763
Koshan	33,393	17,100	66,462
Kushk	23,359,594	7,112,700	38,809,101
Zindajan	11, 731,271	3,214,700	18,371,487
Grand Total	**98,570,500**	**30,106,600**	**164, 457,504**

Background

Herat Province shares a border with Iran to the west and Turkmenistan to the north. The earthquakes and their aftershocks in October 2023 resulted in massive destruction and damage in over 380 villages, affecting over 275,000 people. More than half of the over 1,500 fatalities and over 2,600 injured were women and children. Injil, Kushk/Rabat-e-Sangai, Zindajan, Gulran, Herat and Kohsan Districts are the most affected.

Afghanistan is in a tectonically active region of the world. Compressional tectonics due to the Indian plate colliding with the Eurasian plate and pushing northward at a pace of 40 mm/year has resulted in mountains in northern Pakistan and Afghanistan. The Himalayan, Karakoram, Pamir, and Hindu Kush ranges are among the world's tallest mountains, having formed as a result of the plate tectonics. It is this collisional plate tectonics that creates fault lines and causes earthquake activity. This series of earthquakes occurred as the result of thrust faulting at shallow depths on the Harirud fault with a right-lateral strike-slip movement near the far western terminus of the Hindu Kush mountain range. Herat lies along the Harirud fault in the moderate risk zone (map 3).

Map 3: Seismic Risk Zonation Map of Afghanistan



Source: UNOPS 'Map of Afghanistan Earthquake Zones (redrawn from the original map to enhance resolution)

Objectives

The objectives of assessing the post-disaster damage, loss, and needs are to:

1. Accelerate housing recovery of households whose houses have collapsed or are damaged; and
2. Foster resilient reconstruction by identifying ways to build better/more resilient, including vernacular designs, local materials, hazard resistant technologies, training of local masons, etc.

The housing sector assessment aims to improve the housing response in the aftermath of the earthquakes with inputs in areas such as policy, institutional roles and responsibilities; coordination mechanisms; institutional strengthening, including capacity building activities; financial strategies; information management, monitoring and evaluation, and communication; and water and sanitation linked to housing and settlements.

2. Pre-disaster Conditions

Demography

Herat Province boasts a large population, making it one of the most populous in Afghanistan. It has a youthful demographic, with 50 percent of its population under 16.8 years. Herat City is home to 40.1 percent of the population and, therefore, has the highest density (2,383 persons/sq km) in the province. There are some areas in the province that have population density as low as only 10 persons/sq km. Literacy levels are low (47.9 percent), with a noticeable gender gap of men having a higher literacy rate (55.4 percent) than women (40.5 percent). The literacy rate in Herat City is higher than average at 62.8 percent, while some districts have as low as 20 percent. The average household size in Herat Province is 5.7 persons, which is much smaller than the national average of 7.4 persons.

Housing in Afghanistan

Housing in Afghanistan presents a significant challenge, particularly due to inadequate policies, low governance capacities, rapid population growth, insufficient financial resources, land supply issues (terrain and proximity to urban areas), suboptimal use of construction materials, and lack of skilled human resources. These factors have resulted in the current housing crisis. Estimates indicate a need for more than 1 million houses, with 70 percent of these required in urban areas. However, the vast majority of the population—between 90 percent and 95 percent—cannot afford adequate housing. Poor economic conditions often result in poor maintenance of the houses and inappropriate additions and modifications. As a result, the existing housing stock continues to be increasingly vulnerable.

Houses in Afghanistan are mostly non-engineered and constructed by owners themselves using locally available skills. There is no system of building permission in rural areas and the house owners construct as and when needed in an incremental manner. Local artisans provide the technical know-how to build with locally available materials. Households in consultation with the local artisans decide upon design, materials, and estimated budget.

Architecture and housing typologies in Herat

Herati rural housing reflects a less rigid social order compared to urban areas, with no formal hierarchy of spaces. Most houses are single storey. Some rural houses are also two-storied and have livestock and storage on the ground floor and living quarters on the upper floor. Unlike urban dwellings, there are no elaborate series of courtyards and entrance ways separating family members from street life. Instead, there is only an entrance door between the street and the inner courtyard, offering a more open and integrated living space with a simpler and more communal layout. In Herat, traditional houses boast a distinctive architectural style that continues to reflect ancient Persian influence.

Traditionally, the houses have large compounds with multiple rooms accommodating large extended families. The PDNA has considered a household as a unit and there could be multiple households living in a compound. Most of the housing stock is earthen or low strength masonry houses. The houses have walls made of stone-mud matrix, adobe, bricks and stone in

lime/cement mortar masonry. Stone-mud matrix and adobe are the most prevalent walling methods.

In Herat City, brick walls (47.8 percent) and walls of stone masonry with lime/cement mortar (23.5 percent) are the most prevalent, while in other areas of the province, walls are predominantly of mud-stone matrix or pakhsa (51.8 percent) and adobe (35 percent). Similarly, there are differences in roofing in Herat City and other areas. In Herat City, the predominant roof types are reinforced cement concrete (RCC) (42.8 percent) and brick jack arches in lime mortar on steel I-section (25.1 percent), whereas in other areas of the province, roof types are adobe domes and vaults (64.6 percent) and soil/mud on wooden understructure (17.3 percent) So clearly the housing typologies in Herat City are very different from the rest of the province, which is mostly rural. Urban houses are mostly brick-cement masonry walls with RCC roof, while rural houses are earthen walls (pakhsa or adobe) with shallow vaults or domes made of adobe. These domes and vaults contribute to the unique and traditional aesthetic of the buildings. This architectural tradition is not only a testament to the region's history, but it also represents a continuation of the cultural and architectural legacy of Great Khorasan and Persian influence in Afghanistan.

The preservation of these traditional houses with their domical vaults within Herat's urban area serves as a tangible link to the past, showcasing the endurance of a distinctive architectural style that continues to define the local built environment. As modernization advances, the persistence of these traditional houses within the urban fabric of Herat underlines their cultural and historical significance as well as their value as architectural heritage.

Tenure

In Herat Province, approximately 75.1 percent of households own their houses. In Herat City, about one-fourth of households rent. In other areas, ownership of houses is between 80 percent and 95 percent. Data on women-owned houses are not available, however, as cultural norms make males head of the family, irrespective of age, not many houses are likely to be owned by women. Renters are few, between 1 percent and 4 percent. Between 3 percent and 18 percent households in various districts live without any tenure, either without rent payment with permission from the owners or on agricultural land as sharecroppers.

Services

Approximately 65.8 percent of households in Herat Province have access to drinking water, but piped water to households is available only to about 24 percent of households. The main sources of water are dug wells, natural springs, or borewells. Nearly 53.1 percent of households in Herat Province use fuelwood or animal dung for cooking. While more than 85 percent of households in Herat City use LPG, it is not so common in other districts. In areas other than Herat City, the proportion of households using fuelwood or animal dung varies between 55 percent and 96.4 percent. A significant 96.1 percent have electricity from various sources, including solar, kerosene, or grid supply. Grid supply is limited and there are areas without any access to the grid, where lighting is almost solely from solar energy.

Approximately 60.3 percent of households have toilets. This is the highest proportion among provinces in the whole of Afghanistan. However, the number is very dismal if Herat City is discounted as toilets are mostly concentrated there. In other areas of the province, only 10

percent to 15 percent of households have toilets, most of which are pit latrines with or without slab. Open defecation is the most common practice.

Household assets and goods

The household assets or goods are few and quite basic. Mobile phones (about 75 percent), watches (49 percent), motorbikes (36 percent), bicycles (26 percent), and radios (22 percent) are the most common household goods. In addition, kitchen utensils, storage boxes, and sewing machines are other common household goods.

Building codes in Afghanistan

Afghanistan has an Afghan Structural Code (ASC) (2012) prepared by the Afghan National Standards Authority, which provides minimum requirements for design and construction of structural concrete, steel, masonry, and wooden elements. The ASC 2012 provides for building categorization as per use, occupancy and risk, load calculations including seismic loads, and seismic design considerations. However, the ASC 2012 does not cover the vernacular type of construction made with pakhsa, adobe, vaults, domes, and jack arches. This essentially means that the building codes leave out more than 90 percent of rural houses. For cement-based masonry or RCC frame structures, the ASC 2012 provides guidance. However, it is not clear how well provisions of the ASC 2012 are implemented as there is lack of clear legal adoption. There is no system of local governance particularly in rural areas to enforce a system of building permits or regulations.

3. Disaster Effects

Prevalent typologies in the affected area were earthen and low strength masonry houses. The houses were old, unmaintained, without adequate seismic-resilient detailing, and followed deficient construction practices. Coupled with general lack of awareness on seismic risks and poor quality of these inherently low strength structures, the damage was catastrophic. Damage was also observed in cement masonry or RCC frame buildings due to lack of seismic design and detailing. Afghanistan also lacks adequate building codes, particularly for the vernacular type of construction.

It is estimated that the earthquake shocks resulted in **the collapse of 13,516 houses, major damage to 18,434 houses, and minor damage to 17,628 houses in over 380 villages across the nine affected districts of Herat Province** (table 7).

Table 7: Extent of Earthquake Damage to Houses in Herat Province by District

District	Houses completely collapsed	Houses with major damage	Houses with minor damage
Ghoryan	140	186	184
Gulran	1,010	1,252	1,017
Guzara	220	1,252	1,056
Herat	2,381	5,062	3,614
Injil	3,701	4,029	6,682
Karukh	26	136	635
Koshan	0	19	0
Kushk	3,384	4,143	3,823
Zindajan	2,654	623	617
Total	**13,516**	**18,434**	**17,628**

Source: MSRAF (UNOCHA) and HBDA (UNDP & REACH)

Field observations indicate that the primary reasons for failures in these vernacular houses were intrinsic weak qualities of the materials, a lack of integrity between different structural elements, and degradation of structure over time. The result of all these vulnerabilities was out-of-plane toppling of walls; corner separation; failures under in-plane loading such as diagonal cracks; and collapse of floor and roof due to loss of vertical load-bearing elements such as walls.

The average size of a house is approximately 50 sq m and cost of construction of vernacular houses is considered to be approximately US$60 per sq m. This is based on key informant interviews and field discussions with artisans and engineers. The replacement cost of an average-sized vernacular house of 50 sq m has been calculated to be US$3,000. The replacement cost of 100 percent was considered for fully collapsed houses or those damaged beyond repair. For houses with major damage, 50 percent of the replacement cost has been considered. For houses with minor damage, 25 percent of the replacement cost has been considered. **US$81.4 million is the estimated cost of damage to housing structures.**

Only about 15 percent of the houses had toilets. The same extent of damage has been assumed for toilets in fully collapsed houses and those with major and minor damage. The estimated replacement cost per unit of toilet and bathroom for a fully collapsed bathroom and toilet is US$100, for major damage US$50, and for minor damage US$25. The **estimated damage cost to sanitation facilities (bathrooms and toilets) is approximately US$0.4 million.**

For fully collapsed houses, a lump sum estimate of US$500 per household has been considered for damaged household goods. Household goods may include kitchen utensils, sewing machines, or other miscellaneous items. For houses with major damage, the household goods are estimated at US$100, and no cost has been considered for houses with minor damage. **Total cost of household goods damage is estimated to be approximately US$8.6 million.**

Compound walls are common in the region and provide private space for the family, particularly women and children. As these are free standing walls, there has been damage to these walls. An estimate of 10 percent of the housing damage cost has been assumed toward damage to compound walls. **Estimated cost of damage to compound walls is about US$8.1 million.**

More than 95 percent of the houses are made of vernacular local materials, mostly earthen. A lot of material, particularly earth, doors, windows, wooden rafters, etc., can be salvaged. If unbroken, it is possible to reuse them as it is or it could be recycled and used again in different forms. The material from these vernacular houses is a resource, not a waste. Only a small percentage of materials may not be in any usable condition and may have to be discarded and disposed of. This waste too is likely to be in fully collapsed houses. **Estimated at the rate of US$2/sq m, total cost of salvaging and site clearance is approximately US$1.4 million.**

Many people who have lost houses completely or who have severely damaged houses do not have a roof over their heads. It will take some time for these 31,950 households to rebuild their houses. This process will take time as the new houses, or the repairs and retrofitting have to comply with seismic resistant norms and building codes. Until then, in the intermediate phase, transitional shelters present an additional cost that is counted toward the loss. **It is estimated the loss due to intermediate transitional shelters will be about US$28.8 million.**

The total damage cost to housing is US$98.6 million and losses are US$30.1 million, totaling approximately US$128.7 million. The detailed breakdown of the damage and loss estimate is summarized in table 8.

Table 8: Estimated Value of Damage and Loss in the Housing Sector

Estimation of Damage to Housing	US$, millions
a) Houses collapsed or damaged beyond repair	40.6
b) Houses with major damage	27.7
c) Houses with minor damage	13.2
d) Sanitation facilities (bath & toilet) damage	0.4
e) Household goods damaged	8.6
f) Other assets (compound walls)	8.1
Total Damage, US$, millions	**98.6**
Estimation of Change in Economic Flows/Losses	
g) Rental income loss	0.0
h) Cost of salvaging and site clearance	1.4
i) Cost of intermediate transitional shelters	28.8
Total Losses, US$, millions	**30.1**
Total Damage & Loss, US$, millions	**128.7**

4. Disaster Impacts

The impact of housing damage and losses on affected households is very significant. It is not only the loss of asset, but also the safety, security, dignity, and identity of the households have been affected. Housing in Afghanistan has been an incremental process with its development over generations. The importance of housing as an asset for the household in a poor subsistence economy cannot be overstated. Many households will be unable to regain dignified living unless supported. Women have been particularly affected as housing compounds were spaces for them to be free, comfortable as well as engage in livelihood activities within the sociocultural restrictions.

A Closer Look: Gender Impact

As they were more likely to be indoors, women were more affected by the earthquakes.

While most men were working outside their homes at the time of the earthquakes, due to cultural norms and DFA-imposed restrictions to women's rights and their freedom of movement, women were more likely to be indoors when the earthquakes occurred. This resulted in a higher rate of women injured (59 percent), and a higher percentage of women casualties (58 percent of adults who lost their lives were women).[38]

In total, 6,800 women-headed households (WHHs), representing 14 percent of affected households, were affected. For example, in one village of Injil District, district that accounts for the largest number of affected WHHs, 20 percent of the WHHs reported that their home was severely damaged by the earthquakes and 60 percent shared that the damage was moderate.[39]

Beyond the impact on women's shelters and homes, across all affected districts, damage to cooking infrastructures within houses, including kitchens and utensils, has significantly impacted the availability of food within communities, which was largely made available thanks to women's labor in these spaces. This is combined with damage to common oven and cooking spaces, which are also one of the few places where joint activities can be carried out by women and where they are able to interact with other women. In focus group discussions (FGDs) held, women mentioned that it was not possible to make bread for their households because cooking utensils were buried under the rubble and village ovens were destroyed. Common oven and cooking spaces are also one of the few places where joint activities can be carried out by women and where they are able to interact with other women. As such, their destruction is also of great concern for the social fabric of the community and women's mental health. Women mentioned the reconstruction of these spaces as a top priority for recovery actors to take into account.

The housing sector's response must be tailored to women's specific needs, attending to barriers faced by WHHs in accessing aid and public spaces, where women tend to rely on adult men family members when trying to participate, be informed, and access early recovery initiatives. WHHs are more likely to be left out of recovery support. Reconstruction efforts also need to prioritize rebuilding cooking spaces within communities, understanding them as crucial, habilitating assets to provide food security and promote social cohesion.

5. Recovery and Reconstruction Needs

Households will need to be supported according to the extent of damage to their houses. Households with fully collapsed houses or houses with irreparable damage will need to be supported with new house construction. For reconstruction, it is important to support all eligible households with equal financial assistance irrespective of their earlier house size. The construction cost of **a core house of 30 sq m is estimated at US$3,600 at US$120/sq m.** With future incremental additions to this initial core house of 30 sq m, house owners will be able to build overtime a home that fulfills the needs of growing families. The core house's construction must include hazard resistant features to mitigate the risk of future disasters. **It is estimated that US$48.7 million would be required to reconstruct 13,516 houses.** Cost of major repairs and retrofitting is estimated at the rate of one-third of total construction cost at US$40/sq m. **Taking 50 sq m as the average size of a house, financial needs for major repairs and recovery at US$2,000 per house comes to about US$36.9 million for 18,434 houses. Similarly, for minor repairs and retrofitting, the total financial need is estimated at US$17.6 million for 17,628 houses at the cost of US$1,000 per house at the rate of US$20/sq m.**

Of the total 49,578 houses with various extent of damage across categories, only about 15 percent, i.e., 7,437 houses, had toilets. Recovery provides an opportunity to improve sanitation facilities. Better sanitation facilities in homes are a critical need. It is recommended each newly constructed house to have facilities for baths and toilets. Also, houses with damaged toilets will need repairs. The total need, therefore, is to construct 13,516 new baths and toilets, major repairs of 2,765 toilets, and minor repairs of 2,644 toilets. Assuming cost of construction of appropriate new sanitation facilities at US$250 per house, cost of major repairs at US$100 per house, and cost of minor repairs at US$50 per house, the **total need of sanitation facilities (bath and toilet) is estimated to be US$3.8 million.**

Before reconstruction can be undertaken, the rubble of collapsed houses will have to be removed or demolished where there are still standing parts of collapsed houses. In Herat Province, earth, stone, and wood are the primary materials of more than 95 percent of the houses. All these materials can be reused or recycled. Therefore, debris is a resource that people can salvage, recycle, and reuse. Salvaging and site clearance is recommended as a household process. There may be a need for some basic tools, like crowbars, hammers, wheelbarrows, ropes, plastic sheets, etc. Any RCC building that is severely damaged would actually require demolition and debris removal. However, in rural areas of Herat, such buildings are few and isolated. Therefore, such debris is expected to be insignificant. **Considering US$2/sq m toward tools and labor for salvaging and site clearance for fully collapsed houses, the total need is estimated to be approximately US$1.4 million.**

Reconstruction, repairs, and retrofitting is a time-consuming process. Transitional shelters are needed to provide the affected people a secure and habitable living space until durable housing has been reconstructed. This ensures privacy and dignity to households and enables them to participate in durable house reconstruction. It is essential these transitional shelters last at least until the durable housing reconstruction is complete. It is estimated that the 31,950 households who have lost their houses or who need major repairs and retrofitting will need intermediate shelter. **Considering the cost of an intermediate transitional shelter at US$900, the total need is estimated to be approximately US$28.8 million.**

Reconstruction, repairs, and retrofitting of durable housing needs to be undertaken in a way that houses can resist future natural hazards. The performance of the house in terms of durability is recommended to be improved compared to the old housing stock. The recovery process should

ensure the achievement of disaster-resistant houses. This will require that house owners and local artisans are mobilized, trained, and facilitated to work in alignment with the objective of ensuring improved houses with better hazard resistance. For undertaking such a process of reconstruction, repairs, and retrofitting, the community will need guidance, advice, and handholding. The reconstruction and recovery will also depend greatly on the availability of skilled artisans, particularly because they will be the guide and resource persons for house owners. There will be a need to train at least 2,500 masons and carpenters in disaster resilient features of construction. **The cost of such socio-technical facilitation, including training, is estimated at US$27.4 million.**

Table 9: Estimated Recovery Needs of the Housing Sector

Estimation of Recovery Needs	US$, millions
a) Housing reconstruction (only core house considered)	48.7
b) Houses requiring major repairs and retrofitting	36.9
c) Houses requiring minor repairs and retrofitting	17.6
d) Sanitation facilities in the houses	3.8
e) Salvaging and site clearance	1.4
f) Intermediate transitional shelters	28.8
g) Socio-technical facilitation costs	27.4
Total Recovery Needs, US$, millions	**164.5**

Guiding Principles for Housing Recovery and Reconstruction

1. **Build back better:** Recovery should be resilient and, therefore, reconstruction should be used as an opportunity to make improvements in construction technologies and practices. Hazard resistance of the reconstructed and repaired houses should be improved.

2. **"Do no harm":** Housing assistance and delivery of socio-technical services should be done in such a way that it does not create disparity or conflicts between various community members and households across the affected villages and region. Housing assistance should be a process of strengthening social cohesion and not creating divisions or conflicts.

3. **Owner-driven reconstruction:** Owner-driven reconstruction after a disaster is a paradigm that places the affected individuals and communities at the forefront of rebuilding efforts, empowering them to actively participate in the reconstruction process. This approach recognizes the house owners' agency and enables them to make informed decisions about their homes' reconstruction. This, in turn, fosters a sense of ownership and, ultimately, results in communities that are more resilient and self-reliant in the face of future disasters.

4. **Cultural appropriateness:** Resilient housing efforts should be culturally appropriate, considering the social and cultural context of the affected community. Vernacular building practices deeply rooted in the cultural and historical context of a specific region have enabled communities to build their own houses for generations and develop capacity in harsh physical landscapes and multi-hazardous conditions. These vernacular practices need to be strengthened with modern scientific knowledge to provide appropriate housing solutions.

5. **Incremental housing design:** The design of the house should be such that more rooms may be added to the initial core house built under reconstruction assistance without compromising the structural performance. As families grow, so does the house. Additions and modifications are part of the vernacular construction process. This incremental housing process should be part of the design.

6. **Strengthening local economy:** Housing reconstruction should strengthen the local economy, particularly the informal sector. A large proportion of the cost for housing reconstruction is labor and material production. This can significantly make a positive impact on local livelihoods and the economy.

7. **Social inclusion:** This principle is about ensuring that housing reconstruction efforts do not exacerbate existing inequalities but ensure inclusion of the poor, vulnerable, and marginalized groups, including women, persons with disabilities, uncared elderly or children, landless, etc. This also means that "no one is left behind." Housing reconstruction approach should preserve social norms, neighborhoods, and livelihoods. This principle also involves promoting dialogue, addressing grievances, and ensuring that recovery efforts do not exacerbate any existing social conflict.

8. **Gender equality:** This principle involves ensuring that women are involved in decision-making and implementation processes and that recovery efforts address the specific needs and priorities of women and girls. Context-specific ways should be found to encourage creating housing with gender focus.

9. **Capacity building:** Housing reconstruction and recovery should prioritize capacity building, strengthening the skills and knowledge of local communities and other stakeholder institutions. This ensures that communities are better prepared to respond to future disasters and are more resilient to their impacts.

10. **Sustainability:** Housing reconstruction approaches should prioritize environmental sustainability, promoting sustainable land use practices, protecting natural resources, and reducing greenhouse gas emissions with due consideration of concerns of climate change.

Strategy for Recovery and Reconstruction

With Afghanistan being prone to seismic activity, the potential risk of earthquakes underscores the urgency for robust housing policies and post-disaster assistance measures that incorporate earthquake-resistant construction technologies and practices. The risk is that a large number of households will remain homeless or live in vulnerable houses. Unless an effective strategy to

reach all the affected households is adopted, vulnerabilities and risks may increase. In Afghanistan the biggest challenge would be to have an outreach covering all the affected households. Financial and socio-technical assistance for house reconstruction, repair, and retrofitting will be required for all affected households, with special attention to the poor and vulnerable. The housing recovery will be a progressive journey for the households—from current emergency makeshift arrangements to transitional shelters to long-term durable housing.

Intermediate Shelters

The earthquakes caused the collapse or major damage to many houses, leaving many households homeless. Even the households whose homes have not sustained irreparable damage are afraid of aftershocks and so unwilling to reoccupy damaged homes due to the potential risk that such occurrences may occur again. As a result, many families are now without a place to live and are in some makeshift arrangement. Humanitarian response was in the form of distribution of tents or kits with basic shelter materials and tools, such as plastic sheeting, etc. This emergency response was rapid and hence useful but is not intended to provide medium-term shelter when protection from harsh weather conditions or other household needs become priority. Also due to heavy dust storms in the region, the tents cannot last very long. On October 12, a dust storm destroyed hundreds of tents. This too emphasized the need for transitional shelters.

Intermediate transitional shelters are a critical need of the affected families during progression from emergency situations to long-term resilient housing. Reconstruction of new houses or retrofitting of damaged houses will take some time. Therefore, during this intermediate period, there is a need for transitional shelters that can protect families from the elements, provide safety and privacy, and enable them to restart their occupation for livelihood. As it is now the winter season, this need is a priority and if not addressed, many families may suffer the consequences of not having shelter or may be forced to use unsafe damaged houses.

To be used for the intermediate period only until long-term durable houses are built, these transitional shelters must be timely and cost-effective. Construction of transitional shelters should clearly be based on principles of hazard resistance and ensure that under no circumstances, people do not suffer any fatal injury because of damage to shelters in case of continuing aftershocks. Quick delivery of transitional shelters should be planned relying on an owner-driven reconstruction approach. Use of local materials would further enable the households to get involved and build their own shelters quickly. Familiarity with the materials and construction technology would also ensure the transitional shelters can be modified, repurposed, or used for other supplementary uses like storage within the compound after the long-term durable houses are constructed.

More than 230 households are already constructing their own transitional shelters using salvaged adobe blocks, doors, and windows, and locally procured chajaki (mat of reeds) and wood/bamboo. Facilitated by UNDP, the community will soon be able to move into their transitional shelters before the weather conditions further worsen. The strategy for long-term durable and resilient houses can be built upon lessons from such experiences of an owner-driven approach.

Reconstruction, Repairs, and Retrofitting

Housing reconstruction, repairs, and retrofitting in the aftermath of the Herat earthquakes are expected to take about three to five years. Enabling the affected households through the Owner-Driven Reconstruction (ODR) framework to rebuild hazard resistant long-term durable houses is the quickest way to effective recovery. Financial and technical assistance will be required to support households in undertaking the reconstruction, with grants disbursed in tranches based on compliance with hazard resistant construction guidelines at completion of specified stages. There will be a need to identify the families through a census survey to know the extent of damage so that appropriate assistance may be provided either for reconstruction or for repairs and retrofitting. Corresponding to the three categories of damage, reconstruction may include three assistance packages: (i) reconstruction of new house; (ii) major repairs and retrofitting; and (iii) minor repairs and retrofitting.

Achieving hazard resilient house reconstruction through an owner-driven process necessitates a multifaceted approach. The ODR process would involve providing financial support to each house owner through a conditional grant in installments tied to the progress and compliance with technical guidelines. Financial assistance to the house owners may be provided in three installments. Empowering house owners is paramount, involving training programs and awareness campaigns to impart knowledge on hazard resistant construction practices. Technical assistance would play a pivotal role, offering expert guidance throughout the reconstruction. Skills of local artisans will also need to be strengthened to ensure that technical guidelines are implemented in house construction. Artisans will also need training in repairs and retrofitting. There should be monitoring and evaluation mechanisms, including regular inspections and mid-course corrections, to maintain construction standards and inclusion of hazard resistant features.

Implementation Arrangements

With help from a private sector company, the DFA have planned construction of about 2,000 houses. Collaboration among UN, international organizations, technical agencies, and NGOs will be essential to address the housing recovery of large numbers of households in distress. This collaborative approach can aid in designing and implementing earthquake-resistant construction guidelines and ensure long-term durable housing in the affected region. Through this collaboration, a set of guidelines of an ODR framework for financial assistance, a basket of technical solutions, minimum technical compliance norms for hazard resistance, and guidelines for socio-technical facilitation including training of local masons and carpenters should be articulated. It will enable various agencies to develop appropriate solutions and processes to implement while aligning with the guiding principles and overall approach. A coordination mechanism will be instituted to ensure the coordinated outreach and coverage of the affected households, information related to progress, sharing of knowledge resources during implementation, coordinating strategically with the DFA at district and national level for smooth process of delivering assistance to the people. At the community level, community committees with elders may be set up for community mobilization and quality assurance.

Cross-Cutting Issues

Gender: The housing reconstruction process must include the participation of women. The owner-driven process by design should place people in leadership roles, but the restrictive social norms may not provide enough space for addressing women's concerns. Therefore, facilitating women to identify, express, and include their needs and suggestions for the house design and construction is critical. Socio-technical facilitation for reconstruction should involve women community workers and engineers to encourage and ensure women's inputs and strengthen their role in the construction planning and management.

The reconstruction process should ensure attention to women-headed households in the affected communities with due considerations of socio-political restrictions and constraints. The usual domestic responsibilities of women heads of household, such as obtaining essential services, responsibilities of providing food for the family, and their involvement in agriculture and other sources of income, already overload them. Therefore, adequate social support must be facilitated for women-headed households. Household services particularly related to water and cooking should be addressed well in the house design, otherwise the drudgery for women may increase. Efforts should be made to identify the community spaces within the housing neighborhoods that can be accessible to women so that they can get time to share together. Reconstruction management planning must also factor in low women literacy in the earthquake-affected areas.

The vast majority of land in Afghanistan is either undocumented, or documented with customary mechanisms that tend to privilege the property rights of men. Less than 5 percent of women have land or property ownership.[40] Inequitable land ownership further accentuates gender inequality. The housing reconstruction process should initiate dialogue with the community and its representatives to sensitize and encourage co-ownership of women of the houses reconstructed or repaired.

Environment: Environmental concerns need to be considered and appropriate guidelines need to be incorporated in the recovery process. First and foremost, the environment-friendly component of recovery is to give due attention to repairs and retrofitting, so that the houses that can be saved are not unnecessarily demolished. Repairs and retrofitting to save any possible house will also save many natural resources. Secondly, materials and technologies to be used for reconstruction, repairs, and retrofitting must be environmentally friendly. Vernacular materials include earth, stone, and wood as they have low embodied energy and a lifecycle that allows them to be reused and recycled multiple times. It is preferable that these materials are used in the housing reconstruction predominantly and high energy materials may be used only for critical aspects essential to improve hazard resistance. Water is another critical resource in the desert region of Herat and, therefore, it is of utmost importance to adopt technology that makes judicious use of water and helps conserve this environmental resource.

DRR: Ensuring disaster risk reduction is one of the key concerns during reconstruction, repairs, and retrofitting. As climate and DRR are closely linked, it is necessary to ensure climate concerns are integrated in the choice of materials and technology. Use of low carbon technologies and low water use technologies are recommended in Afghanistan.

Most risk to human life is from the buildings and not only from natural events. Compliance with building codes reduces such disaster risks. As the ASC 2012 does not include vernacular construction, there is a need to develop special guidelines for vernacular materials and technologies. Some work on developing appropriate technologies was undertaken by UNDP

during the 2022 earthquake in Khost and Paktika in southeast Afghanistan. These guidelines need to be further extended to relevant housing typologies of the Herat region. Inclusion of technical norms for hazard resistance is one of the critical components for DRR and, therefore, may require all agencies to collaboratively agree on the same norms and communicate them to house owners for construction in an ODR framework.

Conflict sensitivity: For effective delivery of assistance to the affected community for housing recovery in Afghanistan, it is critical to undertake socio-technical processes with an awareness of the socio-political situation and constraints. Coordinating with the DFA may be needed, particularly for the selection of villages and households for housing support. At the local level in the villages, wakils (elder members) are an important body who enjoy the trust of the community and should be provided with the necessary guidance. It will also be important for the owner-driven process of housing recovery to be rolled out with their cooperation.

Recovery and Reconstruction Plan

Recovery planning will have two phases—short term (up to 1 year) and long term (2-3 years).

Short Term (up to 1 year)

The recovery strategy's short-term activities will be to:

- salvage materials for reuse and recycle, and debris clearance;
- address the transitional shelter needs of the affected people;
- plan and initiate the reconstruction of long-term durable housing; and
- initiate housing reconstruction, repairs, and retrofitting.

Salvaging materials for reuse and recycle: Households will engage with salvaging materials and can do this faster with cash for work support. This activity should also include women of the households. Salvage work should be done before long-term durable housing construction begins.

Construction of transitional shelters: Transitional shelters are required to enable affected households to live with some degree of comfort and dignity until long-term durable house reconstruction, or repair and retrofitting is completed. The transitional shelter response should aim to be completed within 3 to 6 months. It needs to start urgently and to be completed at the earliest so that people can manage in the harsh winter season.

Planning long-term durable housing reconstruction and repairs and retrofitting: There should be a plan in place before the start of long-term durable housing reconstruction and repairs and retrofitting. There is a need for a clear financial package for the communities as per the extent of damage. Unless a common financial package is developed, the reconstruction may not proceed even with the best community processes. There is also a need for a basket of technology options, technical guidelines for each technology, technical guidelines for repairs and retrofitting, and procedures for accessing the assistance in installments, a system for on-site supervision, and

training of masons. There should also be guidelines for socio-technical facilitation. The UN and other international organizations along with technical organizations should prepare a plan with all these components during this phase.

The plan of activities will focus on starting long-term reconstruction and recovery at the end of 12 months. This will include the following:

- Identification of eligible households for durable housing support
- Disbursement of financial assistance
- Training of masons and carpenters
- Socio-technical facilitation for construction
- On-site guidance and supervision of construction

Initiating housing reconstruction, repairs, and retrofitting of long-term durable shelters: The affected households are waiting for houses and realize that housing provides the setting for their livelihood and economic recovery. Any delay in starting durable house construction will risk people starting to make unsafe, poor-quality houses in desperation. Therefore, implementing the plan to reconstruct, repair, and retrofit should start in a timely manner.

Medium Term (1–3 years)

It is planned to complete durable housing in a 36-month period. The ODR approach enables scaling up in all the affected villages. As it is proposed to focus on local materials and technologies, the availability of primary construction materials is abundant. However, market facilitation may be required for some critical materials necessary for hazard resistance. Such planning needs to be taken up in a timely manner so that reconstruction and recovery can be completed in the proposed time period. These housing needs can be effectively met with good coordination among UN agencies, international organizations, and other NGOs, and successful market mobilization. Therefore, the process of implementing reconstruction and recovery programs should be scaled in this period at the earliest to cover 100 percent of the affected households.

The following aspects for reconstruction and recovery will be taken up during this period to complete reconstruction and recovery:

Disbursing financial assistance: For long-term durable housing and repairs and retrofitting, there will be a need to identify the eligible households affected by the earthquake and provide them with financial assistance in installments as per the package. These households will have to be guided on how to access this conditional assistance on the basis of progress in construction. Care should be taken to include women headed households and ensure that they are not left out.

Training masons and carpenters: Skilled artisans are critical for construction, and they will need to be trained as per the technical guidelines to incorporate them in their construction practice. Aside from training the artisans on technical construction skills, the training should incorporate

specific gender sensitivity sessions to build capacities of the local artisans to identify and address gender-specific needs, risks and protection-related issues especially when engaging with women-headed households in the (re)construction of houses. On-site hands-on training to masons and carpenters should be delivered during reconstruction and repairs and retrofitting. To complete the construction in the proposed period, the masons can also be mobilized from the neighboring provinces. Training will also help in knowledge transfer about hazard safety in long-term when more houses are constructed later in future.

Socio-technical facilitation for construction: The affected households need handholding during the construction process. A team of engineers, master masons, and community workers will support people in accessing financial assistance, choice of technology, budgeting the house construction, market linkages for procurement of materials, compliance with technical norms, mobilization of skilled labor, grievance redressal, etc. This process will take place during construction by the house owners and their family. Socio-technical facilitation process will ensure that vulnerable families (women headed households, persons with disability, etc.) are not left behind. Efforts should be made to include women in the facilitation teams and identifying inputs on design and construction aspects by the women in the household.

On-site guidance and supervision of construction: There will be a need to guide each house owner family on hazard resistant construction. The guidance will be provided depending on the stage of construction. Technical teams of engineers and master masons will ensure hazard resistant features are properly included in construction and quality of work is maintained. At the completion of each construction stage, the technical team will make recommendations for the release of the next installment. This on-site guidance will be most crucial for ensuring hazard resistant construction, repairs, and retrofitting.

Considering the situation of the affected households, it is neither desirable nor expected that reconstruction, repairs, and retrofitting should go beyond three years. All the UN agencies and international agencies in cooperation with the affected households can complete the reconstruction and recovery in a 36-month period.

6. Methodology and Limitations

Afghanistan lacks any sort of housing census and thus there is no reliable data on number of houses, materials used, typologies, size or ownership. Therefore, the PDNA depended on making estimates based on available information

In the absence of a census of the damaged houses and households in the affected area, the assessment relied on the building count from satellite imagery analytics. Estimation of damaged houses in the nine districts is based on HBDA data when available and MSRAF elsewhere. The HBDA conducted a detailed sample survey on the extent of damage in the affected villages, documenting structural and non-structural damage to various building elements, particularly walls and roofs. This assessment provides detailed understanding of the pattern and extent of damage in the affected areas. However, this PDNA does not categorize the damage by urban/rural context.

Housing typologies are based on HBDA as well as field visits and observations. The field visits also helped understand the reasons for damage and building vulnerabilities. Costs of material salvage, transitional shelters, etc. are based on post-earthquake experiences so far in the

affected region. As these earthen building typologies are not part of formal building systems covered by building codes or schedule of rates, the replacement cost of these houses is based on field interactions with the artisans and past experiences of reconstruction in Southeast region of Afghanistan that had suffered earthquake in June 2022.

Due to socio-political situation in Afghanistan, gender specific data or details are not available but qualitative assessments are based on field observations, HBDA data and social analysis from the field.

Health and Nutrition

1. Summary

Nine districts in Herat Province were affected by the earthquakes. 1,531 deaths, including those of 827 females, and 2,681 injured, including 1,569 females, were reported. The injured included two health staff members of health facilities. 20 health cluster partners actively participated in the emergency response to the Herat earthquakes.

The damage and losses in the health sector are estimated at US$7.4 million, out of which the cost of damage is US$3.5 million and total losses are US$3.9 million. 56 public health facilities and two wards of the regional hospital in the center of Herat Province were physically damaged. Additionally, 29 private clinics were damaged, resulting in an overall 86 health facilities damaged by the earthquakes. A more detailed assessment needs to be conducted by a specialized team consisting of engineers, epidemiologists, and public health experts to know the full extent of the disaster and adjust the recovery plans in the mid-term and long term.

The health sector requires US$8 million to meet the needs in restoring physical damage and health care service delivery in the nine affected districts.

The health sector needs to extend far beyond the reconstruction, repair, and re-equipping of the 86 damaged facilities. The stability of essential health and nutrition services for affected populations, particularly displaced persons, must be ensured together with expanded capacity to meet increased demand arising from the earthquakes, including long-term trauma and surgical care for injured persons, physical rehabilitation services, mental health and psychosocial support services, and therapeutic and supplementary feeding for treatment of malnutrition. The health sector needs to maintain/strengthen and expand surveillance and response capacity in affected areas. Looking ahead, the health sector plans will apply an "all hazards" approach to develop and implement a coordinated, inclusive, participatory, whole-of-population health systems early recovery plan to build back better.

The health sector will promote BBB within early recovery approaches, including investments in improving/strengthening the infrastructure, health information systems, preparation of mass casualty plan, integration of primary health care and nutrition services, support to policy and partnership, and workforce development. Achievement of health sector recovery interventions will depend upon sufficient investment of resources, political will, and avoidance of additional emergencies during the recovery period.

Table 10: Total Damage, Loss, and Need by Province/District - Health and Nutrition

Province/District	Total Damage (US$)	Total Loss (US$)	Total Need (US$)
Ghoryan	1,60,000		
Gulran	300,000		
Guzara	270,000		
Herat	820,000		
Injil	7,29,000		
Karukh	210,000		
Koshan	20,000		
Kushk	420,000		
Zindajan	495,000		
Provincial	51,200	3,880,543	7,995,400
Grand Total	**3,475,200**	**3,880,543**	**7,995,400**

2. Pre-Earthquakes Context and Baseline

In the past two decades, significant progress has been made in providing health care to the Afghan population. According to the National Risk and Vulnerability Assessment 2003, only 7 percent of households in rural Afghanistan had health services in their community and 32 percent had to travel less than a quarter day to seek medical assistance[41] while in 2016–17 93 percent had access to health care.[42]

The health sector in Afghanistan is hampered by multiple chronic challenges undermining its performance and compromising population health outcomes. Afghanistan has a population of approximately 34.9 million people, of which at least 60 percent are under the age of 25 years and over 70 percent live in rural areas.[43] The population is growing at an annual growth rate of 2.03 percent.[44] Life expectancy at birth had reached 65.3 years by 2020, while the maternal mortality ratio is estimated to be 620 per 100,000 live births, infant mortality rate is 43 per 1,000 live births and under-five mortality rate is 56 per 1,000 live births.[45]

Twenty years ago, the burden of disease in Afghanistan was dominated by communicable diseases and high numbers of deaths and illnesses among women and children. This pattern has changed and now shows a burden on three fronts—communicable diseases, chronic noncommunicable diseases, and emergencies due to disasters and road traffic accidents. In addition, there is an ongoing challenge of still too many maternal and neonatal deaths. The protracted conflict has resulted in a high burden of mental disorders, with high rates of post-traumatic stress disorders, depression, and anxiety. The prevalence of persons with severe disabilities is 13.9 percent, or 2.5 million, among Afghan adults aged 18 and above.[46]

Afghanistan also faces a significant drug use problem as one in three households has been affected by drug use. The 2015 Afghanistan National Drug Use Survey (ANDUS) indicated that 11.1 percent of the country's population (2.5 million to 2.9 million people) tested positive for narcotic drugs. Furthermore, around 690,000–850,000 females used drugs in Afghanistan, while 1 million to 1.2 million children tested positive for narcotic drugs, predominantly opium/opioids. The prevalence of drug use in Herat was 8.3 percent, according to the 2015 ANDUS.

According to the Humanitarian Response Plan (HRP) 2023, a total of 17.6 million people need health services, and 7.2 million people need nutrition services. In recent years food insecurity has increased considerably and is growing worse, with all provinces showing high levels of food insecurity and nearly 20 million people estimated to be in Emergency (IPC Phase 4) or Crisis (IPC Phase 3) levels of acute food insecurity. Further deterioration of malnutrition is expected in 2024, due to the simultaneous effects of drought and winter, sustained high food prices, reduced income, unemployment, and continued economic decline. The economic and food crisis disproportionately affects women, girls, and women-headed households. According to Nutrition HRP 2024, an estimated 3.9 million people will suffer from acute malnutrition in 2024, including some 857,000 children from severe wasting, 2 million children from moderate wasting, and 1.1 million pregnant and lactating women from acute malnutrition.

Afghanistan is prone to frequently occurring disasters, including droughts, earthquakes, and floods, which regularly lead to substantive internal displacement. The increased economic hardship and high unemployment rate is an all-pervasive negative health determinant, most directly through the inability to buy food and pay for health care.

Background

Afghanistan is the only country in the world using contracting-out of primary health care services to NGOs on a large scale. The Basic Package of Health Services (BPHS) and Essential Package of Hospital Services (EPHS) have been contracted by the de facto MoPH to NGOs since 2003 and 2005, respectively. After the Taliban takeover in August 2021 and the short disruption in the provision of health services, UNICEF and WHO continued to contract the BPHS and EPHS under emergency response to NGOs, and currently, BPHS and EPHS are contracted to NGOs through UNICEF.

In 2022–23, health sector partners developed a common strategy that aims to minimize avoidable morbidity and mortality and strengthen health system resilience. The Health Sector Transitional Strategy (HSTS) proposes a set of priorities for the 2023–25 period with a focus on four strategic directions: (i) Strengthen and expand essential service coverage/utilization; (ii) Sustain and strengthen the essential foundations of the health system; (iii) Strengthen capacities to prevent,

detect, and respond to disease outbreaks and other health emergencies; and (vi) Strengthen the harmonization and alignment of financing for national health priorities.

The de facto MoPH has developed a new roadmap to focus on equitable and acceptable primary health services at district level, which has eight strategic directions: (i) Reduce number of layers of service delivery; (ii) District health-focused approach to strengthen the health system at district level by connecting and overseeing the lower level; (iii) Strengthen community involvement; (iv) Health finance initiatives to ensure continuity and sustainability; v) rationalizing the distribution of existing health facilities; (vi) Upgrade/downgrade existing health facilities; (vii) Change the existing Mobile Health and Nutrition Teams (MHNT) to static health facilities in white areas; and (viii) Establish new health facilities with expanding the scope of services within existing comprehensive health centres (CHCs) and CHC+.[47] This roadmap is currently shared with different stakeholders for discussion yet not operationalized and, if implemented, it will affect the recovery plan in the long term.

The National Health Accounts 2021 confirmed that health expenditure in 2021, compared to the year 2020, increased by 4.7 percent and the increment had significantly affected all components of health expenditures. The current health expenditure (CHE) in 2021 was around US$3 billion. Household out-of-pocket expenditure contributed to the highest proportion of expenditure, accounting for 77.2 percent of CHE, amounting to an estimated US$2.5 billion. The second largest health expenditure was from donor spending, amounting to US$635 million, representing 19.3 percent of CHE. The expenditure on health from public domestic revenue accounted for 3.3 percent of CHE, which is estimated at US$108 million.[48]

Afghanistan's health sector is exempted from the ban on women NGO/UN staff however the recent directive from the de facto MOPH put restrictions on certain activities at community level e.g. public awareness related intervention, dedicated women friendly facilities outside of existing health system clinics. Based on the Health Management Information System Report there are no considerable changes in consultations of health services, disaggregated by sex, age, and disability, and the number of women health care workers who provide primary and secondary health care services are observed from pre-ban status which is confirmed by regular unpublished health cluster monitoring report

Girls enrolled in institutes of health sciences under the de facto MoPH are continuing their education as mid-level health workers. Overall, based on a health workforce assessment conducted in 2023, only 27 percent of all non-specialized medical doctors, 18 percent of all specialized medical doctors, 29 percent of all nurses, and 48 percent of all community health workers are women.[49] The girls enrolled in institutes of health sciences under the de facto MoPH are continuing their education as mid-level health workers.

Herat Province is one of the largest provinces in Afghanistan in terms of population. It has a population of 2.2 million, the majority of whom (1.6 million) live in rural areas and the rest (over 715,000) in urban areas (de facto NSIA, 2023).[50] A total of 470 different types of public and private health facilities and 1,162 health posts are functional in Herat Province (table 11). The de facto MoPH manages only 13 health facilities including a regional hospital located inside Herat City. Some 113 health facilities under the Health Emergency Response (HER) project provide primary health care services managed by the Organization for Health Promotion and Management (OHPM), with the support of WB/UNICEF. Further, the 1,162 health posts that are in the homes of community health workers provide promotive and preventive health services under the de facto MoPH volunteer program in the HER project. In addition, 148 different types of health facilities provide health services through a contract-out model by different local NGOs supported by other

UN agencies and humanitarian actors.[51] At the same time, the private sector provides specialized, primary, and secondary health services through 196 clinics and small hospitals.[52]

Table 11: Number of Types of Public and Private Sector Health Facilities in Herat Province

Health Facility Owner/Implementer	Number of Health Facility
De facto MoPH (Hospital & Clinics)	13
NGO (HER) Primary Health Care Clinics	113
NGO Health Post (HER)	1162
NGOs (Non-HER) Primary Health Care Clinics	148
Private Sector (Clinics & Small Hospitals)	196

There are a total of 149 health facilities and 695 health posts in the nine affected districts of Herat Province (table 12).

Table 12: Pre-disaster Number of Health Facilities in Earthquake-affected Districts by Type and Location

S/N	Name of affected districts	Hps	FHH	HSC	MHTs	BHC	CHC	CHC +	DH	Regional hospital	Drug treatment center	Others	Private HF mainly in Herat City
1	Injil	170	10	3	3	4	7	0	0	1	0	3	196
2	Ghoryan	56	9	1	0	5	0	0	1	0	1	0	
3	Gulran	54	6	2	2	5	0	0	1	0	0	0	
4	Guzara (Nizam Shaheed)	96	6	4	3	6	0	0	1	0	1	1	
5	Herat	59	6	2	5	3	7	0	0	0	4	11	
6	Karukh	52	9	1	0	4	1	1	0	0	0	0	
7	Kushk (Robat Sangi)	97	0	2	1	2	1	0	0	0	0	0	
8	Koshan	47	6	1	0	1	2	0	0	0	0	1	
9	Zindajan	64	3	2	0	2	2	0	0	0	0	0	
Grand Total		**695**	**55**	**18**	**14**	**32**	**20**	**1**	**3**	**1**	**6**	**16**	

Health facility (HF) Health Post (HP), Family Health house (FHH), Health Sub-center (HSC), Mobile Health Team (MHTs), Basic Health Center (BHC), Comprehensive Health Center (CHC), Comprehensive Health Center Plus (CHC+), District Hospital (DH)

A Mass Casualty Management (MCM) plan is in place in the regional hospital. The MCM plan is available in all districts, provincial, and regional hospitals throughout the country. The plan is automatically activated when the number of events/cases exceeds the normal level. The implementation of the plan is carried out in the hospitals, and male and female health workers have been trained by WHO. Approximately 124 health workers have been trained in MCM in 19 provinces including Herat Province, of whom 112 are men and 12 are women while in Herat Province total of 24 health workers including eight women were trained.[53] A feature of the plan is a simulation exercise carried out by the hospital team to prepare for any unexpected events.

Three prominent coordinating bodies exist in Herat Province, namely, the regional health cluster, emergency preparedness and response committees, and provincial de facto public health coordination committees. All of them are fully functional and have periodic and ad hoc meetings. Fortunately, in the phase of response to the earthquakes, no major coordination challenges were reported. Major discussions that took place at these forums addressed the right placing of temporary health facilities, shortages of professional medical staff, and shortages of medicines and other essential equipment. A well-established disease surveillance and response system is in place in Herat Province where 22 sentinel sites are located in primary health care facilities in the province. These sentinel sites report weekly on 17 surveillance-targeted diseases.

Table 13: Summary of Key Health Indicators for Afghanistan and Herat Province (latest available data or estimate)

Epidemiological indicators	Year	Value	Service-related indicators	Year	Value	Source
Afghanistan[54]						
Maternal mortality ratio	2022	620 per 100,000 live births	Pregnant women who had four or more antenatal care visits	2018	21%	WHO, 2023 and AHS 2018
Newborn mortality rate	2020	34 per 1,000 live births	Skilled birth attendance (mostly midwives)	2018	59%	WHO, 2023 and AHS 2018
Under-five mortality rate	2020	55 per 1,000 live births	Total fertility rate per woman	2018	5.1 children	WHO, 2023 and AHS 2018
Children aged 12–23 months who were fully immunized	2018	61%	Mothers fully immunized against tetanus during last pregnancy	2018	40%	AHS 2018
Herat Province[55]						
Pregnant women who had four or more antenatal care visits	2018	30.2%	Skilled birth attendance (mostly midwives)	2018	66.2%	AHS 2018
Children aged 12–23 months who were fully immunized	2018	71.7%	Mothers fully immunized against tetanus during last pregnancy	2018	56%	AHS 2018
Proportion of population using improved sanitation services	2020	67.%	Proportion of population using safely managed drinking water services	2020	82.1%	Income, Expenditure and Labor Force Survey report 2020

3. Assessment of Disaster Effects: Damage and Loss Estimates

Damage: After the earthquakes, a rapid assessment was carried out on provincial health service providers and other relevant stakeholders in the nine affected districts. 56 public health facilities and one regional hospital in the center of Herat Province were physically damaged. Additionally, 29 private clinics were also damaged, resulting in 86 damaged facilities. Among the public health facilities, 44 had minor damage (less than 20 percent), 6 were moderately damaged (between 20 percent–60 percent) and 7 were fully damaged (more than 60 percent) including internal wards of the regional hospital. The minor damage to health facilities also included two drug treatment centers, for adolescents in the Guzara district.

In the nine affected districts, 238 health posts located in the private houses of community health workers were also physically damaged, of which 206 were moderately damaged and 32 fully. The cost of damage to health posts is not considered here as it will be covered by the housing sector in the same damage assessment of other households in the villages.

Additionally, medical and non-medical equipment within the health facilities were also damaged. In 41 public health facilities, the medical and non-medical equipment had minor damage while in 6, it was moderately damaged, and in 7 it was fully damaged. The damage included WASH facilities; however, the electricity facility was not damaged.

The total physical damage cost to public health facilities in public and private buildings is US$3,424,000, of which US$1,099,000 was for minor damage, US$520,000 for moderate damage, and US$1,660,000 for full damage (table 14). The total cost of asset damage (medical and non-medical equipment) in public health facilities is US$51,200.

The cost of damage in private facilities is US$145,000 (the cost of asset and infrastructure damage for private clinics is calculated at US$5,000 per damaged clinic).

Table 14: Estimated Cost of Physical Damage to Health Facility by Type and Scale of Damage

Type of health facility	Cost of minor damaged public health facilities (US$)	Cost of moderately damaged public health facilities (US$)	Cost of fully damaged public health facilities (US$)	Cost of damaged private health facilities (US$)
Family Health House	135,000	520,000	560,000	
Health Sub-Center	260,000			
Basic Health Center	300,000		250,000	
Comprehensive Health Center	234,000		350,000	
District Hospital	30,000			
Regional Hospital	50,000		500,000	
Drug Treatment Center	40,000			
Mother and Child health-related clinics	50,000			
Different Types of Private Health Facility				145,000
238 Health Post damaged cost but under Health Cost of reconstruction is not considered				
Sub-Total	1,099,000	520,000	1,660,000	145,000
Cost of asset damages (medical & non-medical equipment)				51,200
Total				**3,475,200**

Table 15: Scale of Damage of Health Facility and Cost of Repair

Scale of damaged health facilities	Number of health facilities	Average unit cost (US$)	Repair costs (US$)
Number of damaged hospitals to be rehabilitated	1	500,000	500,000
Minor damage (less than 20%)	44	500,000	1,099,000
Moderate damage (20%–60%)	6	24,977.27	520,000
Full damage (above 60%)	6	86,666.60	1,160,000
Private health facility (minor damage)	29	5,000	145,000
Cost of asset damages (medical & non-medical equipment)	86		51,200
Total			**3,475,200**

Table 16: Estimated Cost of Physical Damage to Health Facility by Building Ownership and District

Damage identified per district (physical asset and infrastructure)	Public health facilities in public building (US$)	Public health facilities in rented and private buildings (US$)	Private health facilities in private building (US$)
Herat	675,000.00	-	145,000
Injil	279,000.00	450,000.00	0
Zindajan	340,000.00	166,000.00	0
Ghoryan	80,000.00	80,000.00	0
Kohsan	20,000.00	-	0
Kushk	420,000.00	-	0
Karukh	50,000.00	160,000.00	0
Guzara	150,000.00	120,000.00	0
Sub-total	2,169,000.00	1,110,000	145,000.00
Cost of asset damages (medical & non-medical equipment)			51,200
Total			**3,475,200**

Losses: Partners have established temporary health facilities and mobile outreach capacity to ensure the continuity of health services with a focus on vulnerable populations. These services included deploying temporary health facilities (static and mobile) to replace damaged infrastructure. Additional facilities in the areas hosting IDPs, treatment and long-term care for physical trauma, and treatment and long-term care for mental trauma were initiated. Overall due to the increased caseload of service delivery, rotational health care personnel from other provinces were also mobilized. Additional coordination and disaster management needs, mitigating disaster-related risks to health, and transportation and treatment of injured sent to undamaged facilities were also initiated.

Based on the results of the PDNA conducted by the relevant stakeholders in the nine affected districts, interventions spent to continue and restore service delivery have been calculated as losses at the amount of almost US$3.9 million (table 17). These losses include the installation of containers, mobilization of health workers from neighboring districts and other provinces, training of health workers, and provision of medicine and kits. While the assessment result shows the damage cost per district, losses could not be calculated per district as some post-disaster interventions are being implemented in more than one district. To operationalize the 238 damaged health posts (HPs), there is a need to replace the damaged initial kit (US$500/HP), while the refresher kits are the responsibility of the existing service provider and funding is part of the existing contracts.

Table 17: Estimated Losses in the Health Sector Based on Post-Earthquake Interventions

HEALTH SECTOR LOSS ESTIMATION		
Areas	**Interventions**	**Total (US$)**
Infrastructure	Installing 105 containers for restoration of service delivery	945,000
	Installing 57 tents for restoration of service delivery	85,044
Service Delivery	Mobilizing 9 MHTs for 10 days	81,000
	Provision of 55 different medical kits and supplies	2,166,499
	Mobilizing staff for short period in first month post-earthquake	35,000
	Training of 80 staff (66 male and 14 female) on mental health and psychosocial support for a week	24,000
	Number of people injured, average unit costs for moderate and severe injuries per month, x period for rehabilitation and care	315,000
	Health posts re-operationalization cost (200*$500)	119,000
Managing Risk	Cost of laboratory/surveillance/early warning systems to detect and mitigate outbreak risks, mobilizing additional surveillance team	100,000
	Cost of health promotion campaigns	10,000
Total		**3,880,543**

4. Linking the Effects to the Human Impact

A total of 20 health cluster partners actively participated in the emergency response to the Herat earthquakes. The earthquakes claimed the lives of 1,531 people , including 827 women and girls, while 2,681 were injured, including 1,569 women and girls. Most deaths and injuries were reported from Zindajan District.

It is worth mentioning that two health workers, both men, were seriously injured while on duty in the field[14]. Most of those injured are being treated in the Herat Regional Hospital in Herat City, which serves as the main referral point for earthquake victims. The potential increase of infectious diseases in the aftermath of the earthquake is of concern, considering the vulnerability of the affected people.

Drug use is associated with increased vulnerabilities in many areas of life, resulting in negative social and health consequences, such as co-occurring mental and physical disorders (including HIV, hepatitis, and other infectious diseases), drug-related deaths, unemployment, stigmatization, crime, and violence. Earthquakes and other disasters significantly deteriorate the social status and well-being of individuals with drug use disorders due to the excess stress, trauma, and disruption of normal life and social status in the general community and vicinity. Earthquakes and other disasters can have various and often heightened effects on individuals who are actively using drugs, such as increased risk of harm, health risks and safety concerns, and increased vulnerability. Efforts following a disaster should include outreach programs aimed

at reaching vulnerable populations, including drug users. These programs should prioritize providing access to harm reduction services and information on safe drug use practices, besides other health and social support needed.

According to the 2015 ANDUS, the drug positivity rate nationally was 11.1 percent (men 16.1 percent and women 9.5 percent), whereas in Herat City 8.3 percent of the population of Herat Province tested positive for any drug, including 4.1 percent positive for opioids. There is no survey to show the precise number of people who use drugs among the affected population in most affected districts (1,638,801), but we can expect a significant number of people using drugs among them in reference to the provincial prevalence of drug use. Furthermore, such a disastrous situation is further increasing stress and psychological trauma and exhaustively overburdening coping skills, and thereby increasing risk and vulnerabilities to initiation and use of drugs.

Health care facilities: While many health facilities have been established using containers, the prolonged stay of communities in temporary settings has heightened the risk of health-related issues. In addition, the damaged health facilities have not been renovated due to the lack of funds. There is a growing concern about the mental health of individuals, including children, who are experiencing symptoms such as fear, depression, anxiety, insomnia, and psychosomatic disorders. Long-term intervention in the form of mental health and psychosocial support services is crucial for the well-being of the affected communities. Overcrowding, poor hygiene, and sanitation conditions in temporary shelters have elevated the risk of outbreaks and epidemics. It is essential to sustain risk communication and community engagement to raise awareness and sensitize the community to take effective preventive measures. The ongoing winter season has amplified health risks for those living in temporary shelters, exacerbated by the shortage of winterization supplies such as blankets and heating systems. These supplies are essential to help communities cope with the severe cold[15].

The key maternal health services and major surgeries were significantly reduced in October 2023 compared to the previous month (table 18).

Table 18: Key Maternal Health Services by District, September and October 2023[56]

	September 2023					October 2023				
District	Antenatal care	Cesarean section	Institutional deliveries	Postnatal care	Major Surgeries	Antenatal care	Cesarean section	Institutional deliveries	Postnatal care	Major Surgeries
Injil	6,767		462	1,450	568	3,937		376	1,037	292
Ghoryan	1,505	25	258	586	18	1,164	28	234	523	18
Gulran	1,645	20	305	888	18	1,128	16	51	583	28
Guzara (Nizam Shaheed)	3,683	105	542	1,794	32	3,315	98	510	1,681	26
Herat	11,765	105	1,876	4,321	1,785	4,739	23	484	1,078	
Karukh	1,386		173	437		1,115		156	410	
Kushk (Robat Sangi)	1,725	8	207	582	10	1,137	22	197	405	11
Kohsan	1,230		217	417		887		181	364	
Zindajan	1,013		94	414		795		125	342	
Total	**31,693**	**672**	**4,210**	**11,257**	**2,431**	**18,848**	**187**	**2,377**	**6,663**	**375**

A Closer Look: Gender Impact

Women face multiple barriers to accessing health care and are at a high risk of facing severe mental health problems.

Women-specific health concerns in Afghanistan are multiple. With a maternal mortality ratio of 620 deaths per 100,000 live births, the country registers the highest ratio in the region. There is a low contraceptive prevalence rate at 19.8 percent and substantial unmet need for family planning, estimated at 25 percent. Access to general healthcare is also a critical issue for women. Prior to 7 October 2023, 66 percent of women in Herat Province reported they could access health centers only if accompanied by a mahram, while only 32 percent mentioned they could access these health centers alone. The remaining percentage of women reported they had no access. For this group, the cost of medicine (42 percent), cultural limitations (27 percent) and the absence of women staff (20 percent) or of a mahram (10 percent) were the main barriers.[57]

Another increasingly critical concern for women and girls is the deterioration of their mental health. Since August 2021, the restrictions on women and girls' rights, isolation and lack of hope for the future,[58] coupled with the absence of dedicated mental health facilities and the overall collapse of the health system in country, has resulted in a mental health crisis for women. Data show a significant increase in the number of women seeking psychosocial support services, with a notable surge of approximately 149 percent in female individuals seeking psychological support after the earthquake compared to the previous year.[59]

As part of the earthquakes' impact, a staggering 68 percent of household heads reported that women and girls within the family had shown signs of excessive worry and no hope for the future.[60] Further, 51 percent mentioned excessive sad mood or crying and 36 percent mentioned decrease in appetite or sleeping patterns. Worryingly, almost the totality (97 percent) of households in Herat Province mentioned at least one of the women in the household showed signs of behavior change.[61] In a village of Injil District, Qafaslan, 72 percent of the households that reported behavioral changes due to the earthquakes said women were the most affected by behaviors such as sleeping issues, nightmares, increased aggression, withdrawn behavior, and isolation.[62]

5. Recovery Needs and Strategy

The priority and urgent needs to support the health care services in the nine affected districts of Herat Province after the earthquakes are categorized as follows:

1. **Reconstruction (Construction plus repairs and replacement of damaged supplies and equipment):** Based on the results of the assessment, a total of 86 health facilities need urgent and short-term reconstruction and equipment repair i. In addition to 238 HPs in the earthquake-affected districts, which were organized in private houses without rent within the community can also be rehabilitated and equipped.

2. **Service Delivery Restoration Needs:** Ensure provision of primary-level health care services to support the establishment of temporary and mobile health and nutrition teams, treatment and long-term care for physical trauma, treatment and long-term care for mental trauma, strengthen mental health service capacity, treatment of overall increased caseload, support execution of screening prevention-vaccination programs, additional coordination and disaster management needs, and the management of mitigation disaster-related health risks.

3. **BBB and Health System Resilience:** Consider investment for longer-term integration of mental health and psychosocial support (MHPSS) in primary health care, review model of care, adapt to new needs and changes in demography, reduce fragmentation in support, contracting, and build on management of response and recovery to increase capacity for disaster risk management/International Health Regulation (IHR).

Accordingly, the total funding required for meeting urgent needs and efforts aimed at earthquake damage repair and reconstruction in the health care sector is US$7,995,400, which includes reconstruction services (construction and equipment), service delivery restoration, and BBB and health system resilience (table 19). According to the rapid needs assessment report, the required estimates are:

- US$3.4 million for the reconstruction of buildings and machinery and equipment needs of 86 public health facilities, maternal and internal wards of the regional hospital, and private clinics.

- US$4.5 million for service delivery restoration is needed during the short to medium-term period.

The provincial emergency response plan shall be further elaborated in a prioritized and costed recovery strategy adapted to the specific contexts where health providers are operating. The development of such a strategy should embrace a bottom-up, community-led process with a focus on health and ensuring principles of equity and access to improve structures.

Table 19: Recovery and Reconstruction Needs in the Health Sector by Duration and Priority

Interventions/Activity	Short term (up to 12 months) (US$)	Medium term (up to 3 years) (US$)	Long term (up to 5 years) (US$)	Priority (rank 1–5)	Requirements (US$)
Repairing damaged primary health facilities and Hospital infrastructures	3,000,000	424,000		1	3,424,000
Provision of essential primary health care services through fixed and mobile health team	1,000,000	700,000		1	1,700,000
Provision and support to MHPSS services	500,000			1	500,000
Procurement and distribution of medicines, medical supplies, diagnostics, equipment	1,200,000			1	1,200,000
Provision of communicable diseases outbreak prevention, detection and response and support to trauma care and rehabilitation services	500,000	450,000		1	950,000
Replacement damaged asset of primary health care and hospitals	51,200	0		1	51,200
Replacement of physical damaged asset for health posts	170,200			1	170,200
Continuity and restoring of health services through 149 health facilities and 695 health posts; costs are not considered as the funding is already secured under Health Emergency Response Project and other vertical projects	0	0		1	0
Grand Total	**6,421,200**	**1,574,000**			**7,995,400**

The Herat earthquakes have affected people who use drugs. In such circumstances, this vulnerable group needs to have access to health and social services. Considering the harsh winter days approaching, their immediate needs, particularly for homeless drug users, are winterization supplies, food support, large tents, and blankets.

The health sector offers the following recommendations for long-term recovery and future preventive measures, as well as to ensure that the level of damage is minimized in the likelihood of a similar event. The summary of the recommendations is outlined in three phases:

Short Term

- While many health facilities have been established using containers, the prolonged stay of communities in temporary settings has heightened the risk of health-related issues. This intensifies the demand for quality health care services, including medicine and medical supplies, to address the health needs of these populations effectively.

- Inform inhabitants of the province, particularly pregnant women, to ensure their easy access to health care facilities. In this case, it is possible to strengthen health education and awareness-raising programs, which is a routine activity of health care facilities in affected districts. Double effort in health education activities through additional response health facilities (static and mobile) and inform inhabitants, especially pregnant women, coming to the health facilities of other services.

- As part of the response, personnel from other provinces and districts should be mobilized to the earthquake-affected districts to ensure the continuity of care. To maintain community involvement and proximity, also mobile teams in the earthquake-affected districts will ensure continuity of care. (comment by Albert who is looking at conflict sensitivity).

- Provide MHPSS services, meeting the WHO Comprehensive Mental Health Action Plan 2013–2030, to ensure they are available in emergency and disaster situations, and encourage intersectoral initiatives for the promotion of mental health and the prevention of mental disorders, with a focus on the life course, addressing the stigma and discrimination faced by people with mental health conditions.

- Make immediate repairs and rehabilitation of facilities that suffered minor and moderate damage to make them functional again.

- Start the construction of health facilities that is indicated in the rapid needs assessment, in coordination and consultation with local coordination bodies (Regional Health Cluster, Emergency Response Committee, and the de facto Provincial Public Coordination Committee). In addition, provide containers for the short term to keep health facilities functional and address the provision of services in affected districts.

- Accelerate the construction of health care facilities in the affected districts that are supported through existing ARTF financed project and prioritize proposals for new investments in the province based on needs assessments There will be two approaches proposed by the World Bank in two phases: Immediate: basic services programs in health, agriculture, and community resilience are designed to and will help respond to

these disasters; and over the short term- analytics: Afghanistan is not prepared for any disaster and resilience analytics and poverty mapping will help better programming and understanding.

- Reassess the feasibility/safety of the health facilities planned to be built on ground fill and stop the construction of those considered insecure. It is recommended any construction should be based on the de facto MoPH's construction policy and identified engineering maps for each level of health facility as well as in coordination with local coordination bodies.

- Strengthen the health care service delivery infrastructure in the destination districts that have received/will receive IDPs and returnees.

- Overcrowding, poor hygiene, and sanitation conditions in temporary shelters have elevated the risk of outbreaks and epidemics. It is essential to sustain risk communication and community engagement to raise awareness and sensitize the community to take effective preventive measures. Partners are encouraged to support these community-focused endeavors.

- A total of 238 health posts that have been damaged should be prioritized by the housing working group as it will help in restoring the promotive and preventive primary care services at the community level.

- Strengthen the capacity of response teams to bolster the management of trauma and hospital care, align MPHSS intervention with guidelines, ensure accuracy of the report on Disease Surveillance/Potential Disease Outbreak Prevention and Response program, and conduct the protection from sexual exploitation and abuse risk assessment.

Medium Term

- A thorough assessment needs to be conducted by a specialized team consisting of engineers, epidemiologists, and public health experts. One of the limitations in this assessment was the lack of professional staff to technically assess the situation of physical damage and their needs and accordingly adjust the needs.

- Re-evaluate the site selections for the projects in earthquake-prone provinces including Herat, and particularly the health care facilities where construction has not begun, by taking into consideration the soil risk status, and perform risk assessments for buildings whose construction has started,

- Strengthen the capacity of transportation to the disaster areas, response capacity, and the coordination between medical and search-rescue teams.

- In addition to the displacement of the population by earthquakes, a huge influx of returnees from the neighboring countries may also be in the affected areas, which needs further strengthening of the health care service delivery infrastructure in the province.

Long Term

- Strengthen the health care service delivery infrastructure in the earthquake-affected provinces; build mental health services capacity to treat potential mental disorders caused by the earthquakes.

- Lifelong and free provision of the medical equipment-devices required by the people who sustained disabilities or lost their limbs after the earthquakes, as well as rehabilitation services, are proposed in the existing services packages called Basic Package of Health Services and Essential Package of hospital services.

- Strengthen the content of the in-service training on disaster preparedness and response to disaster victims for all public personnel in affected areas, particularly medical personnel.

6. Methodology and Limitations

Data source: The damage and loss calculations were done based on information by the health service providers, mainly the OHPM responsible for implementing health services under the HER project, UN agencies supporting the health sector, regional health cluster, and provincial de facto health directorate, with focus on public health facilities. The assessment further relied on data on damage and loss for private health facilities by the provincial de facto health director's office.

Unit costs: The unit cost for 86 damaged health facilities is calculated as the average for minor, moderately, and fully damaged health facilities, hospitals, and private health facilities. The damage and loss can be underestimated or overestimated as the assessment due to limited time and absence of engineering assessments was done mainly by health facility staff in most instances. The damage cost for 238 health posts is not considered as they are functioning in houses owned by community health workers located in villages and the reconstruction will be considered by the housing sector.

Explanation of loss: The losses are considered as the activities or interventions that occurred once from the disaster or till December 14, 2023, e.g., installing containers, training staff, mobilizing teams and staff from neighboring districts or provinces.

Explanation of needs: The needs do not include the cost of health services being provided through the existing pre-earthquakes health facilities (149) and health posts (695) in the nine affected districts under the HER project and other stakeholders since the funding for continuation of services through those health facilities are already secured. The needs include the cost for repair of damaged facilities taking the building back better aspect into account, replacement of damaged assets, needs for health services including trauma care and physical rehabilitation, as well as mental health and psychosocial support. In addition, the need for further support to provide medical supplies and equipment and essential primary health care services is considered to continue access to health services and interventions strengthening disease early warning and response.

Disasters often prompt restrictions and limitations on the governance structures in force under normal circumstances. The basic limitations that have been identified in these earthquakes are:

- The damage estimation is mainly done by non-technical implementing NGO staff and even within the same category there is significant variance between facilities.

- The estimation for the construction of health facilities is not available for all types of health facilities and the one available is for the year 2018.

- The cost of damage and loss for the private health sector is estimated through verbal communication of the relevant de facto provincial health director's office.

Education

1. Summary

The October 2023 earthquakes in Herat Province have exacerbated the existing challenges of the education sector. 295 public schools and community-based education (CBE) classes, of which three CBEs are for girls, were directly affected, amounting to more than US$53.2 million in direct damages and losses to the sector. Of this amount, the cost of total damage is estimated at US$50.8 million and total loss at US$2.4 million. The infrastructure of 99 institutions was assessed as fully damaged, with more than 60 percent of the infrastructure (classrooms, boundary walls, water and sanitation facilities) being damaged, and 189 institutions were assessed as partially damaged, sustaining a range of 20 percent to 59 percent damage to infrastructure.

CBEs, which are held in spaces provided by the community (homes and/or community spaces) sustained the most damage, as houses often have poor foundations and plinths and are seismically vulnerable. Almost 180,000 students and 4,390 teachers in the 295 affected institutions have been impacted, experiencing loss of learning time and productivity as education institutions are fully or partially closed following the earthquake. The losses for the education sector were categorized in service and productivity losses due to disruptions in learning during the cold climate academic year following the earthquakes and increased or unforeseen costs associated with the use of temporary learning spaces (TLS) and the need for demolition and debris removal to restore infrastructure. It also includes learning loss of about 10 weeks, estimated from the time since the earthquakes to the start of winter break.

About US$69.5 million is required for recovery in the education sector, considering the need to build back better, mitigate learning loss and school dropout, and ensure improved DRR in the sector. As such, recovery costs focus on three categories: (i) rebuild institutions and facilities (US$50.8 million); (ii) learning recovery (US$3.8 million); and (iii) mitigate the human impact of the earthquakes (US$14.8 million), which could otherwise impact student attendance and learning in education. In addition, a further recovery

cost (US$0.1 million) is included to strengthen disaster risk resilience of the overall education sector and ensure institutionalization of DRR principles.

As the most urgent priority for recovery is ensuring students return to school, short-term efforts should focus on community mobilization and advocacy to raise awareness on safety and the importance of education. This should be accompanied by provision of temporary learning spaces and other teaching and learning materials to ensure learning resumes as soon as possible and make-up for loss incurred following the earthquakes so children do not fall behind. The short-term needs in education over the next 12 months amount to almost US$36 million. Medium- to long-term efforts should focus on the reconstruction and rehabilitation of damaged infrastructure and to rebuild schools and education centers so that they are not only safe, but also are quality and equitable learning environments for all children. The medium-term needs over the next three years amount to US$28 million. Long-term efforts should also focus on improving disaster risk management throughout the education sector through capacity building of education stakeholders and mainstreaming DRR in education. The long-term needs within the next five years amount to US$5.5 million.

Table 20: Total Damage, Loss, and Need by Province/District - Education

Province/District	Total Damage (US$)	Total Loss (US$)	Total Need (US$)
Ghoryan	6,508,076	322,572	7,904,516
Gulran	1,634,499	123,127	2,779,615
Guzara	2,165,947	169,112	3,933,744
Herat	24,179,784	901,429	31,400,902
Injil	5,538,344	300,902	8,528,505
Karukh	954,752	65,999	1,721,256
Koshan	3,110,669	132,312	3,874,325
Kushk	3,993,849	211,476	5,606,554
Zindajan	2,724,809	189,208	3,591,366
Provincial			100,000
Grand Total	**50,810,730**	**2,416,137**	**69,460,782**

2. Pre-Earthquakes Context and Baseline

Over the last 20 years, progress has been made in Afghanistan's education sector. Participation in primary to secondary education increased from less than 1 million children in school in 2000 (with less than 10 percent being girls) to around 8.4 million in 2022 (39 percent girls)[63] More men and

women have also gained access to higher education through universities: enrollment increased from 26,000 university students in 2011 (19 percent female) to 429,470 in 2022 (29 percent female) in both public and private institutions. As of 2022, Afghanistan had 12,117 public primary and secondary education institutions, 69 literacy schools, 179 universities, 362 technical and vocational education and training (TVET) institutions, and 1,142 religious schools (registered with the de facto Ministry of Education). It had almost 30,000 CBEs in 2023.

However, the significant shifts in Afghanistan's economic and political landscape since August 15, 2021, impacted the state of education in the country. Increased poverty has exacerbated existing structural inequalities, putting more girls and boys, especially those in rural areas, at risk of dropping out of school or not attending school at all. The lack of participation of girls and women in secondary and tertiary education, who were asked to stay at home when schools reopened in September 2021, and banned from tertiary education in December 2022, has deepened girls' disadvantages in access to education and impacted an already low female enrollment rate.

An estimated 53 percent of primary school age children are out of school, with more girls out of school than boys.[64] Out-of-school rates are higher at the lower secondary level, owing primarily (for girls) to the ban on education above Grade 6 and to poverty-related factors, including child labor. Even when children are in school, not all are learning: Learning outcomes in Afghanistan are among the lowest in the world, where only 14 percent of children attending Grades 2 and 3 have foundational reading skills and 18 percent have foundational numeracy skills.[65] Literacy and numeracy data show significant disparities between rich and poor households, rural and urban areas, and families with educated mothers versus those without. Moreover, more than 14.6 million people aged 15 and above (62 percent) are illiterate, representing the lowest levels of literacy proficiency in the world.[66]

Supply-side constraints on the public education sector remain significant. There are not enough schools to absorb children across districts, and not enough qualified teachers to lead instruction, nor proper facilities (including safe classrooms and hygiene facilities) to meet the needs of in-school and out-of-school children. Almost 99 percent of the public education budget is spent on teacher salaries, which perpetuates the sector's reliance on external aid, including for the provision of textbooks, additional teaching and learning materials (TLMs), teacher training, and infrastructure rehabilitation. The 2022 education census conducted by UNICEF found that the main supply side challenge to student attendance is limited TLMs, followed by damage to classrooms and lack of teachers. Even many urban schools lack safe classrooms, hygiene facilities, and other infrastructure, with only 50 percent of all schools having a building for every class conducted and only 64 percent of schools observed to have at least one functioning toilet.

In the current context, CBE has become a very effective way to reach out-of-school and other disadvantaged children, especially girls, and provide quality, safe education. CBE classes provide learning opportunities in remote or difficult-to-reach areas, where public schools are not available and help children receive an education close to home until they can transition to public school or complete a full cycle of primary education. In 2023, close to 30,000 CBEs were supported by the Afghanistan Education Cluster partners, providing almost 900,000 children (58 percent girls) with access to education. However, more investments are needed to respond to high demand for education and ensure children can complete education in CBEs or public schools.

Before the earthquakes, the net attendance rate of primary school age children was approximately 63 percent in Herat Province compared to the national net attendance rate of 48 percent. The out-of-school rate of primary school age children in Herat and Badghis were 38 percent and 80 percent, respectively, and the out-of-school rate of children of lower secondary school age was

higher, at 69 percent in Herat and 88 percent in Badghis. The national out-of-school rates of children of primary and secondary school age are 53 percent and 67 percent, respectively. In terms of gender parity in education, girls were more disadvantaged in access to education in both provinces, but more disadvantaged in Badghis than Herat. While Badghis Province is more disadvantaged in terms of education, the population of Herat is much higher, and different types of educational needs exist in both provinces.

3. Assessment of Disaster Effects: Damage and Loss Estimates

Assessments of damage and losses focus on the impact to public schools (primary, lower secondary, upper secondary) and CBEs, given that data on damage sustained to other educational institutions (tertiary education, literacy centers, etc.) and the private sector were not available at the time of the PDNA. CBE data on Gulran and Kohsan Districts are also missing. Total damage and losses are estimated at US$53.2 million (table 21). Damage to physical infrastructure was assessed in three categories: (i) Full damage, where there was total collapse or major structural damage, amounting to 60 percent or more of total structure, and requires reconstruction; (ii) Partial damage, where there was damage to walls and roof, but the structure is mostly intact and damage is reparable, amounting to 20 percent–60 percent of structural damage; (3) Minor damage, where there was minor surface damage that is easily reparable, amounting to less than 20 percent of structural damage.

Overall, Herat District has sustained the most damage and losses, totaling US$25 million across 94 damaged institutions. This is followed by Ghoryan District with US$6.8 million in damage and losses, then Injil District with US$5.8 in damage and losses. While Injil has more damaged institutions (41 institutions), Ghoryan (35 institutions) has higher costs of damage and losses because more people (18,482 compared to 13,534 in Injil) were affected by the earthquakes.

The total damage to educational institutions in the nine affected districts is US$50.8 million. The earthquakes have impacted 119 public schools and 176 CBEs in the nine districts. The infrastructure of 99 institutions (61 public schools, 38 CBEs) are fully damaged and 189 (51 schools, 138 CBEs) partially damaged. Seven public schools had minor/slight damage. The 119 damaged public schools represent 19 percent of total schools (638) and the 176 damaged CBEs represent 15 percent of total CBEs in the nine target districts. For public schools, damage to infrastructure was categorized through assessments of classrooms, boundary walls, WASH facilities (availability of water, handwashing stations, latrines), power, and electricity (solar power, electricity supply). In Afghanistan, CBE classes are hosted in spaces provided by the community, and as such financial calculations of infrastructure damage to CBEs are not included in the education sector's PDNA since it will be covered in the housing sector. In addition to damage to school infrastructure, damage to other physical assets necessary for education was observed. These are categorized into classroom materials (white/blackboards, desks, chairs, floormats, and other equipment and furniture), TLMs (backpacks, notebooks, pencils, pens, rulers, etc.), textbooks, and teacher kits (notebooks, chalk).

Total loss in the education sector is US$2.4 million. Losses for the education sector are categorized in service and productivity losses due to disruptions in learning during the cold climate academic year[8] following the earthquake and increased or unforeseen costs associated with the use of temporary learning spaces (TLS) and the need for demolition and debris removal to restore infrastructure. As public education and CBE classes are free, there is no associated loss

of revenue. In terms of learning loss, as the earthquakes occurred during the academic year, 10 weeks of learning loss is estimated from the time of the earthquakes to the start of winter break. As such it is estimated that immediately following the earthquakes there was an absence of learning (loss of learning time) in the weeks following the immediate aftermath of the earthquakes up to the winter break, and loss in learning and productivity as some classes, but not all, which resumed in TLS. Learning loss in terms of time is difficult to translate into financial loss, but is essential in calculating recovery needs, as learning loss will need to be mitigated through additional learning hours, requiring additional teaching hours and compensation, as well as costs associated with supporting teacher capacity building through additional trainings.

Table 21: List of Physical Damage and Losses and Estimated Costs in the Education Sector by District

		Damage (US$)		Loss (US$)	
Detailed list of damage identified per district *(physical asset and infrastructure)*		**Public**	**Private**	**Public**	**Private**
Herat	Total 94 institutions damaged (37 schools, 57 CBEs): • 17 fully damaged • 70 partially damaged • 7 sustained minor damage Damage to physical assets: • 589 classroom materials • 56,037 sets of desks and chairs • 112,131 sets of teaching and learning materials (TLMs) • 169,887 sets of textbooks • 3,049 teacher kits	24,179,783.80	-		
Injil	Total 41 institutions damaged (14 schools, 27 CBEs): • 18 fully damaged • 23 partially damaged Damage to physical assets: • 155 classroom materials • 6,091 sets of desks and chairs • 12,209 sets of TLMs • 54,075 sets of textbooks • 264 teacher kits	5,538,344.00	-		
Zindajan	Total 38 institutions damaged (9 schools, 29 CBEs): • 15 fully damaged • 23 partially damaged	2,724,809.40	-		

	Damage to physical assets: • 101 classroom materials • 1,561 sets of desks and chairs • 3,150 sets of TLMs • 6,524 sets of textbooks • 204 teacher kits				
Ghoryan	Total 35 institutions damaged (19 schools, 16 CBEs): • 10 fully damaged • 25 partially damaged Damage to physical assets: • 178 classroom materials • 68,814 sets of desks and chairs • 17,644 sets of TLMs • 21,987 sets of textbooks • 373 teacher kits	6,508,076.10	-		
Kohsan	Total 9 institutions were damaged (all public schools): • 3 fully damaged • 6 partially damaged Damage to physical assets: • 72 classroom materials • 5,403 sets of desks and chairs • 10,806 sets of TLMs • 20,883 sets of textbooks • 116 teacher kits	3,110,669.40	-		
Gulran	Total 6 institutions were damaged (all public schools): • 5 fully damaged, • 1 partially damaged Damage to physical assets: • 124 classroom materials • 5,293 sets of desks and chairs • 10,613 sets of TLMs • 20,366 sets of textbooks • 148 teacher kits	1,634,498.80	-		
Karukh	Total 6 institutions damaged (5 schools, 1 CBE), all partially damaged. Damage to physical assets: • 64 classroom materials • 2,115 sets of desks and chairs	954,751.90	-		

	• 15,535 sets of TLMs • 15,535 sets of textbooks • 13 teacher kits				
Guzara	Total 25 institutions damaged (6 schools, 19 CBEs): • 5 fully damaged • 20 partially damaged Damage to physical assets: • 21 classroom materials • 1,806 sets of desks and chairs • 3,630 sets of TLMs • 38,475 sets of textbooks • 92 teacher kits	2,165,947.40	-		
Detailed list of losses identified *(forgone income, additional costs)*					
Herat	Losses: • provision of 544 TLS • cost of demolition (US$16,925) • cost of debris removal (US$14,104)			901,428.80	-
Injil	Losses: • provision of 154 TLS • cost of demolition (US$29,728) • cost of debris removal (US$24,774)			300,902.14	-
Zindajan	Losses: • provision of 81 TLS • cost of demolition (US$32,514) • cost of debris removal (US$27,095)			189,208.12	-
Ghoryan	Losses: • provision of 178 TLS • cost of demolition (US$20,603) • cost of debris removal (US$17,169)			322,572.02	-
Kohsan	Losses: • provision for 72 TLS • cost of demolition (US$9,334) • cost of debris removal (US$7,778)			132,312.26	-

Gulran	Losses: • provision of 43 TLS • cost of demolition (US$29,633) • cost of debris removal (US$24,694)			123,127.02	-
Kushk	Losses: • provision of 111 TLS • cost of demolition (US$18,478) • cost of debris removal (US$15,398)			211,475.60	-
Karukh	Losses: • provision of 29 TLS • cost of demolition (US$10,690) • cost of debris removal (US$8,909)			189,208.12	-
Guzara	Losses: • provision of 74 TLS • cost of demolition (US$27,661) • cost of debris removal (US$23,051)			322,572.02	-
Total		**50,810,729.70**	**-**	**2,416,136.86**	**-**

Source: Afghanistan Education Cluster Rapid Assessment (November 2023)

4. Linking the Effects to the Human Impact

Numerous research shows how disasters impact schooling, leading to lower education attainment, lower academic performance, and higher rates of absenteeism. These losses in education can also reduce lifetime earnings. The October earthquakes in Herat also posed challenges to the education sector and deepened pre-existing structural limitations and inequalities. More than 174,000 children in public schools and 5,700 students enrolled in CBEs across the impacted districts have experienced disruptions in learning. Although some classes have continued through TLS, others continue to experience disruption, and even if students are learning, the psychosocial and emotional impact caused by the earthquakes can lead to losses in learning productivity. Children in earthquake-affected areas are more likely to experience learning losses and achievements, which are already low in Afghanistan, and fall behind their peers in other regions. Over time, this can lead to losses in economic earnings.

Assessments also show staffing gaps in the local teaching force. Schools, many of which already needed improved and gender-responsive infrastructure and facilities, have been heavily impacted, leaving students without a safe learning environment. Moreover, socioeconomic shocks to households can reduce families' abilities to fund education at household level, and the increased opportunity cost of education may lead to increases in child labor or child marriage,

increasing risks of absenteeism or school dropout as well as protection risks, as households turn to negative coping habits.

Investments to alleviate household burden on education spending to build the capacity of the education system and provide alternative learning pathways will be important to ensure children continue their education. As the education sector and development partners mobilize to rebuild and mitigate the negative impacts of the earthquakes, it is also an opportunity to build back better. As schools are rebuilt and rehabilitated, it should focus on structural enforcements to ensure safety and inclusion of essential and gender-responsive facilities, such as segregated washrooms. Back to school campaigns and community mobilization efforts should target the most vulnerable and marginalized children, including children with disabilities, where past emergencies have shown are particularly at risk as they can experience greater disruption in their education since learning can also depend on their access to learning aids, assistive devices, and qualified teachers. Cash incentives to households can alleviate their burden on the costs of education and encourage families to continue supporting children's education. Provision of MHPSS services will be essential to ensure children, teachers, and families are supported to address trauma and stress following the earthquakes and improve overall well-being.

A Closer Look: Gender Impact

Earthquakes worsened educational disparity for girls in Herat.

Prior to the earthquakes, 56 percent of households in Herat reported education of girls as a very important priority for their family and 28% mentioned wanting to obtain information on education services.[67] Nonetheless, Herat recorded the second highest number of out-of-school children in the country. This is more severe for adolescent girls who, due to the DFA restriction on girls' education beyond Grade 6, have had to stay away from classrooms.

Access to educational opportunities for girls is likely to be further restricted in villages affected by the earthquakes. An estimated of 89 girls' schools, 77,500 girls, and 700 female teachers have been affected by the earthquakes in the nine most affected districts of Herat Province. Nine girls' schools were completely destroyed (two in Gulran, three, in Zindajan and four in Injil) and 73 were partially damaged. The earthquakes directly affected access to safe drinking water in another seven girls' schools. In addition, damage to latrines was reported in 41 girls' schools in the nine most affected districts and 57 did not have a handwashing station available.[68]

The engagement of communities in the context of earthquake recovery presents a valuable opportunity to involve and provide educational services to adolescent girls. This can be achieved through various approaches, such as Community-Based Education (CBE) programs and the utilization of safe spaces specifically designed for women and adolescent girls.

5. Recovery Needs and Strategy

The total recovery needs are estimated at US$69 million (table 22). Recovery needs were identified according to three priority needs to rebuild the education sector in the earthquake-affected areas, including the BBB principles. The first priority is to replace damaged infrastructure, including structural reinforcements for disaster risk reduction, and the replacement of other physical assets and education materials. As CBE classes are hosted in spaces provided by the community (homes, community centers, etc.), costs to replace this infrastructure is not included in the education sector's recovery needs, as it will be covered under the housing sector.

The second priority is to continue service delivery, for which the education sector is translated into learning recovery to mitigate learning loss. This includes the need for provision and continued use of TLS and community mobilization efforts through the school management shuras (SMS) and community mobilisers to encourage families to send children to school through back-to-school campaigns, costs of training of teachers and school management shuras on risk awareness, safety, and the importance of continuing education, as well as other topics such as basic psychosocial support and referrals. Learning recovery needs also include the cost of overtime pay to teachers required for additional catch-up classes or more shifts to make-up for lost learning hours. This is calculated as two weeks of compressed learning, which can be adjusted based on priorities in the best interest of students and teachers. This can be identified through learning outcome assessments and recovery needs for teaching-learning processes after a traumatic event like an earthquake. The needs can include social-emotional learning and adjusted teaching and learning pedagogies and additional, tailored support from teachers, supported by additional trainings for capacity building of teachers to effectively support students' needs.

The third priority is the urgent need to address the human impact of the earthquakes by mitigating increased risks and vulnerabilities and barriers to children's access and participation in education. This includes the provision of 12-month unconditional household cash transfers to the most affected families to alleviate household burden on education and the cost of MHPSS services at the community level.

In addition, there is a one-time cost for the development of teaching, learning, and training materials to institutionally mainstream earthquake and other disaster risk awareness into the education sector. This DRR cost is integrated as part of a strategy and cost for the overall province.

Table 22: Recovery Needs in the Education Sector by District

District	Justification of needs coming from the analysis of effects and impacts	Needs (US$)
List of Recovery Needs:	Replacement of damaged assets: • Reconstruct and rehabilitate damaged institutions • Replace damaged physical assets (whiteboards, desks and chairs, TLMs, textbooks, teacher kits, etc.) • Demolition and debris removal costs Learning recovery: • Provision of TLS • Back to School Campaigns • Cost of overtime pay to teachers • Additional teacher training • School management shura training Addressing human impact to reduce increased risk/vulnerabilities, such as dropout: • Cost of incentives to keep children in school • Provision of mental health and psychosocial support to communities	
Herat	Recovery needs: • replacement of damaged assets (US$24 million) • learning recovery needs (US$1.7 million) • human impact needs (US$5.5 million)	31,400,901.60
Injil	Recovery needs: • replacement of damaged assets (US$5.6 million), • learning recovery needs (US$374,520) • human impact needs (US$2.6 million)	8,548,505.14
Zindajan	Recovery needs: • replacement of damaged assets (US$2.8 million) • learning recovery needs (US$208,000) • human impact needs ($605,808)	3,591,365.52
Ghoryan	Recovery needs: • replacement of damaged assets (US$6.5 million) • learning recovery needs (US$402,880) • human impact needs ($949,463)	7,904,516.12
Kohsan	Recovery needs: • replacement of damaged assets (US$3.1 million) • learning recovery needs (US$170,600) • human impact needs (US$575,698)	3,874,324.66
Gulran	Recovery needs: • replacement of damaged assets (US$1.7 million) • learning recovery needs (US$95,160) • human impact needs (US$995,384)	2,779,614.82

Kushk	Recovery needs: • replacement of damaged assets (US$4 million) • learning recovery needs (US$374,520) • human impact needs (US$2.6 million)	5,606,553.50
Karukh	Recovery needs: • replacement of damaged assets (US$974,351) • learning recovery needs (US$67,400) • human impact needs (US$679,505)	1,721,256.04
Guzara	Recovery needs: • replacement of damaged assets (US$2.2 million) • learning recovery needs (US$168,480) • human impact needs (US$1.6 million)	3,933,744.16
Provincial	Provincial needs: • Improve strengthening disaster risk resilience of overall education sector • Ensure institutionalization of disaster risk resilience principles	100,000
Total Needs		**69,460,781.56**

In the short term, education recovery should focus on ensuring continuity of education and ensuring children return to and stay in education. It could also be used as an opportunity to reach and enroll out-of-school children. Ensuring children have safe learning spaces through TLS will be the most urgent priority. In addition, concerted efforts to alleviate household burden on education through the distribution of essential teaching and learning and other classroom materials and the provision of cash transfers for affected households will be undertaken.

At the same time, in preparation for the start of the new academic year in March, back to school campaigns and community mobilization efforts should be undertaken, focusing on community engagement and awareness raising on risk mitigation and the need for education. This will require developing advocacy materials and training school management shuras. Further, recruitment to fill gaps in the teaching force and additional teacher training (INSET and refresher) to build teacher capacity on risk awareness, safety, classroom management, and basic psychosocial emotional support to students will be needed. Assessments of student levels also need to be conducted to measure learning loss that may have occurred in the weeks following the disaster. Additional classes will also be needed to make up for and mitigate lost learning time and/or learning loss.

In the medium term to long term, recovery strategies are recommended to focus on the reconstruction and rehabilitation of educational institutions. Rebuilding and rehabilitation will reinforce structures to make them more earthquake resilient and build back better to make sure all schools meet minimum standards of safe schools (gender-disaggregated WASH facilities, boundary walls, etc.). Strategies should also focus on strengthening DRR of the overall education sector and ensuring DRR principles are institutionalized. This would be done by focusing on mainstreaming DRR into the curriculum, TLMs, training of teachers and academic supervisors, and capacity building of national and local education workers to improve disaster risk management.

Table 23: Estimated Cost of Interventions by Duration and Priority

Interventions/Activity	Short term (up to 12 months) (US$)	Medium term (up to 3 years) (US$)	Long term (up to 5 years) (US$)	Priority (rank 1–5)	Cost (US$)
Total Cost (US$)	**35,981,842**	**28,015,459**	**5,463,481**	**n/a**	**69,460,782**
Provision of temporary learning spaces to resume learning	X			1	2,057,600
Provision of teaching learning materials to replace damaged assets	X	X	X	1	9,550,267
Cash transfer to affected households to incentivize families to continue sending/enroll children in education	X			2	14,803,140
Conduct back to school campaigns before the start of the new academic year to mobilize communities to support children's return to and enrollment in education, including through training of school management shuras	X			2	155,760
Provide teacher training to new teachers and additional teacher training on disaster risk awareness, basic psychosocial support to children and social-emotional learning	X			1	950,000
Conduct student assessment and plan and conduct additional classes in shifts, or make-up classes to make up for learning loss/lost learning time following the earthquakes	X			1	250,000
Provide mental health and psychosocial support services to schools/communities	X	X	X	2	15,930
Demolition and debris removal of damaged infrastructure	X	X		1	358,537
Reconstruction, rehabilitation of damaged infrastructure and replacement of classroom materials.	X	X	X	1	41,219,548
Institutionalize disaster risk reduction principles through mainstreaming in curricula, teaching and learning materials, teacher training, education management information system, capacity building of education officials at the de facto Ministry of Education and local education directorates	X	X	X	3	100,000

n/a: not applicable

Implementation of recovery strategies should be done through coordination with key stakeholders such as, but not limited to, the de facto Ministry of Education, Provisional and District Education Directorates, Afghanistan Education Cluster,[13] schools, and communities. This would be essential to identify key priorities and needs and to manage local expectations on how and when recovery efforts will be undertaken. Recovery efforts should also take into consideration local dynamics to mitigate conflict between communities regarding service delivery.

6. Methodology and Limitations

The assessment relied on baseline data on education from the Multiple Indicator Cluster Survey (MICS) 2022–23, UNICEF-conducted school and teacher census in 2022, and the Afghanistan Education Cluster CBE Database, 2022 de facto National Statistics and Information Authority (NSIA), 2023, UNESCO TVET Survey Report, and 2022 Mapping of Literacy School Status in Afghanistan. Data sources for the earthquakes' impact on public schools and CBEs were from the rapid assessment conducted by the Afghanistan Education Cluster in November.

Due to the unavailability of data at the time of the exercise, damage and loss calculations were limited to public schools (primary and secondary) and CBE classes. As such, data on other educational institutions (e.g., tertiary education, literacy centers), if available at the time of implementation, should be included to ensure that recovery efforts support the whole education ecosystem.

Estimations of damage to infrastructure may also be overestimated or underestimated as assessments were conducted by the Education Cluster implementing partners, given the limited time for detailed engineering assessments. Short-term recovery needs consider the immediate support urgently needed for the affected schools and households, such as the provision of textbooks, teaching and learning materials, and cash incentives. However, long-term recovery needs assume that institutionalization of DRR in the whole education system will strengthen system resilience and benefit the whole sector.

Cultural Heritage

1. Summary

The overall estimated damage and loss for the sector amounts to US$3.02 million. The recent earthquakes in Herat have caused significant damage and loss to the cultural sector, threatening the city's cultural heritage and the lives of its residents. Initial assessments indicate that about 6 percent of the infrastructure and physical assets within the sector have been affected. This damage poses a severe risk to the functionality and service delivery of cultural facilities, hindering access to cultural services and impeding the preservation and promotion of Herat's cultural heritage. The most affected assets include historic buildings, residential quarters, and key cultural landmarks such as vernacular architecture structures in the Zindajan and Injil districts.

The estimated cost for recovery and reconstruction needs for the cultural heritage sector is US$4.8 million. In the short term, immediate action is required to assess and stabilize the severely damaged infrastructure and physical assets within the cultural sector. This includes conducting comprehensive damage assessments of residential and historical buildings, prioritizing their stabilization, and restoration to prevent further loss. Medium-term recovery efforts should focus on capacity building initiatives to enhance the skills and knowledge of cultural professionals and local communities involved in preservation and promotion activities. Long-term recovery and reconstruction efforts should encompass comprehensive planning and investment in infrastructure development, restoration projects, and the revitalization of cultural programs and activities.

Preserving Herat's historical cultural diversity in the aftermath of the earthquake requires swift and coordinated action, addressing both the immediate needs and long-term objectives. By investing in strategic initiatives that foster heritage conservation, support local livelihoods, and promote economic opportunities, Herat can rebuild and safeguard its cultural heritage for future generations while enhancing the overall well-being of its residents.

Table 24: Total Damage, Loss, and Need by District - Cultural Heritage

Province/District	Total Damage (US$)	Total Loss (US$)	Total Need (US$)
Ghoryan	150,000	55,000	310,000
Gulran	190,000	50,000	360,000
Guzara	230,000	50,000	425,000
Herat	840,000	190,000	1,690,000
Injil	170,000	55,000	360,000
Karukh	70,000	25,000	150,000
Koshan	200,000	35,000	370,000
Kushk	410,000	50,000	710,000
Zindajan	190,000	65,000	400,000
Grand Total	**2,450,000**	**575,000**	**4,775,000**

2. Pre-Earthquakes Context and Baseline

This section outlines the cultural sector characteristics, infrastructure assets, service delivery status, institutional capacity, and developmental challenges prior to the earthquakes.

Sector characteristics and conditions prior to the earthquakes

The city of Herat has large areas of surviving built heritage, particularly from the Timurid era, and was once called the "Pearl of the Khurassan" for its historical significance and architectural marvels. It serves as a center for arts, crafts, literature, and traditional practices in the western region of Afghanistan. The cultural sector in Herat encompasses museums, residential quarters, heritage sites, and craft production workshops. Prior conservation interventions were implemented on several key monuments that have helped mitigate and prevent further damage caused by the recent earthquakes.

Inventory of infrastructure assets

In Herat, there are about 830 historical sites and traditional creative industries, such as tile making, carpentry, and silk. Herat's cultural infrastructure assets include:

- Museums: The city houses several museums, such as the Herat Museum at the Ikhtyaruddin Citadel, showcasing artifacts, artworks, and historical objects reflecting the region's cultural heritage. Herat is home to educational institutions with library facilities and specialized libraries focusing on literature, history, and local culture.

- Cultural and creative industries: This includes infrastructure, resources, and processes of production, distribution, and sale of creative cultural goods, such as traditional arts

and crafts (including music and dance).

- Heritage sites: In addition to its "square-plan" Old City, which contains dozens of registered monuments within residential and commercial areas, Herat boasts numerous large-scale registered historical sites, including the Citadel of Herat (Qala Ikhtyaruddin), the Friday "Jami" Mosque, the Gowharshad Mausoelum, a number of minarets and archaeological remains at the Musalla complex, and shrines such as the Abdullah Ansari Shrine at Gozargah, all of which are significant cultural landmarks.

- Historic residential quarters: The Old City of Herat houses more than 60,000 inhabitants, mainly residing in the traditional quarters. It includes key commercial landmarks such as the Char Suq Cistern and Market complex, with marketplaces and craft workshops, and public baths (hammams) and mosques actively utilized by local communities. These sites serve as important social, cultural, and economic hubs, fostering interaction, traditional craftsmanship, trade, and community engagement.

Status of service delivery and institutional capacity

Before the earthquakes, the cultural sector in Herat faced certain challenges in service delivery and institutional capacity. While efforts were made to preserve and promote cultural heritage, the sector has encountered several barriers:

- Service delivery: The accessibility and quality of cultural services varied across different areas of Herat and remote surroundings. Some cultural facilities and activities were concentrated in urban centers, limiting access for rural communities. Due to the difficulties in accessing remote sites, certain cultural services and interventions were unable to reach these areas and consequently did not receive the necessary attention. Funding constraints affected the maintenance and expansion of cultural infrastructure. Service delivery faces challenges due to limited access to technical equipment and resources required for an organized technical response. Additionally, access to materials, especially in remote sites, is restricted, further complicating their preservation and restoration efforts.

- Institutional capacity: The institutions responsible for managing and operating cultural assets and promoting the cultural sector had limited resources and technical expertise. The lack of trained personnel and funds had hindered the effective preservation of these sites and was a key obstacle to urgent post-earthquake intervention. The de facto Ministry of Culture in Herat, particularly the Department of Historical Monuments, has an established track-record of coordinating efforts and collaborating on preservation works, including with UNESCO since 2002. The DFA have demonstrated a willingness to engage and have some capacity to support conservation works. While the de facto Department of Historical Monuments in Herat has expressed interest in supporting additional conservation work, it lacks capacity for planning and implementing technical interventions and post-disaster first-response activities.

Sector developmental challenges

The cultural sector in Herat faced several developmental challenges prior to the earthquakes, including:

- Insufficient funding: Limited financial resources allocated to the cultural sector constrained infrastructure development, conservation efforts, and the expansion of cultural programs and activities.
- Lack of capacity: The need for capacity building initiatives to enhance the skills and knowledge of cultural professionals, including skilled construction labor, masonry and carpentry, conservators, and archivists, is evident.
- Regulatory framework: While monuments in the Old City and other key sites have been listed on the National Register of Historic Monuments, legal frameworks and policies are insufficient or inadequate for the application of effective heritage protection laws.
- Conflict and instability: Ongoing conflict and security concerns in Afghanistan hampered the growth and vitality of the cultural sector. The protection of cultural sites and artifacts became increasingly challenging.

3. Assessment of Disaster Effects: Damage and Loss Estimates

The assessment was conducted largely remotely, relying primarily on data from satellite imagery and publicly available information, and corroborated and validated by other sources and means, including data from development partners. The assessment is limited to tangible facilities and assets that could be identified remotely with satellite imagery. However, it is important to note that this approach has limitations, as it may not capture recognized cultural/social values sites, internal infrastructural damage, such as cracks on walls and roofs, structural damage that is not visible, damage to market production chain, economic flow, and potential damage to objects and artifacts in museum collections. These aspects would require on-site inspections or alternative assessment methods to be properly evaluated. The earthquakes have also deeply affected the safeguarding of intangible cultural heritage (ICH), undermining the social fabric, daily practices, and livelihood of living heritage practitioners, producers, community members, cultural professionals, and artists.

After an earthquake, it is common for community members, in particular in the historic residential quarters of the city of Herat, to feel apprehensive about entering potentially damaged buildings due to safety considerations. Safety should always be the top priority in such situations. To address these concerns, it is essential to engage with de facto local authorities and structural engineers who can assess the safety of the buildings. A team of professionals can conduct thorough inspections to determine whether it is safe to enter the structures. They can also provide guidance on any necessary repairs or reinforcement measures that need to be taken before reoccupying the buildings.

The combination of pre-existing difficulties caused by the last decades of conflict and governance instability, alongside the subsequent disaster, has placed immense strain on cultural

and creative industries (CCI) in these areas. Immediate attention and support are crucial to help revitalize the CCI and assist artists and professionals in rebuilding their livelihoods in the aftermath of these challenges.

After the earthquakes, remote-sensing analytics reviewed 403 locations. Based on this assessment, damages, losses, and needs in the culture sector were estimated to be: Damages US$2.45 million, losses US$575,000, and needs US$4.8 million.

Information on the extent of damage to the assessed cultural sites is provided in figure 9 and table 25.

Figure 9: Extent of Damage to Assessed Sites

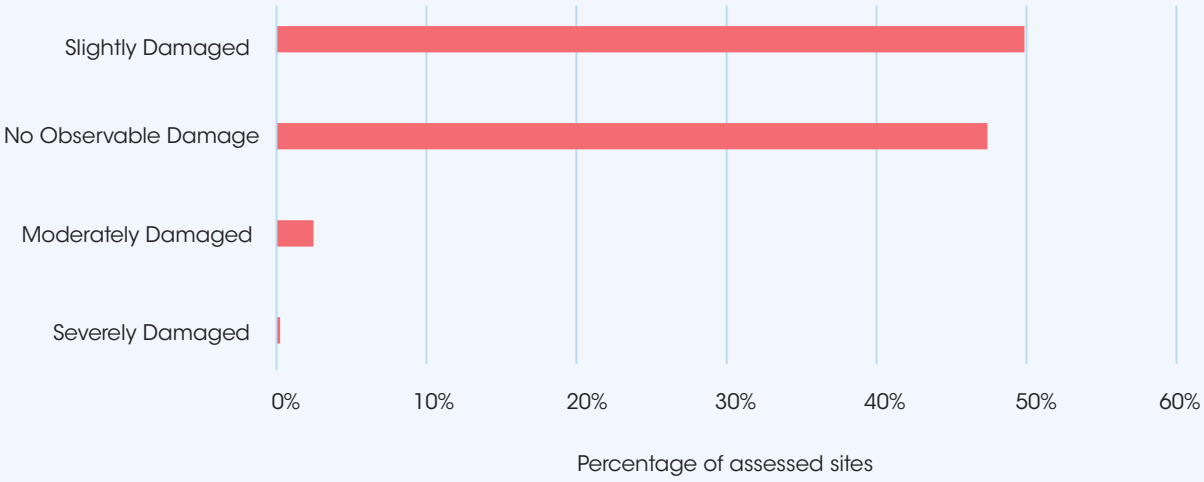


Table 25: Number of Assessed Locations and Extent of Damage

Extent of damage	Assessed locations
Slightly Damaged	201
No Observable	
Damage	191
Moderately Damaged	10
Severely Damaged	1
Total	**403**

Table 26: Damages and Losses of Cultural Heritage by District

		Damage (US$)		Loss (US$)	
Detailed list of damage identified per district *(physical asset and infrastructure)*		**Public**	**Private**	**Public**	**Private**
Herat	**95**	840,000.00			
Injil	**31**	170,000.00			
Zindajan	**42**	190,000.00			
Ghoryan	**54**	150,000.00			
Kohsan	**36**	200,000.00			
Gulran	**42**	190,000.00			
Kushk	**44**	410,000.00			
Karukh	**18**	70,000.00			
Guzara	**41**	230,000.00			
Detailed list of losses identified *(forgone income, additional costs)*					
Herat	Economic flow generated by creative industries and income from closed museums and monuments			40,000.00	150,000.00
Injil	Economic flow generated by creative industries			5,000.00	55,000.00
Zindajan	Economic flow generated by creative industries			5,000.00	65,000.00
Ghoryan	Economic flow generated by creative industries			10,000.00	10,000.00
Kohsan	Economic flow generated by creative industries			5,000.00	35,000.00
Gulran	Economic flow generated by creative industries			10,000.00	35,000.00
Kushk	Economic flow generated by creative industries			10,000.00	40,000.00
Karukh	Economic flow generated by creative industries			5,000.00	20,000.00
Guzara	Economic flow generated by creative industries			10,000.00	35,000.00
Total		**2,450,000.00**		**100,000.00**	**475,000.00**

4. Linking the Effects to the Human Impact

As a large portion of the population in and around Herat continue to live, work, and worship in traditional buildings, the earthquakes have a profound impact on multiple aspects of people's lives in Herat, including on living conditions, livelihoods, gender equity, social inclusion, and overall community and household well-being.

The understandable focus of resources and manpower for urgent rescue and humanitarian needs has further contributed to the loss of heritage as immediate stabilization measures were not carried out at the initial critical stages. Delays in addressing heritage sites in the most critical condition can result in irreversible collapse, yet, even on those buildings that suffered less damage, long-term delays will result in further damage caused by weathering. This diversion of resources can result in delays and limitations in the recovery and rehabilitation of cultural sites, hindering the overall restoration of historical landmarks and impacting the cultural well-being of the affected communities.

Living conditions and livelihoods

The damage to historical residential areas, residential buildings, and historical sites can directly affect living conditions, displacing residents and causing homelessness. The destruction of homes and infrastructure can disrupt essential services, such as drinking water, sanitation and hygiene, and agricultural irrigation, leading to deteriorating living conditions and increased vulnerability. Disruption of livelihoods is another significant concern, as cultural activities, and related industries may suffer due to damaged infrastructure and reduced visitor numbers. This can lead to income loss, unemployment, and economic instability for individuals and communities relying on these sectors for their livelihoods.

Gender equity and social inclusion

Earthquake effects can disproportionately impact vulnerable groups, including women working at home on textile production and other creative production, children, the elderly, and marginalized communities. Displacement, loss of livelihoods, and disrupted services can exacerbate existing gender disparities and social inequalities. Women may face increased caregiving responsibilities, limited access to resources and raw materials, and reduced opportunities for economic empowerment. Marginalized communities may experience amplified social exclusion, as recovery efforts and resource allocation may not adequately address their specific needs and priorities.

Production and access to goods and services

The effects on the cultural sector can impact the production and access to goods and services beyond cultural activities themselves. For example, damaged infrastructure and disrupted supply chains can hinder the availability of essential goods, such as construction materials and basic commodities. Reduced access to cultural services and facilities can also have indirect consequences on social cohesion and overall quality of life within the affected communities. Production and craft industries are mainly concentrated in the central city of Herat.

Existing vulnerabilities within the community can be exacerbated by the earthquakes' effects on the cultural sector. Socioeconomic disparities, inadequate infrastructure, and limited access to resources can be further intensified, increasing the overall risk faced by the population. Vulnerable groups may experience heightened marginalization, reduced access to support systems, and increased exposure to risks associated with post-disaster recovery and reconstruction efforts.

5.Recovery Needs and Strategy

Recovery from a disaster of the magnitude that occurred in Herat requires a wide range of short-term and long-term parallel and sequential activities, implemented in unison with local communities and institutions. Initial interventions need to be classified from major works (such as structural consolidation), requiring expertise, to immediate minor repairs that prevent further loss. Heritage sites need to be prioritized based on its immediate impact on communities, i.e., housing, public services, places of worship, and cultural sites. Finally, technical capacity and resources need to be allocated to address repairs to the most vulnerable sites, where the majority of people live.

In the short to medium term, the primary focus will be on the comprehensive documentation of cultural assets, encompassing historic cities, built heritage, museums, monuments, religious sites, livelihood loss, and creative industries. This documentation process aims to understand better the specific needs and requirements for planning effective conservation and recovery. Considering the challenges posed by the extent of damage, it is crucial to acknowledge that immediate repair and rehabilitation of the affected buildings may not be feasible in many cases.

In addition to the physical preservation of cultural assets, in short, medium, and long term, safeguarding ICH through a community-based approach should be considered by enabling communities to identify how their living heritage has been affected by the earthquakes and the measures needed to maintain its practice and transmission.

The following criteria were used to prioritize recovery needs:

- Sites and areas frequented by local communities: Focus on restoring and revitalizing cultural assets, sites, and areas that hold significant cultural and social value for the local community. This includes marketplaces, craft workshops, mosques, public baths, and other communal spaces that are integral to the daily lives and identity of the residents.

- Minor repairs and immediate Repairs: Attend to minor repairs and immediate repairs of damaged cultural assets that can be quickly addressed to prevent further deterioration and ensure the safety of visitors and residents.

- Complex structural consolidation: Allocate resources and technical expertise to address complex structural consolidation needs of historical buildings and monuments. These sites may require specialized engineering and architectural interventions to ensure their stability and long-term preservation.

The recovery strategy for Herat's cultural sector should encompass the following elements:

- Comprehensive damage assessment: Conduct a thorough assessment to identify the extent of damage to cultural assets, including historical buildings, landmarks, and infrastructure. This assessment will serve as the basis for prioritization and resource allocation.

- Stakeholder coordination: Establish a coordination mechanism involving relevant stakeholders, such as the de facto Ministry of Information and Culture, de facto Ministry of Urban Development, de facto local authorities, cultural institutions, community representatives, and international organizations. This coordination will ensure collaboration, resource mobilization, and effective implementation of recovery efforts.

- Capacity building: Provide capacity building initiatives for cultural professionals, local communities, and relevant stakeholders. This includes training programs, workshops, and knowledge-sharing platforms to enhance skills and knowledge in cultural preservation, restoration techniques, and sustainable management of cultural heritage.

- Resource mobilization: Seek financial and technical support from national and international sources, including public funding, grants, and partnerships with cultural heritage organizations. Engage with donors and development agencies to secure the necessary resources for recovery and reconstruction efforts. Promote the use of reusable materials and locally available resources.

Table 27: Recovery Needs for Cultural Heritage Sector

District	Brief Justification of Needs coming from the analysis of effects and impacts**	Needs (US$)
Herat	Local capacities in the conservation of historical monuments are limited and require training and oversight to ensure the quality of the outcomes. BBB requires additional training to upskill construction companies on appropriate use of modern materials in historical monuments without undue loss of fabric and character. In addition, it is important to document in more detail the damage and provide local stakeholders with equipment to monitor further impact of damaged sites.	1,690,000.00
Injil		360,000.00
Zindajan		400,000.00
Ghoryan		310,000.00
Kohsan		370,000.00
Gulran		360,000.00
Kushk		710,000.00
Karukh		150,000.00
Guzara		425,000.00
Total Needs		**4,775,000.00**

Given that the main structures in Herat are made of brick , addressing the damage caused by the earthquakes should involve prioritizing masonry work to repair cracks in walls and reinforce structural stability. This intervention would focus on skilled craftsmen and construction teams working on-site to ensure the structural integrity of buildings.

Prioritizing roof repairs is crucial to prevent further damage from weathering and to protect the interiors of historical buildings. This intervention would involve repairing or replacing damaged roofs, reinforcing waterproofing measures, and addressing any immediate threats posed by leaks or structural instability.

To expedite the recovery process, it is essential to identify and assess the availability of materials on the ground. This intervention would involve working closely with local suppliers and manufacturers to ensure a rapid and reliable supply of construction materials, including bricks, cement, and other necessary resources required for restoration work.

To enhance public safety and efficient reconstruction efforts, capacity building programs should be implemented in collaboration with local institutions. This intervention would focus on training first responders, such as de facto local authorities, cultural heritage professionals, and community members, in disaster response protocols, safety measures, and rapid assessment techniques.

Table 28: Recovery Interventions for the Cultural Heritage Sector by Duration and Priority

Interventions/Activity	Short term (up to 12 months) (US$)	Medium term (up to 3 years) (US$)	Long term (up to 5 years) (US$)	Priority[69] (rank 1–5)	Cost (US$)
Rapid Damage Assessment: Conduct a rapid assessment and emergency documentation of the cultural heritage sites in Herat to determine the extent and severity of damage caused by the earthquakes. Undertake a preliminary assessment of movable heritage housed in museums, libraries, etc. These assessments will help prioritize immediate repairs and stabilization efforts.	X			1	
Emergency Stabilization: Implement emergency measures to stabilize structures at risk of collapse. This may include temporary bracing, shoring, or securing vulnerable elements to prevent further deterioration.	X			2	
Detailed Condition Surveys: Conduct detailed condition surveys of the damaged cultural heritage sites to gather comprehensive data on the specific types of damage and their impact. This information will guide the restoration and repair strategies.		X			
Structural Consolidation and Repairs: Prioritize structural consolidation and repairs, focusing on addressing cracks in walls and reinforcing unstable sections. This intervention will help restore the stability and integrity of the cultural heritage structures.		X		1	
Restoration and Conservation: Develop comprehensive restoration plans for the damaged cultural heritage sites, focusing on preserving their historical and architectural significance. This may involve meticulous restoration of decorative elements, façades, roofs, and interior spaces, adhering to internationally recognized conservation principles.			X	3	

Capacity Building and Training: Establish programs to build local capacity in cultural heritage restoration and conservation. Offer training and workshops for local craftsmen, professionals, and community members to develop skills in restoration techniques, documentation, and preservation practices.			X	3	
CCI: Support restoring the creative industry and the safeguarding of intangible cultural heritage through a community-based approach.			X	2	
Risk Mitigation and Disaster Preparedness and Awareness: Implement measures to mitigate risks and enhance disaster preparedness for future disasters. This may include seismic retrofitting, introducing preventive measures, and raising awareness among the community on the importance of cultural heritage preservation.			X	2	
Inventory and Assessment of Objects at the Museum of Herat: Implement measures to mitigate risks and enhance disaster preparedness for future disasters. This may include seismic retrofitting, introducing preventive measures, and raising awareness among the community on the importance of cultural heritage preservation.			X	3	

Recommendations

This section discusses recommendations for recovery plans, implementation, and future analyses; and potential sources of funding, partners, and timeframes.

The main aspect of the recovery plan at this stage is to conduct a detailed condition assessment of the damage identified in cultural sites and structures. This assessment should include a thorough analysis of the extent and severity of the damage, identifying areas that require immediate attention and those that can be addressed in later phases. The assessment will serve as a foundation for prioritizing interventions and resource allocation. Given the large geographic scale of the recovery efforts, establishing a collaborative partnership with de facto local authorities, cultural heritage organizations, and community representatives is key. This collaboration would enable effective coordination, resource sharing, and knowledge exchange, ensuring a comprehensive and inclusive recovery process.

Establishing a network of implementers with a range of capacities, including experts in surveying, documentation, and implementation is essential for the recovery plan. This network should consist of professionals experienced in cultural heritage preservation and restoration. The implementers could work collaboratively to execute various tasks, such as surveying, documentation, architectural design, and construction, based on their specific expertise.

To ensure cost-efficient planning, the plan recommends utilizing the existing local workforce and their skill sets. To do so, it would be critical to identify individuals or groups with relevant expertise in construction, masonry, restoration, and related fields, and engage with local communities, vocational training centers, and professional associations to identify and mobilize skilled workers who can actively contribute to the implementation plan. Additionally, it would be crucial to prioritize the use of locally available materials in the restoration process to reduce expenses and stimulate the local economy. It would also be important to evaluate the quality and suitability of materials like bricks, stones, timber, and other construction resources found in the region. Fostering collaboration with local suppliers and manufacturers to establish a sustainable supply chain of materials would be necessary, thereby minimizing transportation costs and fostering economic growth within the community.

6. Methodology and Limitations

Several key assumptions and considerations have been made in the cultural heritage sector assessment. Foremost, it acknowledged that there are limited resources and capacity at the design and management monitoring level, which may pose challenges in implementing the plan effectively. Difficulties in accessing certain sites due to their remote locations or security concerns may have also impacted data collection and assessment. Additionally, the general environment in construction, including the availability of supplies and skilled labor, may present logistical challenges during implementation. The chosen methodology involves identifying priorities, key activities, and general locations for intervention. Data findings so far have relied on satellite imagery as comprehensive on-site surveys have not yet been conducted. References to existing research and documentation were also used to inform the assessment process.

The cultural heritage assessment used remote-sensing analytics with GPS coordinates to identify the level of damage and the kind of cultural heritage asset that was damaged (religious, monument, archaeological site, museum, etc.). Estimates for the damaged sites were allocated based on the extent of damage, the historical importance of the site, the relevance to the urban cultural tissue of the site, and the general particularity of the site. Based on this, an interactive map was created and can be accessed at https://arcg.is/18nqmy0. The losses were assessed by segregating public and private sites. In the context of the current political situation, the focus was on private losses. Except for Herat, US$5,000 of support was counted for every assessed public institution or site (museum, monument, archaeological site). For Herat, the focus of support was for private losses and the estimated support to cover losses is US$40,000. The assessment also tried to balance the amount of loss according to the extent of damage per district.

In calculating the recovery needs for the sector, the following aspects were considered in addition to the reconstruction and reparation of physical damage: (i) building local capacities in the conservation of historical monuments; (ii) building back better by upskilling companies on appropriate use of modern materials in historical monuments without undue loss of fabric and character; and (iii) providing local stakeholders with equipment to monitor further impact of

damaged sites. In the context of this disaster where most damage to cultural sites was not substantial, the focus of the recovery needs was on providing capacity building and giving the local stakeholders and the general population the means to repair and build back better the damaged buildings. Therefore, 50 percent of the assessed damage and losses were added to determine the total recovery needs in the cultural heritage sector. The calculation did not follow a mere statistical approach but instead adjusted the needs to specific heritage protection imperatives for each district.

Productive Sectors

Photo Credit: UNDP Afghanistan

Agriculture, Livestock, and Minor Irrigation

1. Summary

The total value of damage to the agriculture sector is US$14.6 million and the aggregate change in economic flow in the sector and effects on service delivery have been estimated at US$24.6 million. The key assets damaged are critical irrigation systems, productive assets like livestock, stored agriculture inputs, and animal shelters, and crop production; all of which together with the disruption in critical extension services for crop and livestock production/health are expected to further impact adversely the primary livelihoods of the affected people and communities.

The value for reconstruction needs has been estimated as US$59.5 million. The main approach of the recovery strategy in the short term is to ensure no one is left behind by focusing on people impacted by the disaster who are highly food insecure and vulnerable and assisting them through customized emergency livelihoods assistance packages as well as repairing critical irrigation systems including rehabilitation/repairs of *kariz* systems. In the medium term, the approach is to build on the gains of the short-term strategy by rebuilding productive and community assets, enhance watershed management along with critical surface irrigation systems, and supporting diversification of agriculture-based livelihoods, horticulture development and improving capacities of existing agrifood systems. In the long term, the approach is to invest in building resilience of the agrifood systems, local ecosystems, and household livelihoods as well as building back better the agriculture (crop, livestock, poultry) extension services, veterinary care private sector architecture, and local agribusinesses, aside from strengthened irrigation systems including watershed management, rangelands restoration, and on-farm water management for effective risk mitigation and shock absorption capacities. The key priorities for immediate to short-term recovery are repair/construction of animal shelters and critical irrigation systems, restore/rebuild agriculture-based livelihoods, including productive assets and women-oriented livelihoods, continued veterinary/animal health care services, and enabling maximal crop cultivation in the upcoming spring planting season.

It is critical to highlight that following the earthquakes in October 2023, there are now signs emerging of an "early to mid-season" drought in the earthquake-affected areas because of substantively less precipitation (including no rainfall in some areas, resulting in non-planting of winter wheat) during October–December 2023, which was below the long-term average for the province. For agriculture-based livelihoods and herders, this may become a double disaster unless urgent action is taken to repair critical irrigation systems and continue emergency livestock protection package for herders.

Table 29: Total Damage, Loss, and Need by Province/District - Agriculture, Livestock, and Minor Irrigation

Province/District	Total Damage (US$)	Total Loss (US$)	Total Need (US$)
Ghoryan	960,320	6,129,543	6,636,830
Gulran	1,468,943	939,251	4,361,170
Guzara	600,576	1,274,528	3,626,640
Herat	2,370,303	2,722,701	9,327,400
Injil	1,842,545	5,220,752	7,852,580
Kushk	1,351,800	1,375,322	8,219,280
Zindajan	5,980,630	6,979,867	19,479,100
Grand Total	**14,575,117**	**24,641,964**	**59,503,000**

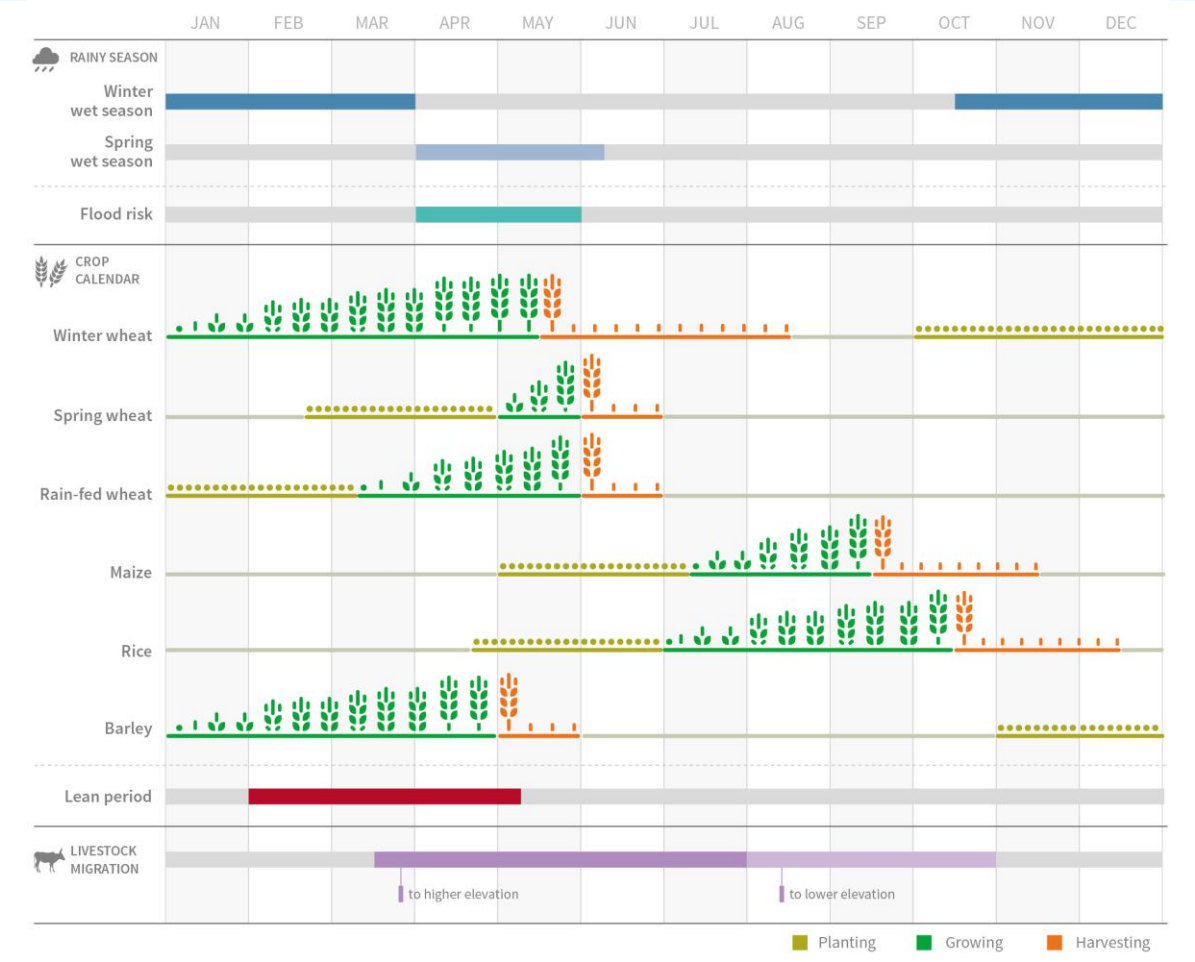
2. Pre-Earthquakes Context and Baseline

The agriculture sector, represented by the crop, livestock, fisheries/aquaculture, and forestry subsectors, is the main contributor to food nutrition security, employment, livelihoods, and local markets. It also contributes significantly to foreign exchange earnings and tax/revenue generation of the country, with products such as fruits, saffron, rugs, cumin, marble, animal skins, and wool. Agriculture represents 27 percent of the GDP in Afghanistan's economy. The private sector is extremely narrow, with employment concentrated in low-productivity agriculture (44 percent of the total workforce works in agriculture and 60 percent of households derive some income from agriculture).

Despite some growth registered in the agriculture sector between 2009 and 2022, climate change, limited access to inputs (quality seed and fertilizers) and extension services as well as risk information services along with other limiting factors such as, limited investments in crop diversification, irrigation services, value chain development, livestock and poultry sub-sectoral development, remain a major threat for the full potential development of the sector. Water scarcity and land degradation are major social challenges faced by the country, causing massive reduction in land productivity and increasing rainwater runoff and the associated risk of landslides and flooding, including in Herat Province. Land degradation includes poor water

management that severely harms the productive capability of land, causing low crop yields. This is mainly due to poor management of groundwater for irrigation and the absence of strict regulatory frameworks that has resulted in groundwater depletion. Furthermore, use of the traditional methods of cultivation and harvesting has led to the low yield per hectare. Access to market, financial credit, and poor roads network remain important challenges for farmers and livestock producers, especially in rural areas.

Figure 10: Seasonal Crop Calendar



Source: FAO

The total livestock population is estimated at 22 million sheep, 10 million goats, and 3.7 million cattle (Afghanistan Living Conditions Survey [ALCS] estimates), representing the larger population of animals (excluding poultry). Animal husbandry is the most significant economic activity of residents in rural areas of Afghanistan. The majority of the rural households including women-headed households in the affected areas is engaged in livestock production and crop cultivation and derive a significant part of their income from this sector. Poultry is one of the most

important subsectors within the livestock sector, primarily at household level. **Livestock keeping is largely the main source of employment and livelihood as well as a subsistence source of nutritious food**, especially poultry rearing and small animal (sheep and goat) rearing, and a driving force for their economic empowerment and social well-being. In 2020, women represented 52.5 percent of the agriculture workforce.[70] They play a particularly important role in the livestock and poultry subsector as many women in rural areas are the main keepers.

3. Assessment of Disaster Effects: Damage and Loss Estimates

Aggregate Sector Analysis

According to the results of the PDNA analysis, around **577,278 hectares (ha)** of agriculture land and more than **668,407 animals** have been impacted in seven affected districts. In addition, damages to private infrastructure, such as animal shelters, storage, and on-farm irrigation systems and equipment have been reported and presented here.

Damage to the Agriculture Sector

The total estimated cost of damage to the agriculture sector is US$14,575,117 (table 30).

Crop

The total value of the damage to the crop subsector is estimated at over **US$8.8 million**. Most of the damage recorded in this subsector is related to irrigation systems, stored seeds, and agriculture input. In two districts, Ghoryan and Zindajan, saffron production also suffered. Most of the damage was registered in Zindajan, Injil, and Heart Districts. The damage to the crop subsector also includes agriculture related irrigation such as damage to irrigation canals and Karizes.

Livestock

The total value of damage in the livestock subsector is estimated at **US$5.8 million.** The most affected districts were Zindajan, Khusk, and Heart, together reporting a loss of over 10,000 animal heads because of direct and indirect effects (disease, dehydration, or starvation) of the earthquakes. The largest fatalities were experienced in the sheep population, followed by goat and cattle.

Most damages (partial and full destruction) under the livestock sector were primarily to animal shelters and animal feed storage, apart from damages to livestock watering points. Most infrastructure damage was registered in Zindajan, Injil and Khusk Districts.

Table 30: Estimated Cost of Damage and Loss in the Agriculture Sector by District

District	Damage (US$)	Losses (US$)	Total (US$)
Ghoryan	960,320	6,129,543	7,104,863
Gulran	1,468,943	939,251	2,409,194
Guzara	600,576	1,274,528	1,878,104
Herat	2,370,303	2,722,701	5,099,004
Injil	1,842,545	5,220,752	7,068,297
Kushk	1,351,800	1,375,322	2,727,222
Zindajan	6,979,867	6,979,867	12,965,497
TOTAL	**14,575,117**	**24,641,964**	**39,217,081**

Losses in the Agriculture Sector

Aggregate change in economic flow in the sector and effects on service delivery is US$24,641,964.

Crop

Estimated production losses in the crop subsector are **US$17,281,000**. Wheat, under irrigated conditions, for the season 2023–24 has been the most affected, followed by the second crop on irrigated land (pulses) and saffron. For 2024-25, a residual reduced winter wheat production has been considered, estimating that about 25 percent of the land served by damaged irrigation systems have not been fully rehabilitated yet.

Livestock

Estimated production losses in the livestock subsector are **US$7,360,964**. Zindajan, Kushk, Herat, and Injil districts were the most impacted. The spread of animal disease was also registered among the affected live sheep, goat, and cattle population, which coupled with lack of fodder, feed, shelters, and drugs might contribute to a reduction in current and future production also for the rest of the affected livestock population. These have been the main assumptions used to estimate the final production losses on dead and live animal population.

4. Linking the Effects to the Human Impact

Agriculture is the source of a large proportion of the revenue, food and nutrition security, livelihoods, and of both formal and informal employment in the affected areas. The planting failure due to the impact of the earthquakes for the winter wheat season and loss of important productive assets such as livestock will not only result in loss of jobs (for contracted and casual/wage laborers) and income opportunities (due to production losses), but also in the

further deterioration of livelihoods and food and nutrition security of the affected population. Small-holders or households with sharecropping agreements and marginalized individuals are especially affected. Women-headed households, having marginal to small holdings of livestock and marginal land holdings, have been impacted and lost their subsistence sources of access to nutritious food and productive assets (livestock and poultry holdings). In particular, the loss of livestock and damaged irrigation systems may also affect the transhumance patterns among nomadic and semi-settled livestock herding communities, leading to possible adverse impacts on local availability of livestock and associated food security and livelihoods. This increasing pressure on resources like land and water could potentially lead to tensions between nomadic and sedentary farming communities.

5. Recovery Needs and Strategy

The recovery needs and strategy were developed and prioritized according to the severity of damage and losses identified in the agriculture sector analysis. The cost of recovery needs is estimated at US$59.5 million (table 31).

The agriculture sector recovery strategy will be based on inclusive and participatory community-based approaches, with special focus on the poor and other vulnerable groups (women-headed households, the elderly, persons with disabilities). Given the loss of income resulting from the earthquakes, many small and subsistence farmers as well as livestock keepers are now facing significant hardship to rebuild their livelihoods and restore their lost/damaged productive assets. The aims of the recovery and reconstruction efforts in agriculture are to revive economic activities across the sector and to strengthen farmers' capacity to be more resilient to similar future shocks in accordance with BBB principles.

In the crop subsector, short-term activities will address immediate needs by ensuring preparedness for the ongoing winter wheat season and the upcoming spring cultivation season through land clearance and land preparation, distribution of agro-inputs (seeds and fertilizers) to small and medium farmers (owning up to 2–4 jerib of land [0.4–0.8 ha]). For those who missed the window for sowing traditional winter wheat, inputs to cultivate spring/summer season crops should be provided. Provision of seedlings and restoration of orchards and fruit tree plantations along with horticulture development and value chain strengthening shall also be considered. Support to women-headed households, in particular, for vegetable cultivation coupled with greenhouses and other locally pertinent support through inputs and technical training should be provided. Resources would also be required to support farmers who became further indebted and lost employment opportunities due to the earthquakes, by ensuring access to financial support and livelihoods diversification support and strengthening technical capacities.

Rehabilitation of irrigation systems, including clearing and repairing karizes [traditional irrigation system], channels, watershed management, and on-farm structures, should be implemented while prioritizing gender-balanced cash-for-work wherever practically feasible. Criticality of this urgent rehabilitation of irrigation systems cannot be emphasized enough, since damaged irrigation systems have adversely influenced planting decisions by farmers, whereby a substantive number of farmers have not completed their winter wheat/cereal sowing yet due to lack of irrigation water, and the distress caused to livestock due to inadequate drinking water.

In the medium to long term, various capacity building exercises should be conducted with small and medium farmers on risk mitigation practices such as support ecofriendly and healthy climate

smart agriculture, soil preservation, water use efficiency management techniques, agriculture value chain development, agribusiness strengthening, increased storage facilities, and associated technical training and financial support. Increasing resilience of the agrifood systems to disasters/shocks will be achieved by improving land resource management, establishing new drainage systems where required, distributing inputs for climate resilient crops along with technical training and extension services, increasing awareness about disaster risk management, strengthening risk mitigation actions across the agrifood system stages, and introducing income diversification in agriculture adapted to local context. Specific attention should be given to women farmers as agents of change for climate resilience.

In the livestock subsector, short-term activities will support the continuation and rehabilitation of animal production through a scaled-up provision of animal shelter, feed, fodder, silage making, veterinary drugs as well as restocking of small animals (i.e., sheep, goat, and poultry), especially targeting women and the most vulnerable animal keepers. In particular, women should be supported with wool yarn weaving/spinning equipment and dairy kits (for enhancing hygiene in the handling of dairy products) as well as equipment and materials for primary processing of dairy products. Access to financial support to the same groups of people shall also be considered and expedited, together with restoration of destroyed animal shelters using BBB principles, and distribution of dairy kits to increase income in early spring. Livestock activities will take an equitable approach to all communities including nomadic and sedentary farming communities.

In the medium to long term, further resources would be required for restoring the livestock economy, promoting large and small ruminants restocking including breed improvement in select zones, and enhancing climate resilient sustainable livestock management practices, rangeland restoration, and strengthening resilience of the livestock-based agrifood system. Capacity building for field veterinarians and livestock keepers on climate smart practices for livestock rearing shall also be implemented together with awareness raising.

Reconstruction needs shall include restoration of assets at the individual/community level, as well as support to the private initiative to create small businesses (i.e., poultry/dairy industry) affected by the earthquakes.

Table 31: Recovery Needs of the Agriculture Sector by District

District	Brief Justification of Needs Coming from the Analysis of Effects and Impacts	Needs (US$)
Ghoryan	About two-thirds of households affected by the earthquake. Farming is more important than in other districts and is affected by the destruction of water infrastructure.	1,683,000
	Farming is an important part of livelihoods. Needs focus on rehabilitation of farming assets and inputs.	4,953,830
Gulran	Heavily affected, but mostly relying on livestock (only 6 percent is engaged in farming). Critical irrigation systems and livestock water points have been affected	102,000
		4,259,170
Guzara		255,000
		3,371,640
Herat	Few communal agricultural infrastructures that nonetheless affect a relatively large number of households as the most populous district.	408,000
	Few communal agricultural infrastructures that nonetheless affect a relatively large number of households as the most populous district.	8,919,400
Injil	Mostly relying on livestock production, critical irrigation systems and water management structures have been heavily affected.	2,040,000
	Rehabilitation and restocking of livestock subsector including continued animal feed support	5,812,580
Kushk	Minor repairs to the damaged critical irrigation systems and water points that nevertheless affect a population mostly relying on livestock.	102,000
	Rehabilitation and restocking of livestock subsector, including continued animal feed support, and to a lesser extent, crop production inputs.	8,117,280
Zindajan	Relatively few water management structures affected, but with heavy damages.	510,000
	The most heavily affected district, needs are more important for the livestock subsector, but also include the rehabilitation and farming assets and inputs	18,969,100
Total		**59,503,000**

Table 32: Recovery Interventions for the Agricultural Sector by Duration and Priority

Interventions/Activity	Short term (up to 12 months) (US$)	Medium term (up to 3 years) (US$)	Long term (up to 5 years) (US$)	Priority* (rank 1–5)	Cost (US$)
Winter wheat package	X	x		1	3,485,000
Summer crop package	x			1	1,722,000
Agriculture diversification packages (beekeeping, etc.)		x		3	1,100,000
Animal fodder production and conservation		X		2	900,000
Storage rehabilitation and construction	X			2	3,000,000
Water structure rehabilitation	X			1	1,600,000
Water harvesting infrastructure		X		3	1,300,000
Irrigation scheme and land reclamation			X	5	2,200,000
Livestock assistance packages	X			1	3,696,000
Animal shelter rehabilitation	X			1	8,000,000
Animal health and Veterinary Field Unit assistance	X			1	3,000,000
Veterinary Field Unit and veterinary clinic creation		X		3	2,000,000
Dairy production improvement			X	4	2,000,000
Poultry package: income diversification	X			2	14,700,000
Small and large ruminants restocking		X		4	10,800,000
TOTAL					**59,503,000**

(*) 1 = highest priority, 5 = lowest priority

6. Methodology and Limitations

Sources of data have been the Food and Agriculture Organization of the United Nations (FAO), World Food Programme (WFP), and United Nations Office on Drugs and Crime (UNODC) with direct and indirect survey and assessment. For the analysis, the price of agriculture inputs and products has been measured as of November 2023 in Herat Province for all the items that were available on the local market. Price of fertilizers, improved seeds, and tools has been taken from global markets and recent purchases, including recent procurement by FAO.

For loss of production, wheat and second crop for 2024 and wheat for 2025, the current prices have been used. Labor and casual labor costs in crop production have not been considered in this estimation.

Limitations

- FAO undertook a household survey, which covered 50 villages in 7 districts, a rapid qualitative assessment through partners and led a fact-finding mission on the damages and losses to water management infrastructure. Out of the total respondents in the KIIs and FGDs, 8.5 percent were women respondents. Despite these efforts, sector teams could not travel to all the affected areas due to assessment time and other constraints. Extrapolation to some extent was done to these unvisited areas using remote sensing satellite imagery and inputs from key informants in the respective districts.

- Not all the cost has been included in the estimates due to difficulties to assess, e.g. damage to orchard production, casual or seasonal labor cost, impacts to watersheds and rangelands.

- Updated agriculture and livestock census data are not available in Afghanistan. This might have resulted in an overestimation or underestimation of some of the baseline data used, for example, production per unit of surface of certain crops, number of animals, and milk production.

- Limited engagement with de facto provincial authorities (for department of agriculture, irrigation, and livestock, and river basin authority).

Commerce, Private Sector, and Industries

1. Summary

Following the devastating earthquakes that struck Herat, the private sector has faced significant damage and loss, critically impeding its capacity to contribute to the country's already fragile economy. Industries such as food processing, agriculture, retail, manufacturing, various services, and construction were among the hardest hit. The estimated total damage reached around US$5.6 million, leading to projected losses of about US$8.2 million in the year following the disaster.

The extensive damage and even more considerable losses reveal a private sector under siege, struggling to cope with the earthquakes' aftermath. Beyond the immediate financial toll, the destruction has affected the livelihoods of thousands of Afghans, compromising the economic recovery of a nation already grappling with socio-political challenges.

The recovery needs for commerce, private sector, and industries in the affected regions amount to US$18 million. The recovery needs in the agribusiness sector are highest across the sectors, amounting to US$4.9 million. This highlights the substantial impact of the earthquakes on activities that are closely linked to agriculture and livelihood.

The approach to recovery must be tailored to suit businesses of different sizes, as each category—small, medium, and large—demands a unique strategy. PDNA data reveal that small and medium enterprises (SMEs), which are crucial for local economic growth and job creation, bear a significant portion of recovery expenses. Small businesses, in particular, need approximately 49.8 percent of the total estimated funds for damage repair and 44.2 percent for compensating economic losses. Meanwhile, medium-sized enterprises experience a marginally lower damage rate at 46.6 percent, yet they suffer greater economic losses, requiring 53.4 percent of the resources. The data highlight the critical necessity of providing focused assistance to enable SMEs to rebuild and recuperate effectively.

Table 33: Total Damage, Loss, and Need by Province/District - Commerce, Private Sector, and Industries

Province/District	Total Damage (US$)	Total Loss (US$)	Total Need (US$)
Ghoryan	207,266	156,640	404,564
Gulran	93,815	141,481	251,444
Guzara	1,230,506	2,772,352	4,185,380
Herat	1,745,398	2,268,747	4,326,190
Injil	818,155	892,677	1,862,560
Karukh	185,994	364,650	579,971
Koshan	81,270	106,953	202,711
Kushk	77,997	123,796	215,022
Zindajan	1,183,598	1,436,705	2,835,160
Provincial			3,156,000
Grand Total	**5,624,000**	**8,264,000**	**18,019,000**

2. Pre-Earthquakes Context and Baseline

Real GDP growth is projected at 1.3 percent in 2023 and 0.4 percent in 2024, with GDP per capita expected to decline from US$359 in 2022 to US$345 in 2024, intensifying the hardships faced by Afghans.[71] With international assistance and the active development of the service sector from 2003 to 2012, the country's economy grew by an average of 9.4 percent, and in 2015–20, by 2.5 percent. After the Taliban takeover in 2021, the economy was in free fall with a sharp GDP contraction of 20.7 percent, followed by a 6.[72] The cessation of aid undermined private sector activity, especially in the aid-driven services sector, which had contributed considerably to output and growth for the last two decades. The loss of business confidence has dampened investment demand. The lack of consumer demand, payment system disruptions, and supply constraints have had a substantial impact on the private sector, forcing many businesses to close or scale down their operations.

The country has experienced a significant loss of more than 700,000 jobs since 2021. Widespread unemployment, especially in urban areas, and declining incomes for some 70 percent of the workforce have had a severe impact on the Afghan population. At the same time, about 80 percent–90 percent of the country's active workforce is employed by micro, small, and medium enterprises (MSMEs), mostly operating in the informal economy. Women represent 16.5 percent of the overall workforce in Afghanistan, and only 2.2 percent of Afghan firms are owned by women.[73] A recent survey by the World Bank found that 42 percent of women-led businesses have temporarily closed following the Taliban takeover, and there has been a 75 percent drop in women's employment among surveyed firms.

Jobs in the informal sector, where many MSMEs operate, can lack formal labor protection, job security, and adequate benefits, which are essential components of decent work. In case of disasters or external economic shocks, MSMEs, particularly informal ones, and their employees

are particularly vulnerable. Lacking formal business structures and support systems, these enterprises operate with minimal safety nets. The recent earthquakes resulted in direct damage to their assets and disrupted supply chains and financial stability. Without access to formal banking and insurance, these businesses are now struggling to recover post-disaster.

The economy of Afghanistan is mainly formed by the following productive sectors: agriculture (27 percent of GDP), industry (12.5 percent), and services (56 percent). The private sector of the country's economy is extremely small; 44 percent of the workforce is concentrated in the low-productivity agricultural sector. International financial assistance in 2020 amounted to 42.9 percent of the country's GDP. The decline in grant aid after August 2021 hit economic activity in all three productive sectors. The services sector, which contributes nearly 45 percent to the country's GDP, shrank by 6.5 percent; the agricultural sector, contributing about 36 percent to GDP, contracted 6.6 percent; and the industrial sector contracted 5.7 percent in 2022.[74] The construction sector has been particularly severely impacted, with a notable percentage of businesses reporting temporary closures (26 percent) or permanent shutdowns (4 percent).[75] Overcompliance and misconceptions about the scope of international sanctions have not allowed the Afghan business community, including businesses that import and export food and other essential goods, to quickly recover from the rapid economic contraction.

Table 34: Sectoral Distribution of the Economy (as of December 2020)

Sectors/Subsectors	Share in GDP (percent)		Growth Rate (percent)	
	2019	2020	2019	2020
Agriculture	**25.77**	**27.01**	**17.46**	**5.31**
Cereals	9.43	9.92	19.01	5.65
Fruits	4.96	5.22	23.88	5.62
Livestock	2.89	3.04	-12.63	5.71
Others	8.49	8.84	26.62	4.62
Industry	**14.06**	**12.47**	**4.85**	**-4.22**
Mining and Quarrying	1.89	1.56	14.77	-8.28
Manufacturing	7.04	5.96	6.45	-3.52
Food and Beverages	5.08	4.04	7.30	2.09
Non-Food Manufacturing	1.97	1.92	4.68	-15.43
Electricity, Gas, and Water	2.04	1.79	2.44	-3.78
Construction	3.09	3.16	-1.79	-3.38
Services	**55.47**	**56.07**	**-1.39**	**-4.76**
Wholesale & Retail Trade	7.44	7.16	4.44	-1.21
Transport, Repair of Motor Vehicles, and Storage	5.34	6.83	-7.57	-5.24
Restaurants and Hotels	3.12	2.52	0.16	-23.82
Post and Telecommunications	3.03	3.70	1.82	0.95
Finance and Insurance	1.85	1.46	-12.73	-8.20
Real Estate	6.43	6.24	2.18	-13.37
Eduation	2.52	2.10	-26.72	-18.07
Health and Social Services	6.24	6.82	0.44	5.54
Other Services	19.51	19.23	0.14	-1.95
Other	**4.70**	**4.45**	**-**	**-**

Source: Da Afghanistan Bank. 2021. *Economic and Statistical Bulletin – Annual Bulletin 2020.* Kabul

Herat Province

Herat Province is a significant trading hub as it shares a border with Iran and Turkmenistan. The annual output in 2021 was estimated at US$1.04 billion (some 7 percent of the national total), down from US$1.41 billion in 2020 prior to the political crisis.[76] The predominant sector is services with a US$404 million contribution, followed by industrial enterprises (including mining) at US$369 million, and agricultural contribution to economic output at US$279 million. With international borders and an international airport, trade and services play a crucial role in the economy of Herat

Province, making it a significant contributor to the provincial GDP. Despite being the center for trade and services, Herat Province also heavily relies on agriculture and horticulture production, including saffron, rugs, cumin, animal skins, and wool. The province is home to approximately 81,000 SMEs (formal and informal), which account for a significant 11.8 percent of the country's total, constituting the highest concentration of SMEs in Afghanistan. Provincial economic growth has been severed in other areas due to political impasse and continued insecurity, impacting the province's recovery and its role as a key trading hub.

3. Assessment of Disaster Effects: Damage and Loss Estimates

In the wake of the devastating earthquakes that struck Afghanistan, the private sector faced significant damage and loss, critically impeding its capacity to contribute to the country's already fragile economy. The sectors most affected include food processing and agribusiness, commerce, manufacturing, services, construction, and other miscellaneous industries, with an estimated total damage cost of approximately US$5.62 million and consequent losses amounting to nearly US$8.26 million over the subsequent 12 months (table 34).

Sector-wise, the food processing and agribusiness sector, a linchpin of Afghanistan's exports, sustained the heaviest blow with damages estimated at US$3.01 million, reflecting the sector's vulnerability to supply chain disruptions and loss of perishable goods. This damage translated into a loss of over US$2.34 million for the following year, indicating not only immediate impacts but also prolonged recovery challenges.

The commerce sector, encompassing wholesale and retail, suffered damages estimated at US$1.13 million. However, the sector faced losses almost two times greater than the initial damages, standing at US$2.24 million, likely due to the interruption of trade flows, reduced consumer spending, and the collapse of market structures.

Manufacturing, including pivotal industries such as textiles, carpets, and handicrafts, essential for both domestic needs and export revenues, experienced damages worth US$726,000. The ripple effects of these damages were substantial, leading to losses of nearly US$1.98 million. This sector's intricate network of artisans and small factories, often lacking robust infrastructure, bore the brunt of the disaster's aftermath, hindering production and affecting livelihoods.

The service sector, a diverse category that spans hospitality, IT, catering, human resources, and more, saw damages amounting to US$201,000. The sector encountered losses amounting to US$614,000, a reflection of the interconnected nature of services and their reliance on physical infrastructure and stable social conditions.

Construction, which could have been a pillar of recovery, faced its own damage valued at US$170,000 and losses reaching US$591,000. These figures underscore the setback in rebuilding efforts and the challenge of restoring physical assets essential for any economy's growth.

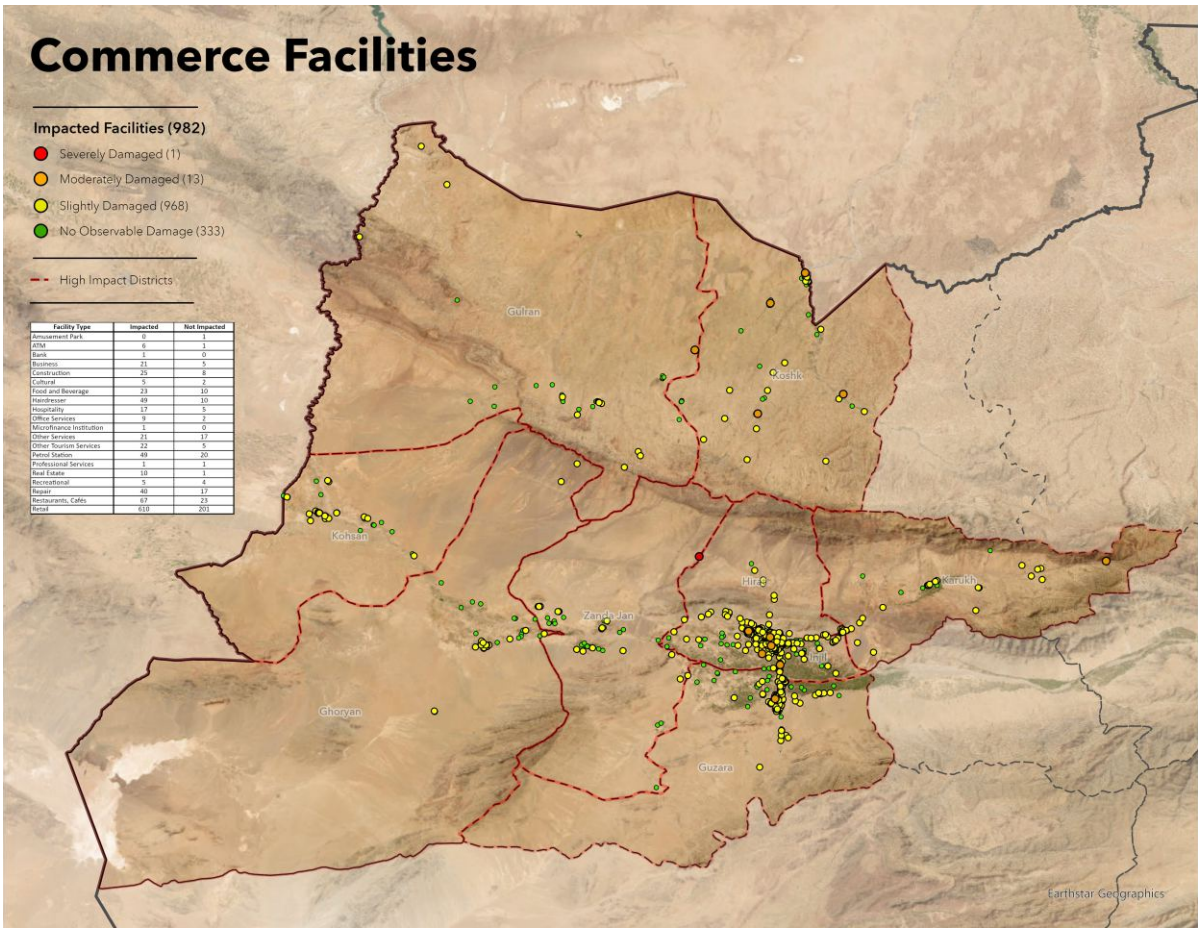
Other sectors collectively incurred damages of US$388,000, with subsequent losses reaching over US$504,000. This category likely includes a variety of small-scale industries and services that form the backbone of Afghanistan's local economies.

Table 35: Cost of Reported Damage and Losses over 12 Months by Sector

Industry	Reported Damage (US$)	Losses over 12 Months* (US$)
Food processing, agribusiness	3,014,000	2,336,000
Commerce, wholesale, retail	1,125,000	2,239,000
Manufacture, textile, carpet, handicraft, etc.	726,000	1,980,000
Services	201,000	614,000
Construction	170,000	591,000
Other	388,000	504,000
Total Estimated	**5,624,000**	**8,264,000**

* Loss estimation for formal business is calculated based on assumption of 6 months demising negative impact for formal businesses and 12 months lasting impact on informal businesses.

Map 4: Commerce Facilities



Source: IPSOS

In terms of the size of entities, small enterprises have taken the heaviest toll, with almost 67 percent of total damage referred to small businesses, followed by 31 percent of total damage to medium-sized businesses (table 36). The vulnerability of small and medium businesses to economic or disaster shocks is intrinsic and characterized by limited resources, dependency on local markets, lack of risk management practices, limited access to finance, and dependency on key personnel, family members, and/or community members. The vulnerability was further exposed following the Taliban takeover, with many closures and job lay-offs. The abrupt cutoff of civilian and security aid, sanctions, and the freezing of foreign exchange reserves created an economic shock, leading to widespread job losses and decimated social services. This explains the heavier loss in small businesses, particularly when it comes to the informal sector.

Table 36: Estimated Cost and Proportion of Damage and Losses by Entity Size

Size of entity	Damage (US$)	Loss (US$)	Damage (%)	Loss (%)
Small (5–20 employees)	3,739,000	4,564,000	66.5	55.2
Medium (20–100 employees)	1,751,000	3,539,000	31.1	42.8
Large	134,000	161,000	2.4	1.9
Total for all types of entities	**5,624,000**	**8,264,000**		

Herat, Zindajan, and Guzara Districts reported the highest cost of damage and loss (table 37).

Table 37: Estimated Cost of Damage and Losses by District

District	Damage (US$)	Losses (US$)
Herat	1,745,398	2,268,747
Injil	818,155	892,677
Zindajan	1,183,598	1,436,705
Ghoryan	207,266	156,640
Kohsan	81,270	106,953
Gulran	93,815	141,481
Kushk	77,997	123,796
Karukh	185,994	364,650
Guzara	1,230,506	2,772,352
Total	**5,624,000**	**8,264,000**

4. Linking the Effects to the Human Impact

The aftermath of the earthquakes has profound implications for living conditions, livelihoods, gender equity, and food security at the community and household levels. The substantial damages and losses incurred by businesses, particularly in the food processing, agribusiness, and commerce sectors, directly affect the economic stability of the affected districts. As businesses struggle to recover, there is a risk of reduced job opportunities, potentially leading to decreased income levels and an overall decline in living standards. Income losses at the household level can affect families' abilities to meet basic needs, including health care and education expenses.

SMEs, in particular, serve as critical sources of employment in the region. As thousands of people work for SMEs in the affected districts, the damage and loss of these businesses can disrupt livelihoods on a large scale, leaving many without a stable source of income.

The disaster's impact on businesses has distinct gender dimensions. Women are disproportionately represented in certain sectors, such as food processing and handicrafts. The damage and loss of these businesses lead to a gendered impact, potentially exacerbating existing gender inequalities in employment and income.

The disaster's impact on the food processing sector, a vital component of the local food supply chain, can affect food security in the province. Reduced production and distribution capacity in this sector may lead to disruptions in the availability of essential food items, potentially affecting both access to and affordability of food.

A Closer Look: Gender Impact

Restrictions and structural inequalities delay women's capacity to restart their businesses.

The economic situation for women in Herat was already dire in 2022, with 86 percent of women being unemployed and 8 percent partially employed.[77] These challenges were exacerbated by restrictions on women's work and mobility. The situation worsened following the earthquakes in Herat, as estimates suggest that 60 to 70 percent of women-owned businesses were affected by the disaster.[78]

In districts such as Zindajan, Ghoryan, Gulran, Injil, and Karokh women have been hit the hardest. Only around 10 percent have been able to resume their businesses. Due to societal constraints and gender-based limitations, women face greater challenges than men in restarting their businesses after the earthquakes. Because of restrictions on mobility, most women had been running their businesses from their homes, and as the result of the earthquakes, they have lost their assets in the wreckage[79] or had to relocate to other commercial spaces, requiring them to pay rent and higher utility costs (e.g., electricity). Moreover, women 's limited financial resources compared to men might also extend the time needed for them to resume income-generating activities.

The Afghan Women Chamber of Commerce (AWCCI) in Herat has also emphasized the psychological impact of the earthquakes on women entrepreneurs. The trauma of the disaster, combined with the inability to restart their work, has had a profound effect on these women. The AWCCI has highlighted the urgent need for financial support, including cash assistance and the procurement of necessary tools, to facilitate resuming their businesses.

5. Recovery Needs and Strategy

Recovery Needs Costing

Table 38 shows the estimated recovery needs related to damage in various sectors in affected areas in Herat Province. It is important to note that the figures represent estimates and that the actual recovery needs may vary based on the specific circumstances and conditions in each sector.

Table 38: Estimated Recovery Cost of Damage and Loss by Sector

Sector	Damage Recovery (US$)	Loss Recovery (US$)
Food processing, Agribusiness	3,767,500	3,154,000
Commerce, wholesale, retail	1,406,250	3,023,000
Manufacture, textile, carpet, handicraft, etc.	907,500	2,673,000
Services	251,250	829,000
Construction	212,500	798,000
Other	485,000	680,000
Estimated Total	**7,030,000**	**11,157,000**

The damage recovery needs in the food processing and agribusiness sector amount to US$3.8 million, with an additional US$3.2 million required for loss recovery, which is highest across the sectors. This highlights the earthquakes' substantial impact on activities closely linked to agriculture and livelihood.

Commerce, wholesale, and retail are the second highest sectors in terms of reported losses. The damage recovery needs are estimated at US$1.4 million, while the loss recovery is projected to be US$3 million, emphasizing the nature of losses in the sector, which are mostly related to destroyed goods rather than building and infrastructure.

The disaster's repercussions extend beyond these sectors. In manufacturing, which encompasses textiles, carpets, handicrafts, and more, the damage recovery requirement is US$907,500, with an additional US$2.7million needed for loss recovery. Additionally, the services sector needs US$251,250 for damage recovery and an extra US$829,000 for loss recovery. The construction industry grapples with damage recovery costs of US$212,500, while loss recovery amounts to US$798,000. Lastly, various other sectors have their own unique recovery needs, with US$485,000 earmarked for damage recovery and US$680,000 allocated for loss recovery.

When we consider the cumulative recovery needs for all these sectors, the total estimated cost of recovery for the private sector in the affected districts amounts to US$7 million for damage recovery and a more substantial US$11 million for loss recovery. These figures emphasize the financial challenges businesses in Herat Province face due to the disaster and the need for comprehensive recovery and support measures to help them rebuild.

Recovery must distinguish between small, medium, and large businesses, as each type of business requires a different recovery approach. PDNA estimates show that SMEs face the most substantial recovery costs, which are fundamental to the local economy and employment generation(table 39).

Table 39: Estimated Cost of Recovery by Entity Size

Size of entity	Damage recovery (US$)	Loss recovery (US$)
Small (5–20 employees)	4,674,000	6,161,000
Medium (20–100 employees)	2,189,000	4,778,000
Large	167,000	218,000
Total for all types of entities	**7,030,000**	**11,157,000**

Table 40 underscores the urgent need for targeted support to help these businesses rebuild and recover. While larger enterprises also require assistance, their recovery costs are considerably lower. The figures presented emphasize the importance of tailored recovery strategies to address the specific challenges faced by businesses of varying sizes in the affected districts.

The recovery needs also distinguish between the expenses for short-term and medium-term recovery interventions necessary to revive the MSME sector(table 40). The recovery of economic losses implies a structured financial plan to support the recovery and resilience building of MSMEs in the Herat region.

Table 40: Priority Needs in Short Term and Medium Term by Component

Interventions/Activity	Short term (up to 12 months) (US$)	Medium term (up to 3 years) (US$)	Long term (up to 5 years) (US$)	Priority (rank 1–5)	Cost (US$)
Total Cost (US$)	**14,863,000**	**3,156,000**		**n/a**	**18,019,000**[80]
Rehabilitation of damaged MSMEs assets with the assumption of 100 percent recovery for fixed assets	6,863,000[81]			1	6,863,000
Emergency grants linked to restoration of basic services, utilization of safety nets, and emergency employment schemes, etc.	8,000,000[82]			1	8,000,000
Additional analysis to improve the value chain and promotion of broader market linkages to increase the resilience of MSMEs		2,000,000		2	2,000,000
Technical assistance to financial service providers		1,156,000		2	1,156,000

The largest allocation of funds, amounting to US$6.86 million and US$8 million, are designated for compensation of fixed assets loss and providing working capital for micro, small, and medium entities, focusing on women-led/owned businesses. This capital is crucial for MSMEs to resume their operations and is linked to restoring basic services. The funds will also support the utilization of safety nets and emergency employment schemes, which are essential for sustaining the livelihoods of those affected by the disaster. This immediate financial aid is expected to act as a lifeline for businesses struggling with the sudden loss of capital and revenue.

An additional US$2 million is proposed for conducting further analysis to improve the value chains of these enterprises. This investment aims to enhance the resilience of MSMEs by promoting broader market linkages. By strengthening these connections, MSMEs in Herat can diversify their risk and build more robust business models that are better equipped to withstand future economic shocks.

Technical assistance to financial service providers is another critical component of the recovery plan, with $1.15 million allocated for this purpose. This assistance will help financial institutions in the region better support MSMEs through tailored financial products and services that meet their unique post-disaster needs. Such support is crucial for ensuring that the financial sector can effectively aid in the recovery process and contribute to the long-term sustainability of businesses.

The detailed recovery strategy is provided in the section below.

Recovery Strategy: Building Back Better

The recovery strategy for the commerce and industrial sectors affected by the earthquakes in Herat intertwines with the needs of the broader social and economic context, especially considering the slow pace of recovery from the recent political crisis. The overall strategy should be comprehensive to ensure a sustainable recovery process, addressing the needs of all businesses and reconstructing resilient infrastructure to reduce future earthquake and other disaster risks and vulnerabilities, including financial vulnerability and transfer of risks.

Recovery needs are divided into three phases: short, medium, and long term. The immediate short-term recovery measures aim at supporting the reopening and restarting of affected businesses, particularly the reconstruction of damaged fixed assets and infrastructure. Cross-cutting recovery interventions should focus on emergency employment to help people regain their livelihoods, while contributing to the revival of the local economy and creating a positive multiplier effect.

The medium- and long-term recovery efforts should extend beyond the stabilization of livelihoods. Instead, they should concentrate on enhancing social and economic conditions and catalyzing overall business and commerce growth. It is crucial to implement measures that bolster value chains in productive sectors through inclusive policies and incorporate a DRR approach into mainstream strategies.

Short-term recovery interventions

The short-term recovery interventions aim to provide emergency employment, coupled with enterprise recovery support, to help people regain their livelihoods while contributing to the revival of the local economy and creating a positive multiplier effect. The measures include:

Restoration of basic services as a response priority: Economically, disruptions in service provision can impede the recovery of business and commerce, particularly informal, micro, and small entities. Making the restoration of lifelines, such as roads, communications, and power, a response priority will surely benefit the swift recovery of MSMEs, enabling them to act as agents of recovery for the broader community

- **Address livelihood recovery through locally driven value chain restoration/upgrade and the promotion of broader market linkages:** Herat Province heavily relies on agricultural and horticultural production, which are the basis for MSME operations. Improving the value chain will increase the resilience of the local MSMEs.

- **Link the establishment and utilization of safety nets and emergency employment schemes to commerce and business recovery programs and provide comprehensive support packages for target groups (e.g., women, youth):** The established safety nets should be used in post-disaster response to support MSMEs and provide appropriate, income-generating opportunities, such as emergency employment in response and recovery stages (safety net payments to employees during the recovery process). These safety nets support the recovery of MSMEs by providing the necessary income to recover as well as supporting entire communities to return/stay in earthquake-affected areas and engage in livelihood recovery processes. The emergency support to rapid recovery may entail:

- Providing contracts to local MSMEs including those led by women to serve the affected communities—supports the demand for local products and services.
- Providing employment to vulnerable workers—supports income generation and demand for local products.
- Emergency schemes should be linked to microfinance products, soft loans, grants, and insurance schemes to build future resilience and promote investments in new business.

- **Facilitate access to finance** through microfinance, which is crucial for restarting operations and replenishing capital, particularly in remote areas most affected by the earthquakes. This may entail fostering risk-sharing and de-risking mechanisms, enabling easier financing for impacted firms, formal and informal.

- **Emergency grants for small businesses** in the earthquake-affected areas of Herat are paramount in facilitating their recovery and resilience. These grants can provide vital financial support to address immediate needs, such as repairing infrastructure, restocking inventory, and covering operational expenses, enabling women entrepreneurs to sustain their businesses in the aftermath of the disaster. Additionally, such grants can contribute to the preservation of employment opportunities and the continuity of essential goods and services, thereby fostering the broader economic recovery of the affected areas. By specifically targeting women-owned businesses, these emergency grants can help mitigate the disproportionate impact of earthquakes on women entrepreneurs.

- **Emergency grants and financial support to women-led SMEs:** Establish dedicated emergency grants for women-led SMEs to facilitate immediate recovery. These grants should be designed to cover the repair of infrastructure, replenishment of inventory, and operational expenses. This direct financial aid will enable women entrepreneurs to quickly resume business operations, maintain employment, and continue providing vital community services.

Medium-term to long-term recovery recommendations to build back better

The medium- and long-term recovery interventions should go beyond the stabilization of livelihoods by improving the social and economic conditions in the affected areas and boosting the overall growth of business and commerce. Actions should be taken to enhance the value chain in the productive sectors with inclusive policies and to mainstream DRR.

Careful attention should be paid to the underrepresented and disadvantaged social groups in entrepreneurship, such as women, youth, and minority ethnic groups who are returnees from Pakistan. Challenges among these groups include a lack of entrepreneurship skills, difficulty in accessing finance for business start-ups, and difficulties navigating the new Sharia regulatory framework. Increasing entrepreneurship among these groups, as well as improving the quality of their business start-ups, represents an opportunity to increase participation in the labor market and boost economic growth and speedy recovery in earthquake-affected areas. The international community should employ programs that encompass direct grants and other tailored instruments to ensure improved access to finance, strengthen entrepreneurship skills, and help build entrepreneurial networks.

Earthquakes and other natural hazards generate significant economic risk and create major financial volatility. Risk transfer is one tool that can assist with the ex-ante management of disaster risk by removing or reducing the financial risks arising from natural hazards. This instrument can be aimed at individuals, households, farmers, businesses, and organizations. To apply such instruments, disaster risk financing and insurance policies and markets must be created to help Afghan people protect their assets and businesses in the event of a disaster. The international development community, in partnership with the financial sector, should facilitate the development of tailored financial protection products that increase the ability of households, businesses, and agricultural producers to respond and cope more quickly and resiliently with future disasters. The following areas should be considered:

- Financial protection for resilient livelihoods and emergency support to households through social protection mechanisms, enabling faster and more transparent disaster response and helping reduce humanitarian impacts.

- Financial protection for homeowners and small businesses by developing markets for private property disaster risk insurance that protects beneficiaries against losses arising from property damage.

- Financial protection for agricultural production in implementing sustainable, cost-effective partnerships in agricultural insurance as part of broader agricultural risk management.

Access to finance remains the biggest constraint that prevents firms from growing faster and achieving financial sustainability. While banks in Afghanistan used to be very liquid, they are often unwilling to lend to MSMEs for several reasons, including: (i) MSMEs' inability to provide standard financial information (i.e., audited financial statements, business plans), adequate collateral (type and value of assets), or credit history; (ii) gaps in financial infrastructure (limited coverage of public credit registry and collateral registry); and (iii) limited capabilities of banks to serve the MSME market segment exacerbated by new Sharia regulations (e.g., capacity of loan officers, product design, risk management, and outreach). The potential credit needs of MSMEs are estimated at more than US$4.7 billion. Women-owned MSMEs are particularly underserved and represent barely 2 percent of the current MSME financing, indicating an immense gap. A comprehensive development program has to be employed by international partners to support the financial sector in developing tailored Islamic products for MSMEs.

Capacity Building and Access to Finance for Women Entrepreneurs

There is a need to implement specialized programs to enhance the financial literacy of women entrepreneurs and provide them with the skills needed to navigate the new Sharia regulatory framework. Additionally, develop tailored financial products and microfinance solutions that cater to the specific needs of women-led businesses, ensuring they have the capital required to recover and grow in the medium to long term.

Understanding and complying with cumbersome trade processes and barriers could help local businesses reintegrate into international value chains. In today's global trade, local firms need a better understanding of international regulatory frameworks and standardization/packaging requirements to be able to export. Technical support in partnership with business associates and ACCI may include training and workshops on advanced packaging and processing techniques, hygiene standards, and quality control as well as sessions on packaging design to extend shelf-life and appeal to both local and international markets. Business management skills training should be carried out focusing on financial literacy, marketing, supply chain management, and e-commerce to help producers, particularly women entrepreneurs, expand their market reach. Assisting in obtaining quality certifications like ISO and HACCP, crucial for accessing international markets, has to be envisaged.

As the skills and education of the workforce are correlated with business performance, it is critical to ensure that firms have access to the skills they need. After August 2021, there has been a significant exodus of skilled workers from the country, deteriorating the market of skilled and educated labor. As a result, businesses are likely to employ less "employable" workers with lower levels of education and skills. The employment support program and TVET system have to be bolstered to ensure that enterprises enjoy an increased supply of skilled workers to support their efforts in improving productivity and competitiveness. TVET system competence frameworks should be brought up to international standards.

Support for Market Integration and Skills Development for Women and Girls

Technical support and training for women-led SMEs should be offered to help them reintegrate into local and international value chains. This includes assistance with advanced packaging, processing techniques, hygiene standards, quality control, and acquisition of quality certifications. At the same time, strengthen the TVET system to ensure a skilled workforce is available to support the productivity and competitiveness of these enterprises.

In summary, the damages and losses suffered by the private sector in Herat following the disaster have far-reaching consequences. These effects permeate various aspects of life, from economic stability and livelihoods to gender equity, food security, and social inclusion, impacting both communities and households. As recovery efforts commence, it is imperative to address these multifaceted challenges comprehensively, considering the diverse needs and vulnerabilities of the affected population and businesses.

6. Methodology and Limitations

The assessment relied on satellite imagery and data from the Herat Chamber of Commerce, the Afghan Women Chamber of Commerce, the de facto Management Authority of Industrial Park, and the de facto Trade Department.

For the formal sector (registered businesses with active licenses), the information received on damages and losses has been further adjusted, as not all formal businesses reported their damages and losses to the de facto Chamber of Commerce or the Department of Commerce and Industry. The PDNA team has identified that the damages and losses for the formal sector across industries and businesses are about 30 percent higher than reported through the DFA due to the reasons above.

Limitations encompass a certain number of women-owned businesses, which often operate outside the purview of registration and formal recognition, making it challenging to accurately assess the scope of their needs. Moreover, the PDNA's ability to quantify losses and damages is further constrained when it comes to home-based businesses, which are predominantly led by women. These businesses typically lack formal records of assets and operations, which are crucial for precise evaluations.

The costing exercise took into account these limitations and further estimated the size of the informal economy, as informal businesses were not approached by the DFA nor reported their losses. Based on key informant interviews and baseline sources, it was identified that the informality at the level of small businesses adheres to the ratio of approximately 5:1, implying that for one formal small entity, there are five informal counterparts. Meanwhile, at the level of medium-sized businesses, the informality incidence is of smaller magnitude, at the ratio of 3:1. Informality is attributed to micro, small, and medium businesses and is not observed for large-scale enterprises. The cost estimation has been adjusted based on this assumption.

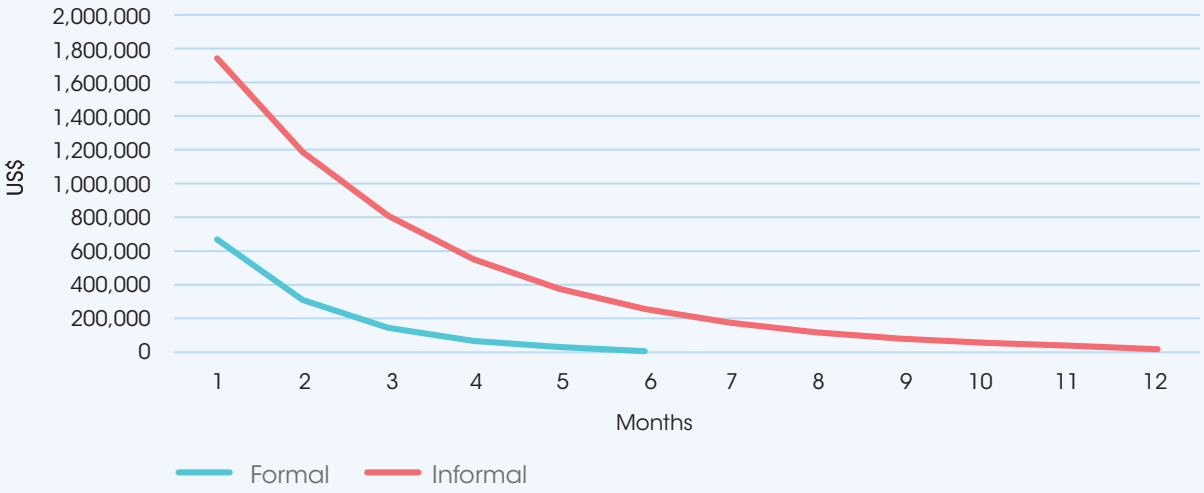
Estimation of Economic Losses

Economic losses are included in the estimation of losses in the flows of the economy that arise from the temporary absence of damaged and/or destroyed fixed assets,[83] due to reduced demand, restriction of sales, including travel restrictions, cut off from services, etc. Collected data refer to the reported losses by companies for the month of October. The losses are assumed to persist for an extended period; however, their adverse effects gradually wane as time progresses. Based on this assumption, the impact of losses has been calculated as an exponential decay function, which helped capture a diminishing impact of shock on industry and commerce over a specified timeframe.

Economic losses consider the vulnerability of formal and informal businesses. The informal sector is more susceptible to shocks and disasters due to limited resources, low barriers to entry, lack of access to services and social protection, limited access to finance, and its role as a safety net for individuals and families. It is believed that the informal sector experiences economic hardship for twice as long as the formal sector.[84]

The schematic representation of losses over time for formal and informal sectors is in figure 10.

Figure 11: Commerce and Industry Economic Losses over 12 Months after the Earthquakes



Cost Recovery Tolls

Financial requirements or needs to ensure the economic recovery of the commerce and industry sector are defined as the amounts of funding required to ensure the return of the sector to its normal level of functioning and sales. These needs include the availability of financing to ensure sufficient working capital for the affected enterprises to restart operations and possibly refinance or reschedule non-performing loans arising from the disaster.

The amount of financing required for the recovery scheme is tallied based on the estimated value of disaster-induced economic decline for each type and level of enterprise. The PDNA team applied the rate of 35 percent of the value of losses based on available literature and sources on disaster assessments.[85] The same sources suggest that the value of damage to obtain disaster-resilient reconstruction needs is between 10 percent and 25 percent, depending on degree, intensity, and devastation.

Such financing may be channeled to the entrepreneurs through different ways, depending on their size and creditworthiness: cash grants for micro-sized entrepreneurs to avoid their resorting to using informal credits from loan sharks and soft-term credit for SMEs channeled through the development or private bank systems, with lower-than-normal interest rates and longer repayment periods. Large enterprises that are usually at least partly insured may require temporary tax relief during recovery.

Infrastructure Sectors

Photo Credit: UNDP Afghanistan

Water and Sanitation

1. Summary

Total rehabilitation and recovery cost of the public water supply system affected by the earthquakes in Herat Province is estimated to be US$7.9 million. The estimated cost of damage and losses are estimated at US$6.2 million and US$3.2 million, respectively. The earthquakes' impact has been particularly severe to the water supply infrastructure, leading to substantial damage to essential water points and sanitation facilities in the affected districts, increasing the potential for disease outbreaks. Around 400,000 people (56 percent women and 14.6 percent girls under age 15) who collect water for households without drinking water on premises are affected by poor access to water supply. In addition, 37 percent of the affected population lack access to sufficient water and 46 percent reported concerns about water quality as a result of the earthquakes.

These findings highlight the urgent need for targeted interventions to restore and improve access to safe and reliable water sources for the affected population. A total of US$7.9 million is required for the rehabilitation and recovery of sustained water supply service within a two-year period, US$1.6 million for immediate/short-term needs (12 months) and US$6.3 million for medium needs (2 years), respectively. The estimated budget covers only the public water supply in the affected communities. The rehabilitation and construction cost for household sanitation facilities will be covered under the housing sector, whereas institutional WASH for schools and health centers is covered under education and health sectors, respectively.

Lifesaving interventions through national and international NGOs are ongoing since the onset of the emergency, which focus on water trucking, rehabilitation of damaged water supply system, construction of emergency latrines, distribution of WASH supplies, and hygiene promotion. According to MICS 2022–23, around 31.8 percent of the population in Herat Province are without access to safe drinking water and nearly 42.3 percent of the same population without access to basic sanitation services, while 7.6 percent of the population practiced open defecation.

Table 41: Total Damage, Loss, and Need by Province/District - Water and Sanitation

Province/District	Total Damage (US$)	Total Loss (US$)	Total Need (US$)
Ghoryan	543,234	43,355	612,422
Gulran	956,286	319,160	1,161,341
Guzara	541,515	4,000	597,039
Herat	30,143	2,000	33,844
Injil	2,570,565	735,739	3,079,875
Karukh	213,076	127,387	278,059
Koshan	2,152	-	2,367
Kushk	449,980	740,860	748,987
Zindajan	914,414	1,219,794	1,424,070
Grand Total	**6,221,366**	**3,192,295**	**7,938,004**

2. Pre-Earthquakes Context and Baseline

Following the earthquakes, families are living in the open, in makeshift shelters, or informal settlement sites, making them vulnerable to weather, health issues, and other protection hazards. The earthquakes have hit vulnerable communities, already struggling due to decades of conflict and underdevelopment, leaving them with limited resilience to handle multiple concurrent shocks. Moreover, the earthquakes occurred during Afghanistan's lean season, just before winter, when households' food resources were most limited. Extensive damage to water and sanitation facilities has raised concerns about disease outbreaks, particularly acute watery diarrhea. Immediate and mid-term investment in activities to detect and prevent the spread of acute watery diarrhea and other infectious diseases and to build community resilience for future shocks is crucial.

The situation in the WASH sector continues to remain severe with a deterioration in WASH services since August 2021. The situation remains dire due to the economic constraints the country is facing as well as the prolonged drought in different part of the country, which resulted in dropping groundwater levels of shallow wells. The preliminary results of the WoAA[86] conducted in August and September 2023 continue to show a precarious situation in Afghanistan. While the humanitarian response has prevented a catastrophe, the situation has not improved, with some sectors, including WASH, seeing a deterioration. The proportion of households experiencing barriers to access safe water increased from 48 percent in 2021 to 67 percent in 2023. Flash floods, earthquakes, landslides, prolonged drought and economic shocks remain the primary drivers of humanitarian needs in 2023.

The limited access to basic WASH services was a major crisis in the earthquake-affected areas prior to the disaster, and the shocks further exacerbated the situation, especially among vulnerable people. The overall situation of WASH, as a basic need of people and key to the prevention and control of communicable diseases, remains poor. This is evidenced by key WASH indicators, with around 31.8 percent of the population in Herat Province without access to safe

drinking water and nearly 42.3 percent of the same population without access to basic sanitation services, including 7.3 percent of the population practicing open defecation. Moreover, over 19.8 percent of the Afghanistan population (around 8 million people) still defecate in the open due to a lack of any form of sanitation facility.[87]

Based on the de facto MRRD's rural water supply data, which captures the public water supply systems constructed with different WASH sector partners since 2010, around 2,400 water supply systems (borewell with hand pump, pipe scheme with electrical pump, pipe scheme with gravity-fed system, and pipe scheme with solar pump) exist in the affected districts with 30 percent–40 percent non-functional rate, especially the hand pumps, which contribute to 71 percent of the water supply system in the affected areas.

Table 42: Pre-Earthquakes Status of Public Water Supply Systems by District

District	Water supply system				
	Borewell with hand pump	Pipe scheme with electrical pump	Pipe scheme with gravity-fed system	Pipe scheme with solar pump	Reservoir
Ghoryan	153	0	113	7	0
Gulran	107	0	83	3	18
Guzara	175	0	86	9	5
Herat	75	0	0	8	0
Injil	671	0	107	47	5
Karukh	94	1	55	59	7
Koshan	112	4	22	5	2
Kushk	284	0	32	16	12
Zindajan	58	2	23	3	3
Total	**1,729**	**7**	**521**	**157**	**52**

Source: Rural Water Supply, Sanitation and Irrigation Programme (Ru-WatSIP), MRRD

3. Assessment of Disaster Effects: Damage and Loss Estimates

The estimation of damages, loss, and need for rehabilitation of the public water supply to restore service is based on the WASH sector assessment data. Based on the MSRAF data from October 7, 2023, water supply systems (borewells with hand pumps, electrical pumps, and piped water distribution system, dug wells, *kariz*, spring, and *kanda* [traditional reservoir]) in 225 villages were affected. The water supply systems were fully damaged in 155 villages and partially damaged in 97 villages, resulting in around 400,000 people affected by poor or no access to water supply. Further, 37 percent of the affected population lacked access to sufficient water and 46 percent reported concerns about water quality as a result of the earthquakes.

The budget estimation of damage, loss, and need is done using the assumptions listed below and the current cost for the construction of different water supply systems with UNICEF support. Based on MICS data for Herat Provinces, 78.6 percent of the population use improved drinking water sources and 64.1 percent has water on premises. The rehabilitation or restoration work will be to ensure basic water supply to the same affected population and resume functionality for households dependent on hand pumps.

- The total damage for **borewells with hand pumps** amounts to US$593,667, of which 23 percent were due to minor damage, 45 percent to partial damage, and 33 percent to full damage.

- The total damage for **pipe schemes with electrical pumps** amounts to US$59,890, of which 4 percent were due to minor damage, 32 percent to partial damage, and 64 percent to full damage.

- The total damage for **pipe schemes with gravity-fed system** amounts to US$4.4 million, of which 19 percent were due to minor damage, 47 percent to partial damage, and 34 percent to full damage.

- The total damage for **pipe schemes with solar pumps** amounts to US$1.1 million, of which 26 were due to minor damage, 47 percent to partial damage, and 27 percent to full damage.

- The total damage for **reservoirs** amounts to US$89,570, of which 16 percent were due to minor damage, 63 percent to partial damage, and 21 percent to full damage.

Table 43: Estimated Cost of Water Supply Facility and Coverage

Type	Per facility cost (US$)	Per person cost (US$)	Coverage (number of persons)
Hand Pump	2,000	14.3	140
Electric Pump	48,000	30.0	1,600
Dug Well	1,700	12.1	140
kariz	90,000	45.0	2,000
Piped Water	56,000	35.0	1,600
Spring	48,000	30.0	1,600
kanda	18,000	11.3	1,600

Source: UNICEF -WASH section

Table 44: Number of Borewells with Hand Pump by Extent of Damage and District

District	Minor damage	Partial damage	Full damage	Functioning
Ghoryan	12	13	1	127
Gulran	2	14	10	81
Guzara	8	21	2	144
Herat	2	3	2	68
Injil	147	132	49	343
Karukh	6	1	1	86
Koshan	-	1	-	111
Kushk	34	24	13	213
Zindajan	13	13	20	12
Grand Total	**224**	**222**	**98**	**1,185**

Source: MSRAF data from October 7, 2023

Table 45: Number of Pipe Schemes with Electrical Pump by Extent of Damage and District

District	Minor damage	Partial damage	Full damage	Functioning
Ghoryan	-	-	-	-
Gulran	-	-	-	-
Guzara	-	-	-	-
Herat	-	-	-	-
Injil	-	-	-	-
Karukh	1	-	-	-
Koshan	-	1	-	3
Kushk	-	-	-	-
Zindajan	-	1	1	-
Grand Total	**1**	**2**	**1**	**3**

Source: MSRAF data from October 7, 2023

Table 46: Number of Pipe Schemes with Gravity-Fed System by Extent of Damage and District

District	Minor damage	Partial damage	Full damage	Functioning
Ghoryan	9	10	-	94
Gulran	2	11	8	62
Guzara	4	10	1	71
Herat	-	-	-	-
Injil	23	21	8	55
Karukh	4	1	-	50
Koshan	-	1	-	21
Kushk	4	3	2	23
Zindajan	5	5	8	5
Grand Total	**51**	**62**	**27**	**381**

Source: MSRAF data from October 7, 2023

Table 47: Number of Pipe Schemes with Solar Pump by Extent of Damage and District

District	Minor damage	Partial damage	Full damage	Functioning
Ghoryan	1	1	-	5
Gulran	-	1	-	2
Guzara	1	1	-	7
Herat	-	1	-	7
Injil	10	9	3	25
Karukh	4	1	-	54
Koshan	1	-	-	4
Kushk	2	1	1	12
Zindajan	-	1	1	1
Grand Total	**19**	**16**	**5**	**117**

Source: MSRAF data from October 7, 2023

Table 48: Number of Reservoirs by Extent of Damage and District

District	Minor damage	Partial damage	Full damage	Functioning
Ghoryan	-	-	-	-
Gulran	-	2	2	14
Guzara	-	1	-	4
Herat	-	-	-	-
Injil	1	1	-	3
Karukh	1	-	-	6
Koshan	-	-	-	2
Kushk	1	1	-	10
Zindajan	1	1	-	1
Grand Total	**4**	**6**	**2**	**40**

Source: MSRAF data from October 7, 2023

Table 49: Estimated Cost of Damage by Asset Type

Damage		
Asset Type	**Damage Estimates (US$)**	**Share (%)**
Water treatment facilities	-	0.0%
Sewage treatment plants	-	0.0%
Water pumping stations	-	0.0%
Sewage pumping stations	-	0.0%
Water supply networks	5,538,128.2	9.5%
Sewer networks	-	0.0%
Wells	593,667.1	9.5%
Laboratories	-	0.0%
Clean water tanks	-	0.0%
Water towers	89,568.3	1.4%
Total	**6,221,364**	**100%**

Table 50: Total Loss by Category

Loss		
Category	**Loss Estimate (US$)**	**Share (%)**
Lower revenues from delivering water supply services	-	0.0%
Demolition and debris management	-	0.0%
Costs due to increased energy consumption/prices	-	0.0%
Costs due to increased fuel consumption/prices	-	0.0%
Costs due to water trucking, provision of WASH supplies, emergency latrines, and hygiene promotion	3,192,295.0	100.0%
Total	**3,192,295**	**100%**

Table 51: Overview of Damage, Loss, and Needs

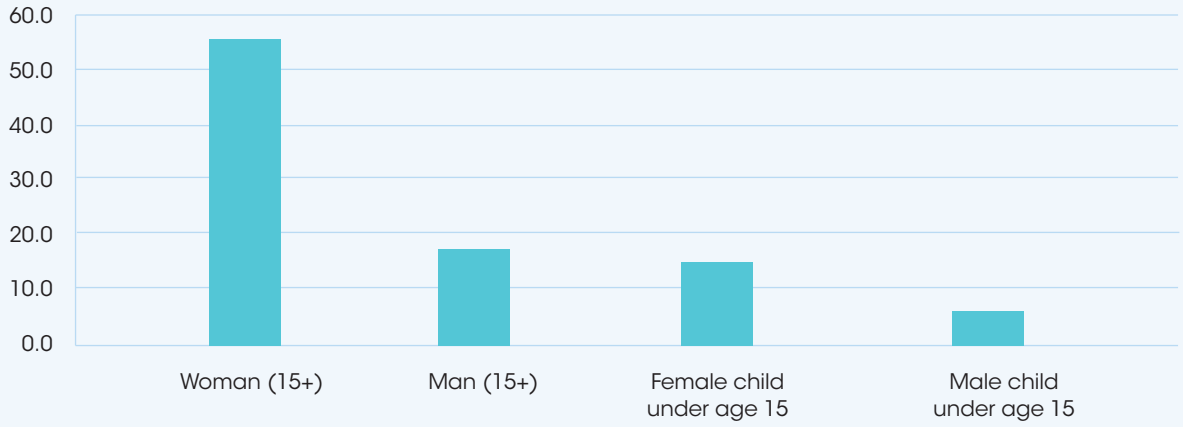
District	Damage (US$)	Loss (US$)	Needs (US$)
Ghoryan	543,234	43,355	612,422
Gulran	956,286	319,160	1,161,341
Guzara	541,515	4,000	597,038
Herat	30,143	2,000	33,843
Injil	2,570,565	735,739	3,079,874
Karukh	213,076	127,387	278,059
Koshan	2,152	-	2,367
Kushk	449,980	740,860	748,987
Zindajan	914,414	1,219,794	1,424,070
Grand Total	**6,221,366**	**3,192,295**	**7,938,002**

4. Linking the Effects to the Human Impact

Based on the MICS data, 78.6 percent of the population in Herat Province use improved sources of drinking water, out of which 60 percent of households get safe water from piped water to dwelling, yard, neighbors, or public tap. In households without drinking water on premises (28.4 percent of the province), the collection of potable water for family use for drinking, cooking, and personal hygiene is done mainly by women (age 15+) (56 percent of those who collect water), followed by men (age 15+) (16.4 percent), and girls (under age 15) (14.6 percent) (figure 11). The damage of existing water supply systems by the earthquakes and delayed rehabilitation or restoration of the damaged water supply systems in the affected communities has a threefold impact: the vulnerability of the affected population to WASH-related diseases, increased and prolonged burden of women on the collection of water for family use, and high risk of sexual and

gender-based violence and safety risks for women while traveling long distance to collect water.

Figure 12: Person Who Usually Collects Potable Water



Source: Afghanistan Multiple Indicator Cluster Survey (MICS 2022-2023)

The priority remains to achieve humanitarian lifesaving results for the most vulnerable population. Simultaneously, continue to build a stronger linkage between humanitarian and basic human needs programming through strengthening the resilience of local systems and capacity building of local communities to achieve results with durable solutions in a cost-effective manner.

Eight WASH partners are operating in Herat province and implement different water supply projects. To date, the WASH Cluster and its partners have supported 39,055 people (27 percent men, 25 percent women, 24 percent girls, 24 percent boys) with full WASH packages (water, sanitation, hygiene promotion, and supply) delivered by UNICEF, IOM, Mercy Corps, World Vision International , IRW, Agency for Technical Cooperation and Development , Danish Committee for Aid to Afghan Refugees , and International Rescue Committee in 77 affected villages in Zindajan, Gulran, Injil and Kushk/Robat Sangi Districts.

A Closer Look: Gender Impact

Water Challenges and Gender Disparities in Earthquake-affected Areas

Prior to the earthquakes, 46 percent of women living in men-headed households said they could access the primary water source on their own; 33 percent reported they could access if accompanied, and 21 percent said they could not access the primary water point at all.[88] For those who could not access, 29 percent said that water points were too difficult or too far to be reached, 20 percent mentioned an insufficient number of water points and a long wait at water points, and 9 percent said it was socially unacceptable to go to water points.

These challenges have been exacerbated by the earthquakes. For example, in Qafaslan Village, two-thirds of households reported challenges to accessing water,[89] which often burdens women further as they are most frequently in charge of collecting water. Women's limited access to water points has gender-specific impacts, contributing, for example, to protection concerns and barriers in managing menstrual hygiene. During Focus Group Discussions, women shared the need to go to the bathroom and bathe in areas outside of their communities, which puts them at risk of experiencing GBV, as well as the need for dedicated non-food items, such as dignity kits containing menstrual hygiene items, linked to the provision of adequate bathing and toilet facilities

5. Recovery Needs and Strategy

The WASH sector plans to implement a two-phase strategy to ensure the sustainable recovery of the WASH service and restore the water supply to the affected community, which will provide the immediate basic human right to water and sanitation as well as response to disease outbreaks because of deteriorating WASH service in the affected areas.

Rapid life-saving WASH response priorities activities include:

- Emergency water trucking with provision of water tanks with distribution points.
- Emergency latrines on the onset of new emergencies (flood, earthquake, new IDPs).
- Integrated hygiene promotion and distribution of WASH non-food items (soap, water treatment chemicals, jerricans and hygiene/consumables kits) in coordination with social behavior change (SBC). The hygiene promotion will be conducted through coupled hygiene promoters (men and women) to ensure women feel more comfortable engaging with female staff on their needs and concerns.
- Inclusive cleaning campaign and solid waste management on the onset of new emergencies (flood, earthquake, new IDPs) to ensure full participation and access of women and girls.

Priority activities to improve resilience of the vulnerable population by providing sustainable WASH services/solutions include:

- Revision of the existing water supply system design for the rehabilitation and reconstruction of earthquake-resilient water wells, reservoirs, and water distribution networks.
- Repair, rehabilitation, augmentation, and maintenance of WASH facilities.
- Construction/rehabilitation of water harvesting systems, if possible.
- Construction/rehabilitation of sanitation facilities, which is accessible to all (gender disaggregated for communal emergency sanitation facilities and institutional WASH).
- Capacity building for operations and maintenance and sustainable WASH service delivery considering equal representation of men and women.

An estimated total of US$7.9 million is needed to cover the immediate and medium-term needs for the rehabilitation and recovery of public water supply in the nine districts for the coming two years (table 52).

Table 52: Immediate and Medium-term Needs in the WASH Sector by District

District	Immediate/Short-term Needs (US$) Year 0–1 (12 months)	Medium-term Needs (US$) Year 1–3 (24 months)	Long-term Needs (US$) Year 3–5 (36 months)	Total Needs (US$)
Ghoryan	122,484	489,938		612,422
Gulran	232,268	929,073		1,161,341
Guzara	119,408	477,631		597,039
Herat	6,769	27,075		33,844
Injil	615,975	2,463,900		3,079,875
Karukh	55,612	222,447		278,059
Koshan	473	1,894		2,367
Kushk	149,797	599,190		748,987
Zindajan	284,814	1,139,256		1,424,070
Total	**1,587,600**	**6,350,404**		**7,938,004**

Table 53: Priority Needs in Immediate and Medium Term by Component

Category	Component	Immediate/ Short-term Needs Year 0–1 (12 months)(US$)	Medium-term Needs Year 1–3 (24 months) (US$)	Long-term Needs Year 3–5 (36 months) (US$)	Total Needs (US$)
Reconstruction Needs	Water treatment facilities	-	-	-	-
	Sewage treatment plants	-	-	-	-
	Water pumping stations	-	-	-	-
	Sewage pumping stations	-	-	-	-
	Water supply networks	1,413,282	5,653,128	-	7,066,409
	Sewer networks	-	-	-	-
	Wells	151,457	605,828	-	757,285
	Laboratories	-	-	-	-
	Clean water tanks	-	-	-	-
	Water towers	22,861	91,446	-	114,307
Service Delivery Restoration Needs	Demolition and debris management	-	-	-	-
	Facility Operational costs	-	-	-	-
	Increased energy/fuel consumption support	-	-	-	-
Total		**1,587,600**	**6,350,402**		**7,938,002**

6. Methodology and Limitations

The WASH sector analysis for the estimation of damage, loss, and rehabilitation of the public water supply to restore services is based on the MSRAF data, WASH sector assessment data, and de facto MRRD – Rural water supply data, which capture the public water supply system constructed with different WASH sector partners since 2010. Key limitations faced in the estimation of needs included the unavailability of detailed technical assessments of the water supply system for e.g. the affected family-based water supply systems, required for estimating needs based on public water supply systems to make it earthquake resilient.

Energy

1. Summary

The recent earthquakes that struck Herat Province have caused damage and loss in the energy sector infrastructure. The transmission poles, distribution transformers, and substation buildings have been affected in the impacted areas with a total damage US$1.1 million. The earthquakes resulted in the collapse and destruction of several transmission poles, leading to disruptions in power transmission. Additionally, the distribution transformers, crucial components for local power supply, have suffered damage, affecting their functionality. Moreover, several substation buildings have been structurally compromised, further exacerbating the challenges faced in the energy sector. This damage has resulted in widespread power outages and hindered the provision of electricity to more than 3,000 households in the affected communities with a revenue loss of around US$11,500 daily constituting the total loss for the sector of US$0.7. The damage to the power sector has affected more than the nine districts covered under the assessment since the power systems are interconnected and one system failure impacts another.

Considering the damage incurred, addressing the recovery needs in the energy sector is of utmost importance. The primary focus should be on rebuilding and replacing the damaged transmission poles to restore the power transmission network swiftly. Simultaneously, urgent attention must be given to the repair and replacement of distribution transformers to ensure the resumption of electricity supply to local communities. Furthermore, the reconstruction and strengthening of substation buildings are vital to guarantee the safe and efficient operation of the energy infrastructure.

It is crucial to mobilize resources, both human and financial, to expedite the recovery process and restore the energy sector to its pre-disaster state. The total amount for recovery needs is US$8.1 million, which includes the needs in the short term, such as conducting a rapid assessment of the energy infrastructure to develop a recovery plan in the affected areas, conduct capacity building trainings for Da Afghanistan Breshna Sherkat (DABS) staff on the maintenance of the distribution and transmission equipment, and provision of solar street lighting. Other needs for the medium and long term

are also of crucial importance to rebuilding a resilient energy sector that can withstand future disasters and provide reliable electricity services to the affected areas. These recovery needs include capacity building in the construction of disaster-resilient energy infrastructure, providing solar energy systems to the affected 3,304 households, and conducting a detailed study on building disaster-resilient transmission, synchronization, load balancing, and upgrading of the protection system of the national grid.

Table 54: Total Damage, Loss, and Need by Province/District - Energy

Province/District	Total Damage (US$)	Total Loss (US$)	Total Need (US$)
Gulran	52,500	-	
Guzara	48,535	-	
Herat	575,034	370,435	
Injil	113,604	210,783	
Koshan	26,268	-	
Kushk	141,936	127,387	
Zindajan	40,000	-	
Provincial	84,606		8,108,055
Grand Total	**1,082,483**	**689,530**	**8,108,055**

2. Pre-Earthquakes Context and Baseline

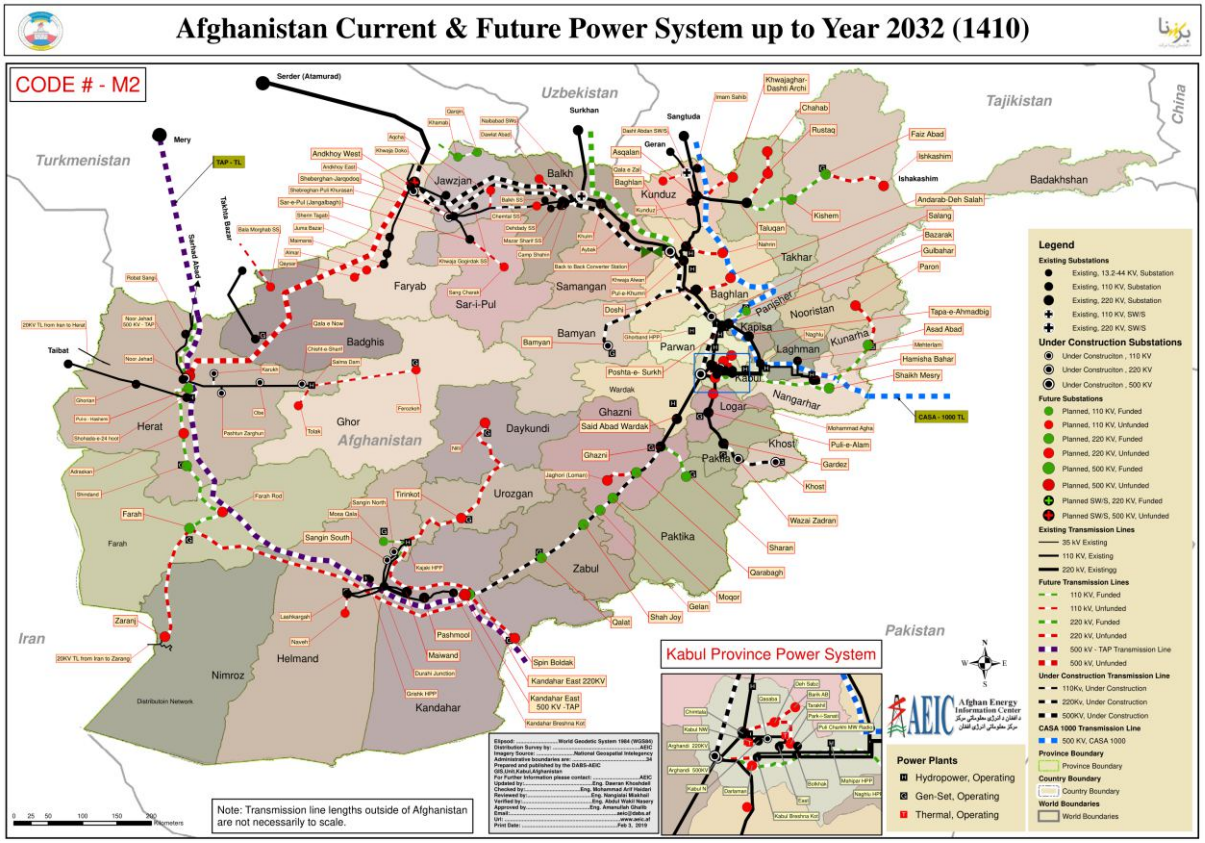
The power sector in Afghanistan is characterized by extremely low levels of access to electricity, particularly in the rural areas. In the urban areas, where access to grid supply is relatively higher, power availability is extremely unreliable with rampant low voltage problem. Household energy access in the country is only about 35 percent, with 90 percent for urban and 10 percent for rural population.

The geopolitical changes in Afghanistan after 2021 has had implications for power generation and energy infrastructure. The stability and continuity of power supply has become a key concern amid the evolving political situation and associated economic uncertainties. Efforts to enhance power generation capacity and improve energy access remain critical priorities at the current stage. The development of renewable energy sources, such as solar and wind, presents a promising avenue for reducing dependence on imported electricity and increasing domestic power generation. Balancing the energy demand with available resources and ensuring the efficient utilization of energy infrastructure will be key considerations in the coming years.

In Afghanistan, the electricity sector is run by DABS, a publicly company under the de facto Ministry of Electricity. DABS is the single source for electricity generation, transmission, distribution, and import throughout Afghanistan on a commercial basis. It is a limited liability company with its equity shares divided among the de facto Ministry of Finance (45 percent), de facto Ministry of Energy and Water (35 percent), de facto Ministry of Economy (10 percent), and de facto Ministry of Urban Development (10 percent). The company's objective is to provide reliable power at a reasonable price to facilitate national economic growth. DABS is responsible for managing the revenue generated from electricity distribution throughout the country.

The energy supply of Afghanistan is a combination of imported power from neighbouring countries and a hydropower plant with mini-solar power plants. Afghanistan relies on imported power from neighbouring countries to cover 70 percent of its energy needs. The energy supply situation has worsened following the reduction of imported energy from Uzbekistan. To provide fuel to the diesel power plants, DABS must renew the contract with fuel suppliers but is unable to do so because it is in a financial crisis. Herat is energized by imported transmission lines from Iran and Turkmenistan, and a solar power plant with the capacity of 1.7 MW as well as wind power with the capacity of 0.3 MW.

Map 5: Current and Future Power System in Afghanistan up to Year 2032



Source: Afghanistan Energy Information Center

3. Assessment of Disaster Effects: Damage and Loss Estimates

The earthquakes had a moderate impact on the energy system in Herat Province. The primary damage was mainly to the local distribution network and buildings of the local powerhouse, which has led to power outages in some districts and a few villages, affecting 3,304 households, potentially accounting for US$11,492 loss per day. In addition, major cracks were observed in the building structure of two power substations, but the cracks did not cause any power outage. Major energy infrastructure, i.e., generation power plant, transmission lines, and distribution substations have not been impacted by the earthquakes. The local population suffered from the absence of energy supply for a short period of time, but the Herat energy sector quickly re-energized the system and supplied the affected areas with energy.

Damage to Substation Buildings

Based on interviews conducted with the DABS branch in Herat and the field visits to verify and validate the collected data, it has been determined that a total of 42 buildings were affected by the earthquakes. Among these, eight buildings sustained deep cracks, rendering them irreparable. The remaining 34 buildings experienced partial cracking, with potential for rehabilitation. Table 55 provides a comprehensive list detailing the reported damaged or affected substation buildings, along with the associated cost estimations for their respective rehabilitation or reconstruction efforts.

Table 55: Summary of Damage/Affected Substation Buildings and Estimated Cost of Damage

No.	Building Location	Type/Function of Building	Building Details: number of floors, number of rooms and total area in m2	Type of Damage	Building Construction Type		Cost of Damage (US$)
					Concrete	Locally made	
1	Herat Da Afghanistan Breshna Sherkat	Directorate Authority	Floors:3 Rooms:7 Area:200 m2	(Major Damage) Deeply cracked and cannot be used	X		28,169
2	Herat Da Afghanistan Breshna Sherkat	Operation Deputy	Floors:3 Rooms:17 Area:500 m2	(Major Damage) Deeply cracked and cannot be used	X		28,169
3	Herat Da Afghanistan Breshna Sherkat	Department of Commercial	Floors:1 Rooms:3 Area:200 m2	(Partial Damage) Cracked	X		19,718
4	Herat Da Afghanistan Breshna Sherkat	Department of Finance	Floors:3 Rooms:8 Area:200 m2	(Partial Damage) Cracked	X		28,169
5	Herat Da Afghanistan Breshna Sherkat	Administration Department	Floors:2 Rooms:7 Area:120 m2	(Major Damage) Deeply cracked and cannot be used	X		28,169
6	Herat Da Afghanistan Breshna Sherkat	Department of Security and Transport	Floors:2 Rooms:4 Area:120 m2	(Major Damage) Deeply cracked and cannot be used	X		19,718
7	Herat Da Afghanistan Breshna Sherkat	Department of Procurement	Floors:2 Rooms:5 Area:200 m2	(Major Damage) Deeply cracked and cannot be used	X		19,718
8	Herat Da Afghanistan Breshna Sherkat	Billing Department	Floors:3 Rooms:6 Area:200 m2	(Partial Damage) Cracked	X		14,084

9	Herat Da Afghanistan Breshna Sherkat	Finance Department	Floors:2 Rooms:6 Area:150 m2	(Partial Damage) Cracked	X		14,084
10	Herat Da Afghanistan Breshna Sherkat	Department of Budget	Floors:2 Rooms:6 Area:150 m2	(Partial Damage) Cracked	X		14,084
11	Herat Da Afghanistan Breshna Sherkat	Department of Goods Finance	Floors:3 Rooms:5 Area:200 m2	(Partial Damage) Cracked	X		14,084
12	Gulistaan Road Bagh Islami	Junction 1	Floors:1 Rooms:3 Area:100 m2	(Partial Damage) Cracked	X		11,267
13	Chawk Gulhaa	Junction 2	Floors:1 Rooms:3 Area:100 m2	(Partial Damage) Cracked	X		11,267
14	Shahrak Sanaaty	Junction 5	Floors:1 Rooms:2 Area:62 m2	(Partial Damage) Cracked	X		11,267
15	Injil District	Junction 6	Floors:3 Rooms:9 Area:200 m2	(Partial Damage) Cracked	X		11,267
16	West of Injil	Junction 7	Floors:2 Rooms:4 Area:220 m2	Major Damage) Deeply cracked and fallen	X		11,267
17	Guzara District	Junction 8	Floors:1 Rooms:4 Area:400 m2	(Partial Damage) Cracked		X	11,267
18	Rubat Sangi District	Junction 9	Floors:1 Rooms:4 Area:120 m2	(Partial Damage) Cracked	X		11,267
19	Ghoryan, Shekibaan, and Zindajan	Junction 10	Floors:2 Rooms:6 Area:120 m2	(Partial Damage) Cracked	X		11,267

20	Kohsan District	Junction 11	Floors:1 Rooms:3 Area:200 m2	(Partial Damage) Cracked		V	11,267
21	Shindand District	Junction 12	Floors:2 Rooms:8 Area:200 m2	(Partial Damage) Cracked	X		11,267
22	Chesht Sharif District	Junction 13	Floors:3 Rooms:5 Area:200 m2	(Partial Damage) Cracked	X		11,267
23	Lese Nezaami	Local Power Distribution House	Floors:1 Rooms:2 Area:66 m2	(Partial Damage) Cracked	X		11,267
24	Baaghche Meetar	Local Power Distribution House	Floors:2 Rooms:2 Area:62 m2	Major Damage) Deeply cracked and fallen	X		14,084
25	Park Hotel	Local Power Distribution House	Floors:1 Rooms:2 Area:56 m2	Major Damage) Deeply cracked and fallen		X	28,169
26	Lozh Nezaami	Local Power Distribution House	Floors:1 Rooms:3 Area:100 m2	(Partial Damage) Cracked	X		14,084
27	Darwaza Qandahar	Local Power Distribution House	Floors:1 Rooms:2 Area:46.75 m2	Partial Damage) Cracked		X	28,169
28	Jebraayel	Local Power Distribution House	Floors:1 Rooms:2 Area:120 m2	(Partial Damage) Cracked	X		14,084
29	Chawk Gulhaa	Local Power Distribution House	Floors:1 Rooms:2 Area:100 m2	(Partial Damage) Cracked		X	14,084
30	Jadeed Noor	Local Power Distribution House	Floors:1 Rooms:3 Area:56 m2	(Partial Damage) Cracked	X		14,084

31	Doraahi Jeghartaan	Local Power Distribution House	Floors:1 Rooms:1 Area:30 m2	(Partial Damage) Cracked		X	14,084
32	Ghoryan District	Ghoryan Substation 132/20KV	Floors:1 Rooms:3 Area:400 m2	(Partial Damage) Cracked	X		28,169
33	Rubaat Sangi District	Rubaat Sangi Substation 220/110/20KV	Floors:1 Rooms:3 Area:400 m2	(Partial Damage) Cracked	X		28,169
34	Badghis Province, Qala e Naw	Qala e Naw Substation (Badghis Province) 110/20KV	Floors:1 Rooms:3 Area:400 m2	(Major Damage) Deeply cracked and fallen	X		22,535
35	Jaade Mukhaaberat	Department of Operation and Maintenance of the networks 20KV	Floors:2 Rooms:3 Area:42 m2	(Partial Damage) Cracked	X		14,084
							597,183.09

Source: DABS

Damage to Transmission Poles

Table 56 shows the number of transmission poles that was reported to be totally damaged with a total estimated cost of replacement at US$316,800.

Table 56: Summary of Damaged/Affected Transmission Lines and Poles and Estimated Cost of Replacement

No.	Number of damaged poles in distribution network	No. of Junctions Affected	Location	Type of Damage	Cost per Pole (US$)	Total Cost (US$)
1	15	9	Gulran	Major damage	3,500.00	52,500.00
2	12	9	Rubaat Sangi	Major damage	3,500.00	42,000.00
3	6	2	Herat	Major damage	3,000.00	18,000.00
4	8	4	Herat	Major damage	2,700.00	21,600.00
5	13	8	Guzara	Major damage	2,000.00	26,000.00
6	9	7	West of Injil	Major damage	3,000.00	27,000.00
7	10	3	Herat	Major damage	2,700.00	27,000.00
8	11	1	Herat	Major damage	2,700.00	29,700.00
9	6	9	Kushk	Major damage	3,000.00	18,000.00
10	5	11	Islam Qala	Major damage	3,000.00	15,000.00
11	20	10	Zindajan	Major damage	2,000.00	40,000.00
Total		**115**				**316,800.00**

Source: DABS

Damage to Distribution Transformers

During the occurrence of the earthquakes, a series of short circuit incidents took place, resulting in a significant fault in the transmission line. This fault had a detrimental impact on the cables as well as the coils of the transformers. Unfortunately, the existing protection systems proved inadequate in safeguarding the system, primarily due to the exceptionally high short circuit current that ensued. Consequently, the coils of the transformers suffered extensive burning. Table 57 shows a comprehensive list detailing the distribution transformers that incurred damage, along with a cost estimation for their replacement.

Table 57: Summary of Damaged/Affected Distribution Transformers and Estimated Cost of Replacement

No.	Village Name/City Center	Type of Transformer	Capacity in KVA	Type of Damage	Total Estimated Cost (US$)
1	Rahmat Baye/ Rubat Sangi	Pole-Mounted	100	(Partial Damage) One Coil Damaged 20kv	7,000.00
2	Nahr Sayad Salafi/ Rubat Sangi	Pole-Mounted	160	(Partial Damage) One Coil Damaged 20kv	7,500.00
3	Sangar Ulia Sufli/ Rubat Sangi	Pole-Mounted	100	(Partial Damage) Two Coils Damaged	7,000.00
4	Nayem Khan Village/ Rubat Sangi	Pole-Mounted	100	(Major Damage) Cannot be repaired	7,000.00
5	Aab Guzast/ Kushk e Kuhna	Pole-Mounted	100	Partial Damage) Two Coils Damaged	7,000.00
6	Tayq Yardar/ Kushk e Kuhna	Pole-Mounted	100	(Partial Damage) One Coil Damaged 20kv	7,000.00
7	Koch e Daanish/ City center	Pole-Mounted	400	(Partial Damage) Two Coils Damaged	18,000.00
8	Jaade Arbab Rahim/ City center	Pole-Mounted	400	(Major Damage) Cannot be repaired	18,000.00
9	Qaader Abad/ Injil	Pole-Mounted	100	(Partial Damage) Two Coils Damaged	7,000.00
10	Aab Jalil/ Injil	Pole-Mounted	200	(Major Damage) Cannot be repaired	9,000.00
11	Dogh Abad/ Injil	Pole-Mounted	630	(Major Damage) Three Coils Damaged	20,000.00
12	Mahal Esaar/ City center	Pole-Mounted	400	(Major Damage) Cannot be repaired	18,000.00
13	Jaade Haqiqat/ City center	Pole-Mounted	400	(Major Damage) Cannot be repaired	18,000.00
14	Naw Abad/ City center	Pole-Mounted	400	(Major Damage) Cannot be repaired	18,000.00
					168,500.00

Source: DABS

Total Estimates of Damage and Loss

The total estimated cost of damage pertaining to the transmission poles (table 58), distribution transformers (table 59), and substation buildings (table 60) is US$1,082,483. The loss in revenues is around US$689,530 for two months only, October and November, and the same amount in loss is expected in the coming months until the damaged infrastructure is fixed and the energy connection is restored. It is also clear that the effect of the earthquakes in the energy sector is broad and include districts other than the identified nine districts. The main reason for that is the interconnected electrical system in one distribution or transmission circuit where a small fault in one of the components can affect other components in other districts since they are electrically connected. To provide a concise overview, a summary outlining the individual costs for each item is presented in table 61.

Table 58: Estimated Cost of Damage and Loss of Transmission Poles by District

S.N	Districts	Damage Cost (US$)	Loss (US$)
1	Gulran	52,500.00	-
2	Herat	96,300.00	-
3	Guzara	26,000.00	-
4	Injil	27,000.00	-
5	Kushk	18,000.00	-
6	Kohsan	15,000.00	-
7	Zindajan	40,000.00	-
8	Rubat Sangi	42,000.00	
Total		**316,800.00**	**-**

Table 59: Estimated Cost of Damage and Loss of Distribution Transformers by District

S.N	District	Damage Cost (US$)	Loss (US$)
1	Rubat Sangi District	28,500.00	80,556.5
2	Kushk District	14,000.00	27,756.5
3	Herat City Center	90,000.00	370,434.7
4	Injil District	36,000.00	210,782.6
Total		**168,500.00**	**689,530.30**

Table 60: Estimated Cost of Damage and Loss of Substation Buildings by District

S.N	Districts	Damage Cost (US$)	Loss (US$)
1	Herat	388,734.00	-
2	Guzara	22,536.00	-
3	Injil	50,605.00	-
4	Rubaat Sangi	39,437.00	-
5	Kohsan	11,268.00	-
6	Ghoryan District, Shekibaan District, and Zindajan District	39,437.00	-
7	Shindand	11,268.00	-
8	Chesht Sharif	11,268.00	-
9	Badghis Province, Qala E Naw	22,535.00	-
Total		**597,183**	**-**

Table 61: Estimated Total Cost of Energy Recovery Needs by District

S.N	Districts	Damage Cost (US$)	Loss (US$)
1	Gulran	52,500.00	-
2	Rubat Sangi	109,936.00	80,556.5
3	Herat	575,034.00	370,434.7
4	Injil	113,604.00	210,782.6
5	Kushk	32,000.00	27,756.5
6	Kohsan	26,268.00	-
7	Zindajan	40,000.00	-
8	Shindand	11,268.00	-
9	Chesht Sharif	11,268.00	-
10	Ghoryan, Shekibaan and Zindajan	39,437.00	-
11	Badghis Province, Qala e Naw	22,535.00	-
12	Guzara	48,535.00	-
Grand Total		**1,082,483**	**689,530.30**

Table 62: Summary of Estimated Cost of Damage and Loss

Item	Damage Cost (US$)	Loss (US$)	Total (US$)
Transmission lines	316,800.00	-	316,800.00
Distribution transformers	168,500.00	-	168,500.00
Substation buildings	597,183.00	-	597,183.00
Revenue Loss	-	689,530.30	689,530.30
Total Amount	**1,082,483.00**	**689,530.30**	**1,772,013.30**

4. Linking the Effects to the Human Impact

Cross-sectoral Impact

Education

The structure of rural schools in the earthquake-affected area is very simple, in which the building has a few classrooms without any connection to the national grid or even to the internal electrical connection in the building itself. In some areas where the schools are connected to the national grid, the power shortages will affect the performance in some schools that have double shifts from operating optimally during the second shift. Also, in the winter, the schools that have equipment and loads[90] will suffer from power shortage, especially for heating and water pumping.

Health

Access to electricity is crucial for health facilities to provide their services to the communities. Considering the shortage in power generation in the country and the lack of stable grid supply, most of the large health care facilities are supported by UN agencies to ensure adequate access to energy. Most of the facilities are receiving support off-grid and on-grid, and in some cases hybrid systems to run the necessary lighting, heating, water pumping, and operating of medical equipment. According to the information provided by DABS, none of the main health facilities were connected to the grid in the area affected by the earthquakes.

Housing

After the occurrence of the earthquakes, a significant number of households have been grappling with prolonged blackouts. The estimated count of affected households experiencing power outages stands at 3,304, impacting a total population of 23,128 individuals. The disruption in electricity supply can be primarily attributed to the damage incurred by transmission lines and distribution transformers, resulting in a loss exceeding US$11,492 per day due to the disconnection from the grid. This dire situation has had a profound impact on the daily lives and

activities of the affected households. The lack of access to reliable electricity not only hampers essential services, but also impedes economic productivity and the overall quality of life. It is necessary to restore access to energy for households by repairing the damaged infrastructure, and to help alleviate the financial burden caused by the prolonged disconnection from the grid.

5. Recovery Needs and Strategy

Table 63: Summary of Estimated Cost of Recovery Needs

Item	Short-Term Cost (US$)	Medium-Term Cost (US$)	Long-Term Cost (US$)	Total Cost of Recovery (US$)
Transmission lines	364,320.00	-	-	364,320.00
Distribution transformers	193,775.00	-	-	193,775.00
Substation buildings	686,760.45	-	-	686,760.45
Capacity building for disaster resilience	-	200,000	-	200,000
Solarization for 3,304 households	-	2,643,200	-	2,643,200
Rapid assessment for energy infrastructure	120,000	-	-	120,000
Street lighting	1,000,000	-	-	1,000,000
Study for development of recovery plan for infrastructure rehabilitation priorities in the generation, transmission, and distribution subsector	150,000	-	-	150,000
Study for building of transmission, synchronization, load balancing, upgrading of protection system of the national grid	-	-	2,500,000	2,500,000
Conduct capacity building trainings for DABS staff on maintenance of distribution and transmission equipment	250,000	-	-	250,000
Total Amount	**2,764,855.45**	**2,843,200**	**2,500,000**	**8,108,055.45**

Recovery actions and strategy for the energy sector are based on these principles:

- Reducing vulnerability of the most fragile groups, IDPs, and women and girls, by restoring household power supply and other critical services.
- Additional and detailed assessment of seismic vulnerability of power system in the province.

- Ensuring that generation of renewable energy is maximized with access to solar power by households.
- Strengthening the damaged network against future seismic activity.
- Strengthening the seismic capacity of the infrastructure, including dams and pressure vessels, to safeguard against the release of polluting energy generation components into the environment in case of future disasters.
- Building capacity of all stakeholders to carry out the rehabilitation and recovery efforts.

Recommendations

Table 64: Energy Recovery Priorities and Recommendations

Energy Recovery Priorities and Recommendations	
Short Term	**Medium – Long Term**
• Provide solar household and Pico solutions for the affected households. • Conduct more detailed rapid assessment of energy infrastructure. • Assess the strength/vulnerability of energy infrastructure to seismic activity. • Repair damages to existing utilities. • Restore household services to pre-earthquake levels. • Support to assessing and strengthening earthquake resistance of the energy grid and its components. • Provision of renewable energy for street lighting in damaged urban and rural areas as well as IDP camps. • Trainings for DABS staff on the maintenance of the distribution and transmission equipment.	• Adopt a systematic and an executable recovery plan for infrastructure rehabilitation priorities in the generation, transmission, and distribution subsector. • Increase the penetration of wind energy plants in the energy mix in Herat Province. • Build a new protection system and grid integration system to synchronize multiple frequency power sources that are coming from different countries. • Build efficient and resilient energy distribution and transmission networks for new settlements. • Development of sustainable electrical design codes and practices, including earthquake resilience for civil structure supporting the energy infrastructure. • Provision of renewable energy in smaller health clinics, including in rural areas, to maintain the cold chain for medications. • Support innovative solutions for the rehabilitation of the energy infrastructure.

6. Methodology and Limitations

Data sources and assumptions

The assessment relied on data by DABS from the Herat branch and headquarter, including data on damages to transmission towers, substation buildings, distribution transformers, and initial estimation costs for the components.

Key assumptions

These assumptions were used in the calculation of estimates:

- For the recovery needs, the cost of damaged assets and infrastructure, including transmission poles, distribution transformers, and substation buildings, was increased by 15 percent for building resilience measures.
- The cost for solarization the affected households was assumed to be US$800 per unit. The cost includes a small household solution of minimum 500 watt of panels, one battery, and small power inverter with charging sockets and LED bulbs.
- The assumed cost for solar street lighting is US$1,000 per one lighting pole. The cost includes the construction of the pole, lighting fixture, panel, and lithium batteries.
- Loss of revenue was added only to the distribution transformers since the end-users are directly connected to the feeders that are connected to the transformers. The revenue loss was not reflected in the transmission poles and substation building to avoid cost duplication.
- The loss of revenue was calculated based on the number of houses who lost electricity connections. The average consumed electricity per household is 1 kWH per hour. The consumption period is 24 hours/day, and the consumption tariff is average of AFN10. The number of service outage considered in the calculation is 60 days (Mid-October and November).
- Losses were obtained based on an assessment of the number of connections that lost electricity connections and the revenue loss in selling electricity to end-users reaching 3,304.
- Losses were calculated based on the following assumptions:
    - The average consumed electricity per household is 1 kWH per household per hour.
    - The total number of households of lost connection/end-user meters is 3,304.
    - The lost connections and household meters are not yet fixed.

Transport and Telecommunications

1. Summary

Damage and Indirect Losses (US$36.2 million)

Damage to the transport and telecommunications sector impacted by the 2023 earthquakes included roads, limited bridge infrastructure, and telecommunications infrastructure. Initial estimates suggest that approximately 625.4 km of roads (about 5 percent of total in-service roads) have been damaged. The railway and aviation sector have not reported any damage. Out of all the districts, Zindajan, Kushk, and Injil have sustained the highest damages(29.6 percent, 26 percent, and 14.7 percent of total damages, respectively). The transport sector suffered an estimated damage of US$32.4 million and indirect losses of US$2.9 million. The telecommunications sector reported connectivity outage experienced by the subscribers of all mobile operators in Herat. The network outage duration ranged from 15 minutes to 24 hours in some cases with an estimated damage of US$0.5 million and indirect losses of US$0.4 million.

Recovery and Reconstruction Needs (US$50.3 million)

The transport reconstruction needs are estimated at US$49.4 million (factoring for post-earthquake cost escalation and the build-back-better element). For the next 12 months, primary focus should be on restoring critical regional and national transport links where operations have been suspended. In the medium and long term, the priority should be on rebuilding and rehabilitating the road sector, including enhancing infrastructure resilience to climate change. This implies the use of hazard data, improved asset management, proper road maintenance, and prioritization of disaster management investments. In addition, US$0.9 million is needed for recovery and reconstruction of the telecommunications sector.

Table 65: Total Damage, Loss, and Need by District - Transport and Telecommunications

Province/District	Total Damage (US$)	Total Loss (US$)	Total Need (US$)
Ghoryan	591,772	52,684	901,634
Gulran	4,226,487	376,271	6,444,700
Guzara	3,185,105	283,560	4,856,086
Herat	960,459	434,450	1,604,361
Injil	4,634,007	412,552	7,063,205
Karukh	1,220,146	108,626	1,862,578
Kohsan	184,596	16,434	282,662
Kushk	8,719,929	776,308	13,294,579
Zindajan	9,155.265	815,065	13,958,806
Grand Total	**32,877,766**	**3,275,950**	**50,268,611**

2. Pre-Earthquakes Context and Baseline

Afghanistan's transport sector has faced a number of developmental challenges. First, the fragmentation of functions across different agencies weakens accountability and leads to inefficiencies through gaps and/or duplications, which is exacerbated by the absence of a regulatory framework. Second, outdated technical systems and road safety policies related to road planning, road safety, emergency planning, and technical audit hinder efficient operations and maintenance of roads. Third, interagency cooperation and communications is weak or non-existent; capacity building, knowledge sharing, and specialized trainings need to be enhanced. Fourth, road construction and maintenance were reliant on foreign funds, which have been seriously constrained after the Taliban takeover in 2021.[91] Fifth, primary users of transportation and telecommunications services tend to be men as women face restrictions in their freedom of movement.

Road Network

As a landlocked and largely mountainous country of 652,000 square kilometers (sq km) and without many viable alternative transport modes, Afghanistan's main transport infrastructure is roads 's . The road network has historically faced significant challenges due to rugged terrain, ongoing conflicts, and limited resources. The backbone of the road network comprises around 6,800 km of national highways (mostly asphalted), 1,400 km of provincial roads (mainly made of asphalt and gravel), and 11,100 km of district roads (largely gravel). Despite significant infrastructure interventions over the years, many main roads unfinished, causing inefficiencies within the network and leading to increased travel times and delays. Approximately 25 percent of national highways, provincial roads, and district roads are under construction or in the planning phase.[92]

Afghanistan's road network has historically had a large need for new infrastructure, rehabilitation, and maintenance. The DFA's ability to prioritize and effectively plan road development and maintenance programs has been hindered by political and tribal pressures from different groups and by lack of funding. Lack of funding can be traced back to the absence of toll mechanisms on roads, lack of privatization, and significant dependency on external donors.

Table 66: Estimated Existing and Planned Length of Primary Road Network in Afghanistan

Type of Road	Existing Length (km)	Ongoing/pipeline/planned (km)	Total (km)
National Highways	6,854	3,039	9,893
Provincial Roads	1,394	370	1,764
District Roads	11,079	3,171	14,250
Total	**19,327**	**6,580**	**25,907**

Source: Ministry of Public Works. National Rural Access Program Survey 2018

In addition, the road network is estimated to contain approximately 3,750 km of urban roads and 101,000 km of rural roads (mostly earth and gravel).[93] At present, most of the regional and national roads have been paved (albeit they are deteriorating) and 85 percent of the road network is currently believed to be in poor condition and unsuitable for motor vehicles.[94]

The de facto Ministry of Public Works is responsible for the development, operations, and maintenance of all primary and secondary roads.[95] The network provides national and international connectivity through the national highways, and subnational level connectivity through the provincial and district roads.[96] The de facto Ministry of Rural Rehabilitation and Development is responsible for the development, operations, and maintenance of tertiary rural access. Road inventory that track the location, condition, and standards of roads is limited; this hinders the effectiveness of efforts to plan reconstruction and maintenance investments.[97] In most cases, the quality of the road network is low due to inadequate technical and financial resources. In the last decade, substantial investments from bilateral and multilateral donors have been made to enhance road design, as well as the planning and management capacity of the DFA, including the use of Geographic Information Systems (GIS). However, after the Taliban takeover in 2021, the fate and the status of roads conditions and their management are uncertain.

Railways and Airports

Afghanistan's railway system is still in the development stages and has a low utilization capacity. Three main rail lines in the north connect Afghanistan with Uzbekistan and Turkmenistan: (i) Hairatan to Mazar-e Sharif line (75 km), (ii) Torghundi – Turkmenistan Rail (13 km) and Aqina – Turkmenistan Rail (4.5 km).[98] These three lines are solely used for freight transportation. In 2023, a new rail line linking Afghanistan to Iran was completed for both freight and passenger transportation (Khaf – Herat, 225 km with 140 km running through Afghanistan).[99] This line is still undergoing trial operations and is mostly managed by Iran for freight transportation.[100]

Afghanistan has five major airports and 39 airfields, where four are international airports and 16 airports that cater domestic flights. Similar to the road network, the status of their condition and management remains uncertain.[101]

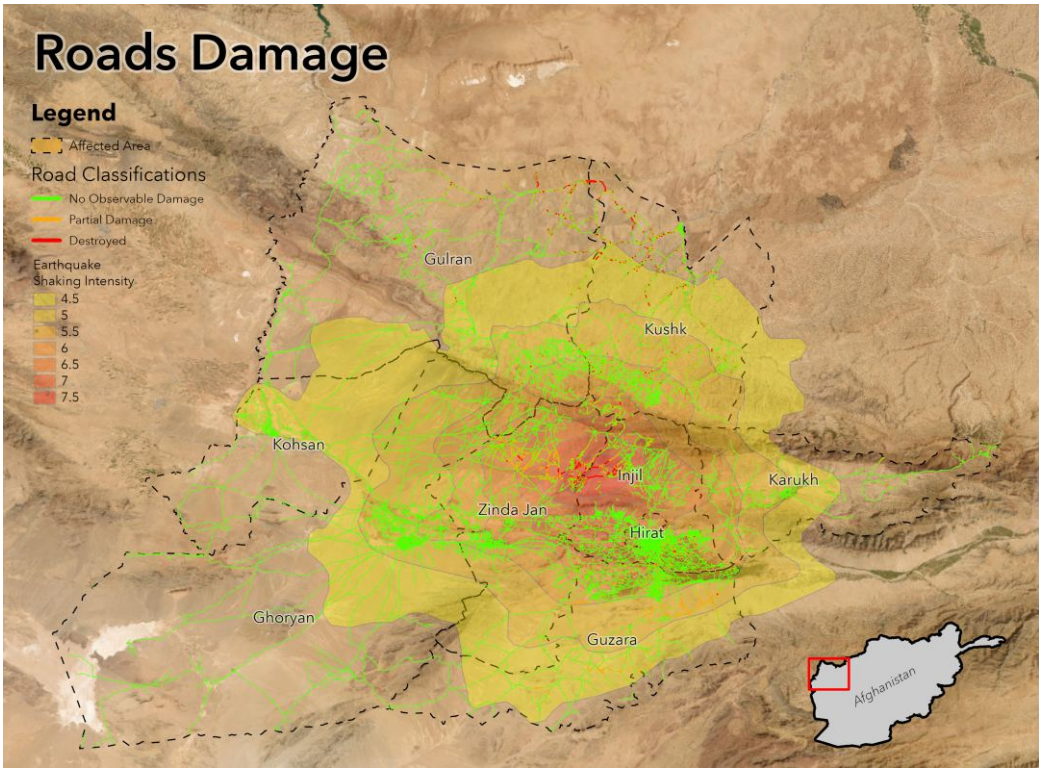
Inventory of Infrastructure Assets (general aggregate figures)

The road network covered under the transport chapter includes primary, secondary, and tertiary roads within the nine earthquake-affected districts in Herat Province: Ghoryan, Gulran, Guzara, Herat, Injil, Karukh, Kohsan, Kushk, and Zindajan. It encompasses 97 km of primary roads, 439 km of secondary roads, and 4,027 km of tertiary roads. In addition, 9,187 km of rural roads in these nine districts were assessed. This resulted in an assessed baseline of 13,749 km of road. The rail network and airports are not covered by this assessment.

3. Assessment of Disaster Effects: Damage and Loss Estimates

Data from different sources were obtained, both primary and secondary, to estimate damages. The data reported are divided into two broad categories: Completely Damaged (structural damage or total collapse; damage exceeding 60 percent of the asset value) and Partially Damaged (damage but structure intact; 60 percent or less). Road network data are segregated into lengths of road segments. Map 6 shows the damage assessment using satellite imagery. The significant damage to the transport sector can be attributed to pre-earthquake challenges such as lack of maintenance of roads and bridges or lack of repair of conflict-damaged roads.

Map 6: Estimated Road Damage in the Nine Affected Districts in Herat Province



Source: IPSOS

Damages

A summary of damage to transport and communications can be seen Tables 66 and 67. The total cost of the damage to the transportation is estimated at US$32.40 million. This comprises damage to primary, secondary, tertiary and rural roads; 52 percent of costs are due to completely destroyed roads and 48 percent to partially destroyed roads. The total damage across primary, secondary, tertiary, and rural roads in the nine districts extends over 625.5 km, representing 5 percent of the assessed road network (13,749 km). The extent of the damage is split across different road types as follows: (i) primary roads: 0.6 km; (ii) secondary roads: 1.7 km; (iii) tertiary roads: 206.5 km; and (iv) rural roads 407.1 km. Across the nine districts assessed, Zindajan, Kushk and Injil have suffered the most damage (70 percent of the total). The damage to bridges across the nine districts was not major and extended over 0.2 km, all deemed partially destroyed. In addition to the transport sector, the estimated damage in the telecommunications sector is approximately US$0.48 million and primarily includes damage to the exchanges buildings in Herat.

Table 67: Estimated Total Cost of Damage and Loss to Transport by Asset and Extent of Damage

DAMAGES AND LOSS INVENTORY					
	Asset types	**Baseline**	**No Damaged Observed**	**Partially Destroyed**	**Completely Destroyed**
DAMAGE	Primary roads, km	97.0	96.4	0.6	0.0
	Secondary roads, km	438.6	427.3	9.5	1.7
	Tertiary roads, km	4,026.3	3,819.8	138.3	68.2
	Other roads, km	9,186.0	8,778.9	263.9	143.2
	Total Network, km	**13.749**	**13.125**	**412.4**	**213.1**
	Bridges, km	7.6	7.4	0.2	0.0
	Ports	n/a	n/a	0	0
	Major airports	1	1	0	0
	Railway station	1	1	0	0
	Cost of Damage (US$) - Roads			14,796,765	16,102,629
	Cost of Damage (US$) - Bridges			1,503,145	0
	Total Damage (US$)				32,402,539
LOSS	**Total Loss (US$)**				**2,884,799**
TOTAL EFFECT	**Total (US$)**				**35,287,338**

n/a: not applicable

Indirect Losses

Indirect losses sustained in the transport and telecommunications sector are presented in Tables 67. The total losses to the transport sector in the nine affected districts are estimated at US$2.9 million. These losses represent the sum of revenue losses from fuel taxes[102] and higher cost of vehicle operations driven by lower traffic speeds and increased travel times caused by

detours to bypass road damage and accumulated debris. Depending on the timing, availability of funds, and recovery and reconstruction strategies, estimated losses could be higher than initial assessments.[103] The indirect losses estimated in the telecommunications sector are approximately US$0.39 million. The indirect losses are the result of the connectivity outage experienced by the subscribers of all mobile operators in Herat. The network outage duration ranged from 15 minutes to 24 hours in some cases.

Table 68: Estimated Total Cost of Damage and Loss to Transport and Telecommunications by District

District/Subsector	Direct Damage	Indirect Losses	Total
	US$		
Roads			
Ghoryan	479,337	42,674	522,011
Gulran	4,226,487	376,271	4,602,758
Guzara	2,728,446	242,905	2,971,351
Herat	347,333	30,922	378,255
Injil	4,546,597	404,770	4,951,367
Karukh	1,191,210	106,050	1,297,260
Kohsan	184,596	16,434	201,030
Kushk	8,040,123	715,787	8,755,910
Zindajan	9,155,265	815,065	9,970,330
Subtotal	**30,899,394**	**2,750,878**	**33,650,272**
Bridges			
Ghoryan	112,435	10,010	122,445
Guzara	456,659	40,655	497,314
Herat	137,899	12,277	150,176
Injil	87,410	7,782	95,191
Karukh	28,936	2,576	31,513
Kushk	679,806	60,521	740,327
Subtotal	**1,503,145**	**133,821**	**1,636,966**
Telecommunications	475,227	391,251	866,479
Total (US$)	**32,877,766**	**3,275,950**	**36,153,716**

Note: Exchange rate AFN69.28 =US$1

Cross-Cutting Issues

Disruptions in telecommunications severely impact operations, both at macro and micro levels. Efficient telecommunications acts as the backbone for the economy and enables the market to remain competitive. While restoring the network is crucial, network reconstruction and rehabilitation actions should be taken as an opportunity to include climate resilient features and to prioritize reconstruction efforts strategically. While the earthquakes have had environmental and social repercussions, the reconstruction phase will have its own impacts. Debris removal will be costly and time-consuming due to the need for proper disposal sites, collection, and transport expenses to those sites and the need for heavy vehicles and equipment for debris removal operations. To minimize negative environmental impacts in reconstruction, landfill sites should be earmarked, and debris collection made part of the reconstruction contracts.

4. Linking the Effects to the Human Impact

The earthquakes have led to poor accessibility due to road damage, resulting in negative consequences both economically and socially. Roads serve as crucial lifelines for people in the earthquake-affected area as they are the main means of transportation of goods, access to health and public services, and commuting to work and school. Any damage to roads significantly stalls economic operations and leads to a decrease in quality of life for residents. Transportation costs are expected to rise due to detours and longer journeys, and in turn drive up prices of goods and services including fuel, farm products, and most commodities. Furthermore, damaged roads pose safety hazards by complicating traffic management and emergency interventions. Reconstruction efforts of the damaged transport networks will take time. Until restoration of roads is completed, affected communities, particularly vulnerable groups such as women, children and the extremely poor, who already suffered in pre-earthquake conditions from restricted mobility for cultural and financial reasons, will continue to grapple with loss or limited access to market, public services, and employment opportunities. Overall impact on telecommunications is relatively small and recovery focus is more appropriate in the short term and should include technological improvements that make the sector more seismic resilient.

5. Recovery Needs and Strategy

Estimation of Recovery and Reconstruction Needs

The estimates for rehabilitation and reconstruction are based on the current costs for each item of transport infrastructure and factor in elements of social safeguards, project management, and capacity building, likely post-earthquake cost escalation, and the build-back-better factor (table 69).

Table 69: Summary of Reconstruction and Recovery Needs for Transport and Telecommunications by District

Provinces /Region	Reconstruction and Recovery Costs				
	Damage and Losses	Social safeguards (10%)	Project Management (10%)	Climate-Resilience (20%)	Total
	US$				
Transport					
Ghoryan	644,456	64,446	64,446	128,891	902,238
Gulran	4,602,758	460,276	460,276	920,552	6,443,861
Guzara	3,468,665	346,867	346,867	693,733	4,856,131
Herat	528,431	52,843	52,843	105,686	739,803
Injil	5,046,558	504,656	504,656	1,009,312	7,065,181
Karukh	1,328,773	132,877	132,877	265,755	1,860,282
Kohsan	201,030	201,030	201,030	40,206	281,442
Kushk	9,496,237	949,624	949,624	1,899,247	13,294,732
Zindajan	9,970,330	997,033	997,033	1,994,066	13,958,462
Subtotal	**35,287,238**	**3,528,724**	**3,528,724**	**7,057,448**	**49,402,133**
Telecommunications					
Herat	866,479	0	0	0	866,479
Subtotal	**866,479**	**0**	**0**	**0**	**866,479**
Total (US$)	**36,153,717**	**3,528,724**	**3,528,724**	**7,057,448**	**50,268,612**

Note: Exchange rate AFN69.28 =US$1

Sector Recovery Strategy

The transport sector plays a crucial role in driving economic growth and activity. Prompt sector recovery can mitigate the earthquakes' negative impacts. Proper sector recovery not only depends on reconstructing and rehabilitation works, but it also requires restructuring governance, improving policy decisions, updating engineering design practices, and embedding disaster and climate resilience into the new road infrastructure. Furthermore, private sector mobilization is key to supplement funding from public, multilateral, and bilateral resources. Where possible, private sector participation should actively be pursued at different stages of the recovery and reconstruction process of infrastructure. Such a process is categorized in three phases: (i) short term (up to 12 months); (ii) medium term (up to three years); and (iii) long term (beyond three years). Due to funding gaps, total recovery demand will have to be met through a multi-stage implementation plan. Priority should be placed on roads that are completely damaged but are critical for recovery, particularly primary roads. Considering availability of labor and the extent of road damage, certain repair and restoration work may employ labor-intensive methods to offer temporary employment to affected communities and improve their livelihoods.

Short term (up to one year)

Short-term recovery should include activities to restore connectivity and accessibility. For telecommunications, this should focus on repairing damaged equipment and infrastructure. For road infrastructure, it means temporarily restoring damaged sections to resume traffic operations as soon as possible. This includes temporary repairs to sustain traffic until the actual reconstruction works commence. Given the extent of damage and the limited resources, it is crucial to identify key locations that are essential to restore operations within the initial 12 months. This includes completely damaged roads that have resulted in suspension of operations across key corridors, impacting national and regional connectivity. At the district level, priority should be placed on prioritizing roads that would improve access to public facilities, markets, and connectivity to facilitate relief operations. For telecommunications, considering the minimal damages, reconstruction needs are low. Short-term interventions should include emergency telecommunications systems in areas experiencing internet and mobile outages.

Medium term (up to three years) and long term (beyond three years)

To ensure building back better, it is crucial that all relevant agencies adopt climate change and disaster resilient design standards. This involves utilizing hazard data, ensuring regular and proper maintenance of assets, prioritizing disaster management investments, and using technology to make infrastructure resilient. For the road network, conducting detailed condition surveys of the impacted network, followed by detailed cost estimates, and prioritization based on the magnitude of their impact should be prepared. Nevertheless, the following constraints need to be considered while developing short-, medium-, and long-term plans:

- Capacity of local consulting firms to create designs following the BBB strategy, to generate realistic cost estimates, and to oversee the construction works while ensuring quality.
- Capacity of local contractors to meet required standards.
- Availability of construction materials and the market's reaction to an increased demand for these materials as multiple constructions works will commence simultaneously.
- Availability of skilled workforce throughout the projects.
- Availability of a proper asset management and prioritization system.
- Recognition by relevant stakeholders of the increase in costs to include climate resilient measures.

Prioritization Framework

The Prioritized Sector Recovery Framework is presented in Table 69. Fast-track funding is crucial to leverage all available sources, including public funds allocated for regular annual development plans, budget-sharing mechanisms between the different entities of the DFA, emergency loans

from international development partners, public-private partnerships, and potential new levies or surcharges to gather additional funds for reconstruction.

Table 70: Framework of Recovery Activity in Transport by Duration and Priority

Activity	Short term (Up to 12 months) (US$)	Medium term (Up to 3 years) (US$)	Long term (beyond 3 years) (US$)	Priority* (Rank 1-5)
Emergency works (for restoration of services and infrastructure)	4,890,213			1
Rehabilitation and Reconstruction		19,110,853	23,501,067	1
Identification of critical network and introduction and scale up of road asset management system at provincial level		200,000	400,000	2
Adoptability to climate resilience design		200,000	400,000	1
Capacity development, training of local counterparts/road agencies, local contractors, consultancy firms, and engineers	50,000	250,000	400,000	2
Total (US$)	**4,940,213**	**19,760,853**	**24,701,067**	

Note: Exchange rate AFN69.28 =US$1.
(*)1 = highest priority, 5 = lowest priority

To ensure an effective implementation of the recovery plan, key actions should include (but not limited to):

- **Developing** a priority list with recovery and reconstruction needs prior to commencing the work. This should be done in collaboration with key stakeholders.
- **Assessing** the capacity of local labor and materials before releasing work into the market. To maximize local employment opportunities, works can be released in aggregated or phased formats that align with local capacity and prevent artificially drive-up contract prices.
- **Engaging** qualified design and construction supervision teams to conduct detailed engineering design and strict quality control to ensure earthquake resilience of rehabilitated and reconstructed infrastructure. This is particularly crucial for roads and bridges requiring heavy construction and/or rehabilitation.

Additionally, systematically investing in reinforcing infrastructure and mitigation measures is more cost effective than addressing failures reactively as they arise. In addition to engineering solutions, enhancing insurance provisions for disaster response and mobilizing resources ex-ante through disaster risk financing are key areas of focus on the medium to long term. Robust management of design and construction supervision consultancy contracts is essential, as often, they fail in transferring necessary skills from international firms to the local firms. Capacity development and training to local counterparts/road agencies, local contractors, consultancy firms and engineers should be made a requirement in the contracts.

6. Methodology and Limitations

Methodology

The transport sector damage and loss assessment for primary and secondary roads relied primarily on information from former technical officers at the de facto Ministry of Public Works and World Bank Road projects, and the Afghan Rural Access Program. For tertiary and rural roads, it relied on information from Open Street Map (open-source geographic database). Damage assessments and evaluation of damages have been done through remote sensing methods, including the use of high-resolution satellite imagery (30-50 cm) and synthetic aperture radar (SAR) performed by IPSOS. SAR was used for all impacted areas while satellite imagery analysis was used in sampled locations with various degrees of damage to cross-check accuracy of automated SAR analysis. To estimate structural damage to infrastructure, changes in coherence of the SAR signal were obtained from the European Space Agency's Sentinel-1 satellite. Coherence is a measure of the "randomness" of the SAR signal, which allows separation of stable structural features of the landscape. It is calculated by comparing the similarity of the radar signal from two different pre-earthquake snapshots against the similarity of the radar signal from a post-event snapshot to a snapshot right before the start of the earthquake. Landscape features that returned a stable signal before, but not after, the earthquakes, are classified as either damaged or destroyed depending on how much the stability of the signal decreased. Physical validation of results has been performed for a limited number of roads by IPSOS and UNOPS through field visits.

The monetary value of damages has been estimated based on construction and rehabilitation costs per km from the Afghanistan Rural Access Project in 2017 for different surfaces (concrete, asphalt, surface treatment, and gravel). All costs were increased according to the inflation rates until 2023. Construction costs were applied to fully damaged infrastructures (structural damage exceeding 60 percent) and rehabilitation costs for partially damaged roads. A price escalation factor of 20 percent has been included for roads in mountainous areas (elevation higher than 1,800 m). Damage to bridge structures was calculated on a kilometer basis with a rehabilitation cost of US$10,000 per meter (only partial damage was observed). To overcome missing data, monetary value for indirect losses was based on indirect losses to damaged kilometer factor (ratio) of the 2023 PDNA earthquake assessment in Syria. This factor is deemed acceptable for this rapid assessment as the area of both earthquake events is similar (Herat is Afghanistan's most developed region) and road technology did not face drastic changes as the calamities occurred in the same year.

The telecommunications sector damage assessment and service outage data were primarily received from the telecommunications service providers by IPSOS through standard questionnaires to assess the impact to the physical infrastructure, including the mobile towers, exchanges, power back-ups, and fiber optic connectivity. The collected data also included inputs on the duration of service loss and the number of subscribers impacted by the loss of connectivity. The direct and indirect losses were estimated based on the dimensions and input was sought from the field offices of the telecommunications service providers.

Limitations

This damage assessment focuses only on primary, secondary, tertiary, and main rural roads; it excludes damage to border crossings, vehicles, road traffic equipment (lights, signage, etc.) or facility infrastructure (drainage or protection structures). Due to lack of information on the pre-earthquake condition for the whole network and the surface material of many roads, the assessment had to depend on a small sample of roads to infer the surface material and pre-earthquake conditions of the damaged roads. The time constraints for this assessment and the ground situation could not allow for large-scale field validation. SAR and satellite imagery may potentially miss low level or moderate damage to road infrastructure, including cracks in the roads, removed obstacles (including removed debris), and/or damage covered by snow. Furthermore, as we were not able to work with the de facto authorities, we had to rely on old data; field visits were limited and time constrained, and with restricted movement.

The damage assessment focused on the direct loss of service as a result of the earthquakes.

Cross-Cutting Sectors

Photo Credit: UNDP Afghanistan

Employment, Livelihoods, and Social Protection

1. Summary

The earthquakes have had a devastating impact on the employment and livelihoods of the people in the nine affected districts in Herat. This assessment estimates that the disaster resulted in the loss of **22,932** jobs, of which approximately **26 percent** were of women. The loss of workdays and personal income due to the reduced work opportunities is estimated at **6.96 million workdays** and **US$35.6 million,** respectively, for the year following the earthquakes. The agriculture sector was the most affected, accounting for **93.8 percent** of the job losses and **76 percent** of the income loss. The commerce and industry sector also suffered significant damage, especially among small and medium enterprises.

The earthquakes have also increased the vulnerability of the affected communities to multidimensional poverty and disrupted their access to basic services and infrastructure. Based on the report of the health cluster, **114,000** people need humanitarian assistance as of October 19, 2023. The disaster damaged the water supply in the affected districts, affecting the access of around **400,000** people to water supply for household needs. Most of them are women and girls, who face increased risks of diseases, violence, and exploitation. The disaster also damaged **56** public health facilities and one regional hospital in the center of Herat Province, along with **29** private clinics. The damage reduced the availability and quality of health care services for the affected population, especially for women, children, and the elderly. Moreover, the disaster destroyed or damaged **10**,**113** houses and **295** schools in the affected districts, impacting the shelter and education of the people. The damage exposed the affected population to harsh weather conditions, insecurity, and displacement. The disaster also affected the education and productivity of almost **180,000** students and **4,390** teachers, and increased the risk of dropouts, especially for girls and children with disabilities.

Promoting Employment, Decent Work and Social Protection Through the Humanitarian-Development-Peace Nexus is proposed as a comprehensive and integrated approach to bridge the continuum from immediate income generation to medium- and long-term livelihood recovery, contributing to

ensuring social protection. The program combines employment-intensive investments, livelihood programs, employment services, protection of vulnerable groups, and social protection to respond to the relief and recovery needs of the earthquake-affected communities, with a particular focus on the most vulnerable households, including those headed by women and persons with disabilities. The estimated budget for the recovery needs amounts to **US$50.5 million**.

2. Pre-Earthquakes Context and Baseline

After Taliban takeover in August 2021, the country has been grappling with a severe humanitarian crisis due to immensely harsh economic conditions, affecting earthquake-hit districts in Herat as well. Political uncertainty led to weakened domestic demand, heightened food insecurity, and widespread displacement in the country. The economy continues to face multiple shocks: a sudden drop in aid combined with frozen assets abroad, cash shortages, a significantly weakened banking sector, falling trade, and accelerating inflation. Young women and men and persons with disabilities, especially in rural areas, are among the most vulnerable groups.[104]

In the first half of 2022, the labor market saw a very modest recovery of employment, where it was mostly adult men who were able to find employment, and in many instances self-employment. However, in relation to the working-age population, which was decimated considerably by outmigration and restrictions imposed on women's work, employment remained equally stagnant toward the end of 2022. As international aid flows abruptly collapsed following the transition, fiscal expenditures and aggregate demand declined strikingly, consequently undermining private sector activity and household incomes and consumption.[105]

Living conditions remain dire, as two in three Afghan households continue to struggle to meet basic food and non-food needs. The IPC assessment estimates that 17 million people face acute hunger in 2023, including 6 million people at emergency levels of food insecurity, one step away from famine—and one of the highest figures worldwide due to economic instability, drought, and a spike in food prices.[106] As of December 2022, IDPs in Afghanistan amounted to 6.6 million people, two-thirds of them as result of conflict and violence, and one third as a result of disasters.[107] Likewise, 1.3 million Afghans, including professionals and skilled workers, have out-migrated to neighbouring countries since the political transition in August 2021, signaling a massive loss in the economically active population.[108] In addition, girls and young women remain restricted from attending secondary and university education,[109] which will have lifelong consequences, affecting not only decent employment opportunities but also women's health and domestic violence.

According to the estimates of the International Labour Organization (ILO) based on the 2020 Afghanistan Labor Force Survey, the total employment of the country stood at 6,078,500 in the second quarter of 2021, with total female employment of 1,140,700 (table 71).[110]

Table 71: Employment Statistics of Afghanistan by Sector

Sector	Female employment (FE)	Total employment (TE)	% of female in TE	% FE distribution
Agriculture	598,464	2,714,301	22.0	52.5
Manufacturing	283,231	500,122	56.6	24.8
Manufacturing of textiles and clothes (excluding footwear)	275,999	347,657	79.4	24.2
Non-market services (including public administration and social services)	205,067	1,018,875	20.1	18.0
Other sectors	53,963	1,845,211	2.9	4.7
Total	**1,140,725**	**6,078,509**	**18.8**	**100**

Source: ILO estimates based on Afghanistan Labour Force Survey 2020

The Taliban takeover in August 2021 had far-reaching repercussions, inter alia, for the labor market. Key sectors of the economy, including agriculture, public administration, social services, and construction, have been going through excruciating conditions with large-scale job losses and/or massive amounts of unpaid workers. As per the ILO Rapid Assessment on Employment prospects in Afghanistan, employment in the fourth quarter of 2022 was estimated to be 450,000 lower than in the second quarter of 2021, accounting for 7.4 percent of the pre-transition employment level, and more than 900,000 lower compared to a hypothetical scenario without a change in administration. This study further estimated that female employment was 25 percent lower in the fourth quarter of 2022 relative to the second quarter of 2021, which compares to a decline of 7 per cent for men. The Rapid Assessment also indicates that the Employment-to-Population Ratio (EPR) is hovering at 3 percentage points below pre-transition levels.[111] This is impacting Afghanistan's progress toward Agenda 2030. Herat Province has a population of around 2.2 million people, which accounts for 6 percent of the country's total population.

Table 72: Population by Sex in Herat Province

Population by Sex		
Male	**Female**	**Total**
1,121,600	1,040,900	2,162,500

Source: IE&LFS 2021

Male	Female	Total
1,126,150	1,108,510	2,234,660

Source: de facto NSIA 2022–2023

Table 73: Population by Age Group in Herat Province

Population by Age Group (%)					
0-14	15-24	25-39	40-64	65+	Total
44.6	21.4	17.7	12.9	3.3	100

Source: IE&LFS 2021

Population by Age Group (%)					
0-14	15-24	25-39	40-64	65+	Total
44.7	21.1	18	12.9	3.3	100

Source: de facto NSIA 2022-2023

Based on the de facto NSIA 2022-2023 statistics, the working age population of the province is around 1.2 million people. The Income, Expenditure & Labour Force Survey (IE&LFS) 2021 had estimated that the employed population of the province was 475,100 (table 74) with an EPR of 41.4 per cent (table 75).

Table 74: Employed Population by Sex in Herat Province

Employed Population		
Male	Female	Total
352,700	122,400	475,100

Source: IE&LFS 2021

Table 75: Employment-to-Population Ratio in Herat Province

Employment-to-Population Ratio		
Male	Female	Total
65	20.3	41.4

Source: IE&LFS 2021

Drawing on the EPR of the IE&LFS 2021 with the abovementioned working age population, the adjusted employed population of the province would be 511,607, accounting for 8.4 per cent of the country's total employment. By applying the ratio of 8.4 per cent to the total job losses of the country, the employment level of the province after the transition is estimated at 473,732, representing almost 37,875 jobs lower than the pre-transition level in the province. The baseline statistics for the most affected districts are in table 76.

Table76: Population by Sex in the Nine Earthquake-affected Districts

Population by Sex in Nine Affected Districts		
Male	Female	Total
825,873	812,937	1,638,810

Source: de facto NSIA 2022-2023

Table 77: Population by Sex in the Nine Earthquake-affected Districts

District	Population								
	Total			Working Age			Employed		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
Kohsan	32,091	31,589	**63,680**	17,747	17,469	**35,215**	10,017	3,483	**13,500**
Karukh	37,892	37,298	**75,190**	20,954	20,626	**41,580**	11,827	4,112	**15,940**
Ghoryan	53,423	52,587	**106,010**	29,543	29,080	**58,624**	16,675	5,798	**22,473**
Guzara	86,568	85,212	**171,780**	47,872	47,122	**94,994**	27,021	9,395	**36,416**
Gulran	55,515	54,645	**110,160**	30,700	30,219	**60,918**	17,328	6,025	**23,353**
Kushk	74,000	72,840	**146,840**	40,922	40,281	**81,203**	23,098	8,031	**31,129**
Zindajan	33,684	33,156	**66,840**	18,627	18,335	**36,963**	10,514	3,656	**14,170**
Herat	308,466	303,634	**612,100**	170,582	167,910	**338,491**	96,283	33,478	**129,761**
Injil	144,235	141,975	**286,210**	79,762	78,512	**158,274**	45,021	15,654	**60,675**
Total	825,874	812,936	**1,638,810**	456,709	449,554	**906,262**	257,784	89,632	**347,417**

Due to the lack of urbanization in Herat Province where around 75 percent of the population live in rural areas, economic activity is correspondingly heavily reliant on agriculture and livestock. About 27 percent of the provincial output is derived from agriculture, but the sector employs some 44 percent of the working population. Unlike other districts, Herat City is known for its industrialization. It has a long and rich history of trade, culture, and education, dating back to ancient times. The city has 280 factories[112] operating in its industrial town involved in about 75 Afghan economic sectors, including the production of non-alcoholic beverages and dairy and other foods. The city also has 4,057 business enterprises,[113] which provide employment and income for many people. Herat City's industrialization is also linked to its strategic location and connectivity with other regions and countries. The city is situated on the ancient Silk Road, which connects it to Iran, Turkmenistan, and other Central Asian countries. The city is also part of the Lapis Lazuli Corridor, a regional trade and transit project that aims to enhance economic integration and cooperation among Afghanistan, Turkmenistan, Azerbaijan, Georgia, and Turkey.[114]

The most recent survey data that were publicly available for Afghanistan's Multidimensional Poverty Index (MPI) estimation refer to 2016–17. Based on these estimates, 57.6 percent of the population in Herat are classified as multidimensionally poor, experiencing multiple deprivations in health, education, and standard of living.[115] Afghanistan's social protection system remains nascent and fragmented with the most vulnerable and poor households remaining without any effective coverage and are therefore reliant on the continuation of large-scale humanitarian assistance across the country. However, the international community as well as the de facto authorities have been supporting some elements of social protection in different ways. The social protection situation in Herat, like all other provinces in Afghanistan, has been challenging, with many families living in poverty and struggling to meet their basic needs, with an estimated 38.1 percent of households in affected communities indicating food shortages in the month of October. The province has a high rate of child labor, and many children, mostly boys, are forced to work to support their families. Women and girls in the province face significant challenges, including limited access to education and health care. Access to basic services such as food,

health, nutrition, employment, education, protection, and shelter is limited in many parts of the province. The lack of infrastructure and services has been a major challenge for the people, particularly those living in rural areas.

The change in administration remains a major challenge for jobs, livelihoods, and social protection. The Taliban takeover in 2021 disrupted economic activities, investments, trade, and public services and led to political instability, insecurity, human rights violations, lack of social capital, low trust among the people, and restrictions on women's mobility, access to education, and participation in social and economic life. Women and other vulnerable groups face discrimination, exclusion, and marginalization, and have limited opportunities to access decent work, skills development, and social protection. Low labor force participation, informality of economy, poverty, restrictions on cash withdrawal and money transfers, limited access to finance and liquidity for businesses and households, limited access to markets, inadequate infrastructure, increasing water scarcity, low productivity, and a lack of investment in key sectors are other major challenges people face.

3. Assessment of Disaster Effects: Damage and Loss Estimates

A. Employment and Livelihoods

The earthquakes resulted in loss of 22,932 jobs (26 percent for women) in the nine affected districts. With an estimated 5.96 million days of work lost only in the year after the disaster, the loss of personal income amounts to US$35.6 million (table 79).

Table 78: Job Losses Per Sector by Sex

Sector	Job Losses		
	Men	Women	Total
Agriculture	14,741	5,179	19,920
Commerce and Industry	2,060	724	2,784
Service	169	59	228
Total	**16,970**	**5,962**	**22,932**

Table 79: Workdays Lost and Income Loss Per Sector by Sex

Sector	Job Losses			Loss in Personal Income (US$)
	Men	Women	Total	
Agriculture	3,832,608	1,346,592	5,179,200	26,912,346
Commerce and Industry	535,642	188,198	723,840	7,990,155
Service	43,867	15,413	59,280	654,366
Total	**4,412,117**	**1,550,203**	**5,962,320**	**35,556,867**

Agriculture: The earthquakes have devastated the agriculture sector, where 19,920 workers (30 percent in livestock) have lost their jobs (table 80). This means a loss of 5.2 million workdays and US$26.9 million in personal income in the coming year. The disaster may also increase child labor, as many children may have to drop out of school and work to help their families.

Table 80: Job Losses in Agriculture

Subsector	Job Losses
Crop	13,975
Livestock	5,945
Total Estimated	**19,920**

Commerce and Industry: The earthquakes have impacted 2,784 workers (26 percent women) in commerce and industry, mostly in urban areas (table 81). As many as 723,840 workdays are expected to be lost, resulting in a personal income loss of at least US$5.2 million over the year following the earthquakes. Small businesses are the most severely affected, with approximately 50 percent of total damage, followed by medium-sized enterprises with 47 percent. Many workers will be busy rehabilitating their dwellings and will experience significant personal income loss.

Table 81: Job Losses in Commerce and Industry

Subsector	Job Losses
Food processing, Agribusiness	845
Commerce, wholesale, retail	794
Manufacture, textile, carpet, handicraft, etc.	725
Construction	239
Other	180
Total Estimated	**2,784**

Service: At least 228 workers in the service industry have lost their jobs due to the disaster, resulting in a loss of 59,280 workday and personal income loss of US$429,565 over the course of one year. At least 22 enterprises working in the service industry have incurred damages.

B. Social Protection

The earthquakes have increased the vulnerability of the affected communities to multidimensional poverty and disrupted their social protection, including access to livelihood and income sources. They have caused severe damage to the water supply infrastructure in the affected districts, affecting around 400,000 people who rely on water collection for their household needs. The majority of them are women (56 percent) and girls under age 15 (14.6 percent), who face increased risks of waterborne diseases, violence, and exploitation. The lack of safe and sufficient water has

also affected the hygiene and sanitation practices of the people, as 37 percent of the affected population reported insufficient water access and 46 percent expressed concerns about water quality.

The health sector has also suffered significant losses due to the earthquake, as 56 public health facilities and one regional hospital in the center of Herat province were physically damaged, along with 29 private clinics. The damage to the health facilities has reduced the availability and quality of health care services for the affected population, especially for women, children, and the elderly. In addition, the medical and non-medical equipment in 55 public health facilities have been damaged, ranging from minor to full, affecting the functionality and capacity of the health system.

The earthquakes have also destroyed or damaged a large number of houses and schools in the affected districts, affecting the shelter and education of the people. The assessment showed that 13,516 houses were fully collapsed or damaged beyond repair, 18,434 houses suffered major damage, and 17,628 houses sustained minor damage in the nine affected districts. The damage to the houses has exposed the affected population to harsh weather conditions, insecurity, and displacement. Moreover, the earthquake has affected the education of almost 180,000 students and 4,390 teachers in 295 public schools and CBE classes. Among them, 99 institutions were assessed as fully damaged and 189 institutions were assessed as partially damaged, resulting in the loss of learning time and productivity for the students and teachers. The damage to the schools has also increased the risk of dropouts, especially for girls and children with disabilities.

4. Linking the Effects to the Human Impact

The earthquakes and aftershocks in Herat Province have caused widespread devastation and human suffering. They have left many people homeless and without access to essential services and livelihoods. Basic and essential infrastructure and services, such as dwellings, schools, clinics, and community and social structures, including access roads, WASH facilities, and mosques have also been destroyed. They also triggered landslides that damaged traditional water sources, irrigation systems, and disaster reduction structures, affecting resilience against natural shocks, agriculture, and food production. The affected population lost their livelihood assets and income sources, reducing their purchasing power, nutrition, and food security. The communities affected have had to adopt negative coping strategies, including reducing food consumption, selling productive assets, borrowing money, migrating, or engaging in hazardous or illegal activities.

The earthquakes also left a differential impact on different groups of people, depending on their socioeconomic status, gender, age, and disability. The disaster can worsen the existing inequalities and discrimination and undermine the social cohesion and inclusion of the affected communities. For example, women and girls may face increased domestic and care work, as well as increased risks of gender-based violence, forced and early marriage, sexual exploitation, and abuse. Children and youth may face increased risks of dropping out of school, in a context where many girls face restrictions in accessing school, child labor, specifically for boys, drug abuse, and psychological distress. Around 34 percent of key informants reported decrease in demand for food items and 22 percent reported decrease in demand for non-food items, which will affect the revenues and the profits of local producers and traders.[116] The loss of jobs and livelihoods due to the earthquakes can also increase the overall risk of the affected population, especially the most marginalized and disadvantaged groups. Therefore, it is imperative to provide immediate and

long-term support to the affected population to restore their livelihoods, protect their rights, enhance their capacities, and build their resilience.

A Closer Look: Gender Impact

Women's limited access to Food Security and Livelihoods in Herat.

Food security is a critical concern in Herat. Prior to the earthquakes, 97 percent of households mentioned food as their first need[117] with the main barrier to accessing food being high prices. Another barrier was women's limited access to the market due to restrictions imposed on their mobility and their rights. Prior to the earthquakes, 34 percent of women in Herat Province said they could go to the market unaccompanied, but 50 percent said they needed to be accompanied (by a mahram or male guardian), and 15 percent could not access the market at all.[118]

In addition, livelihood opportunities remain extremely limited for women in Herat. In 2022, 86 percent of women were unemployed, and 8 percent partially employed.[119] In May 2022, 737 women-owned businesses in Herat Province indicated that women entrepreneurs were involved in garments and clothing (tailoring), food production and processing, handicrafts, and livestock. Post-August 2021, 43 percent of respondents countrywide reported closing their shops for fear of the DFA and restrictions on women's mobility.

The earthquakes have further impacted the livelihoods and access to food of the affected households. In the earthquake-affected areas, the main livelihood of many households was rearing cattle and other animals, which were used for milk and other products. The earthquakes caused the death of cattle with many dying of shock. Moreover, an important entry point for the availability of food for many people in the community was the joint cooking space and common oven, which were destroyed as a result of the earthquakes, severely impacting food security. It also affected the social fabric of the community and women's mental health, since these cooking spaces were one of the few places where women could gather. Women mentioned the reconstruction of these spaces as a top priority for recovery.

5. Recovery Needs and Strategy

The earthquakes deprived people in affected communities of their jobs and reduced the ability of households to raise income, diminishing (permanently or temporarily) their capacity to make a living. Many lost their shelters and livelihoods, and while emergency relief helps households survive in the first stages, there is an urgent priority to get people back to work, promote economic recovery, and reconstruct or replace affected livelihoods. The reactivation of disaster-stricken economies facilitates the transition from emergency relief to recovery and restores people's dignity by allowing them to make a living again and contribute to society.

Recovery Needs

In response to the earthquakes, a **Promoting Employment, Decent Work and Social Protection Through the Humanitarian-Development-Peace Nexus** is proposed to bridge the continuum from immediate income generation to medium- and long-term employment recovery and social protection. The program should combine employment-intensive investments, livelihood programs, employment services, protection and engagement of women and girls and vulnerable groups, and social protection to respond to the relief and recovery needs of the earthquake-affected communities, with a particular focus on the most vulnerable households, including those headed by women and persons with disabilities. The estimated budget for the recovery needs amounts to **US$50.5 million.**

Recovery Strategy

Employment is core at all stages of disaster management and response. It is an immediate as well as a development need, thus requiring that job creation be an integral part of both humanitarian and recovery response. The proposed integrated response strategy includes employment-intensive investment programs; livelihood programs through local economic development using market systems development approaches; recovery of the labor market including through public emergency employment services; protection of vulnerable groups, especially children, young people, and women who have lost their immediate families; and social protection. Key aspects of the proposed strategy are briefly explained below:

- **Employment-intensive Investment Program:** The key short-term priority is to provide immediate short-term employment to people affected by the earthquake, including women and other vulnerable groups, using environment-friendly and local resource-based employment-intensive investment programs. These programs should target the rehabilitation and maintenance of essential community infrastructures that would provide long-term and visible improvements in access to livelihoods, basic social services, and economic activities. Infrastructure may include rural roads, irrigation/water systems, DRR measures, environmental works, and others. Labor-based approaches also develop a variety of technical and other skills, including in planning, negotiation, and decision making, thus empowering individuals and communities. Finally, working together to achieve a common goal creates social cohesion and stability.

- **Livelihood Programs through Local Economic Development:** The earthquakes imposed tremendous losses to infrastructure, productive assets, including human resources, disrupting labor market and production in the affected areas. Local economic development seeks to rebuild and "re-engineer" the local economy and society by means of consensus-based action involving all stakeholders, promote local business capacity, stimulate innovative aptitudes, and achieve that by using local resources in a well-integrated approach. Recovery efforts should focus on agricultural livelihoods recovery, enterprise, and entrepreneurship development, employability enhancements, promotion of employment-friendly investments, promotion of care and solidarity economy, access to markets and credit, and social dialogue principles and techniques to enhance resilience to future disasters.

  In the medium term, the recovery of employment and livelihoods will be promoted through building and enhancing the capacities of people and institutions. It is therefore

crucial to provide earthquake-affected workers with community-based market responsive skills development trainings and post-training supports to address the demand for skilled labor during the recovery process and to promote sustainable decent jobs, including for women, persons with disabilities and other vulnerable groups. At the same time, business development and management support should be provided to MSMEs, especially women-led ones, to enhance their resilience and contribute to local economic recovery by sustaining and creating more decent jobs. In the long term, systematic support will continue to promote job-rich recovery and the promotion of resilient livelihoods.

- **Recovery of Labor Market through Emergency Employment Services:** Emergency employment services are crucial in the aftermath of a disaster when changes in labor supply and labor demand are larger, occur faster, and employment needs are pressing. The program aims to promote equal access of all to decent jobs by providing labor market information and guidance to jobseekers, promoting employability, matching and placement, and providing one-stop-shop referral services. The intervention will facilitate employment and information flow to beneficiaries, to the most vulnerable groups including youth and women, for jobs created. The one-stop-centers will act as hubs within the area-based regions for the central registration of program beneficiaries seeking employment and livelihood support. The potential beneficiaries will be registered, profiled, and referred to appropriate services provided by different programs and actors across the UN and public and private sectors. The intervention will develop a simple database and tools for the registration and collection of labor market information that will inform further programming of the area-based programs.

- **Protection and participation of Vulnerable Groups:** The component aims to provide a comprehensive framework for the protection of vulnerable groups and seeks to ensure that their needs are met and that they are not left behind in the recovery process. It also aims to promote social inclusion and reduce inequalities by addressing the specific needs of different vulnerable groups, including persons with severe disabilities who tend to have limited access to learning and job opportunities, women-headed households who may be even more exposed to gender-based violence, discrimination, and abuse, unaccompanied children who are exposed to the risk of being trafficked or exploited, and young people who were already experiencing high levels of unemployment and underemployment prior to the disaster. The efforts should also ensure that all these vulnerable groups actively participate across the program's design, implementation, and management.

- **Social Protection:** The measures catering to people in both the formal and informal economy are vital for a balanced, inclusive, and successful recovery and for ensuring social stability and cohesion. In the absence of a national social protection strategy or national cash transfer schemes, the disaster underscores the need to provide complementary package services, including emergency social safety net support and interventions to the poorest, most vulnerable affected households. Affected households in the disaster-affected areas require immediate humanitarian assistance in terms of shelter, livelihoods, food security, health, nutrition, water and sanitation, as well as protection. Implementing labor market interventions, such as programs that promote employment and protection of workers, and providing social assistance programs, such as transitional replacement of income loss through cash transfers, could help eliminate severe poverty and hunger in multiple dimensions.

Table 82: Identified Recovery Needs by Duration and Priority[120]

Intervention/Activity		Short-term (up to 1 year)	Intermediate (up to 3 years)	Long-term (up to 5 years)	Priority (rank 1–5)*
1.	Create immediate short-term decent jobs with poverty reducing income using employment-intensive and local resource-based approaches.	X			1
2.	Rehabilitate and maintain essential community infrastructure, including roads, agricultural and environmental works, that provide long-term and visible improvements in access to livelihoods, basic social services, and economic activities.	X	X		1
3.	Establish emergency employment service centers to facilitate equal access to decent jobs by providing labor market information and guidance to jobseekers, promoting employability, matching and placement, and providing one-stop-shop referral services.		X	X	2
4.	Design and deliver appropriate community-based and market-responsive skills development trainings and post-training support to enhance employability and livelihood options.		X	X	2
5.	Create decent jobs through enterprise and entrepreneurship development initiatives, including provision of technical and financial assistance to affected businesses to recover, using market systems development approaches.		X	X	1
6.	Support affected communities through provision of essential inputs to enable them repair and rebuild their on-farm and off-farm agricultural livelihoods.	X	X		1
7.	Provide immediate non-contributory assistance, including in-kind and food transfers, health and nutrition services, winterization, WASH, and conditional and unconditional cash transfers, to improve lives of vulnerable households affected by the earthquakes and experiencing multidimensional poverty.	X	X		1
8.	Promote compliance with and respect for the fundamental principles and rights at work, including occupational safety and health, elimination of forced and child labor, and non-discrimination through the response strategy.	X	X	X	1

(*) 1 = highest priority, 5 = lowest priority

The full recovery from the disaster is expected to last between three and five years. Some of the actions also aim to foster long-term change and resilience in the affected communities. The lessons learned from the recovery should inform future development goals and strategies to ensure inclusive economic growth and disaster preparedness.

Recommendations for Recovery Strategy

- Establish a Response Coordination Mechanism to facilitate information sharing and optimal use of resources through enhancing synergies and reducing redundancy for a fair, inclusive, and better recovery.

- Prioritize the reactivation of economy in the early stages of response to create genuine jobs, which not only provide decent income and social protection for workers and their families, but also reduces the need for longer-term relief assistance and enhance the resilience of affected people and communities.

- Prioritize the needs and participation of the most vulnerable groups, including the multidimensional poor, women, minority groups, persons with disabilities, unaccompanied children, and elderly, who are disproportionately affected by the earthquake, and implement an integrated multisectoral recovery program that enhances their resilience. These groups are doubly disadvantaged as they were already vulnerable and suffering. The social assistance programs that can prevent them from falling deeper into poverty.

- Develop social protection systems and coordination mechanisms to help households better manage future shocks and recover. While the social protection systems are still nascent, international partners can begin to put together a basic strategy that can be later built up into a national system.

- Use relief and rehabilitation as a vehicle for immediate job creation and recovery. Temporary jobs may be created during relief operations, mobilizing women and men from the local work force who are out of work due to the disaster, to provide help, remove the effects of the disaster, and contribute to rehabilitation of infrastructure. This accelerates recovery, uses local resources, and provides needed income in the aftermath of a disaster, until permanent employment and livelihoods are restored through sustainable economic recovery.

- Prefer technologies that are labor-intensive, use local labor and resources for relief and rehabilitation activities, rather than technologies that are capital-intensive, imported, or environmentally and socially harmful, which may need more money, skills, equipment, and external support.

- Rehabilitate and enhance the resilience of private sector enterprises, particularly women-led/owned ones, through market system development approaches. Many self-employed workers, as well as those hired for a wage in business enterprises, may not be able to return to their jobs unless the enterprises themselves recover from the disaster and are sustained to function.

- Enable local businesses, including input suppliers, to participate in the competitive bidding for relief and rehabilitation works. This could include (i) making the bidding requirements easier; (ii) setting standards that give priority to local businesses, either alone or in partnership with others; and (iii) assisting local businesses to build their
- capacity to participate in bidding for such works, including through their registration and staff training.

- Train the local labor force in key technical and vocational skills necessary for reconstruction and recovery, such as entrepreneurship, enterprise development, financial management, masonry, carpentry, plumbing, or offering good prospects for long-lasting employment.

- Promote decent work. Even in temporary employment, and even more so when restoring normal or permanent employment, labor conditions should conform to the decent work principles adopted by the ILO. This means an opportunity for women and men to obtain productive work in conditions of freedom, equity, security, and human dignity.

- Protect workers, persons with disabilities, children, and women from work abuse and discrimination. Emergency situations are no justification for the worst forms of child labor, gender abuse, slavery, discrimination, and exploitation of workers. The most demanding requirements of labor regulations (e.g., contributions to social security) may be temporarily suspended during the emergency, but norms on the worst forms of child labor, slavery, or other forms of abuse, are on no account to be condoned even during the emergency.

- Build back better. Rehabilitation and reconstruction should, as far as possible, improve the previous situation, and in particular, create more resilience for future shocks and disasters. This includes building back better infrastructure, and also better jobs and livelihoods (adherence to international labor standards, better skills, wider access to markets, better compliance with labor regulations, and so on).

- Build preparedness. In areas prone to disasters, and after a disaster has occurred, steps may be taken to be better prepared next time. This includes building physical protection (levees and flood plains, cyclone shelters, anti-seismic dwellings), improving enterprise preparedness to participate in public reconstruction works, and enhancing workers' skills.

- The recovery, in general, should follow the following guiding principles throughout the design, implementation, management and oversight:

    - **The human rights-based approach:** Ensure adherence to international human rights standards and principles to promote and protect human rights.

    - **Fundamental principles and rights at work:** Ensure that the fundamental principles and rights at work, including occupational safety and health, the elimination of discrimination in employment and abolition of child and forced labor, are fully respected and promoted in all recovery interventions.

    - **Neutrality:** No participation individually or organizationally in hostilities or taking sides in controversies of a political, religious, or ideological nature.

- **Impartiality:** Assistance will be provided without discrimination based on language, ethnic origin, political opinion, gender, or religion.

- **Operational independence:** Assistance will be autonomous from the political, economic, military, or other objectives that any actor may hold regarding areas where activities are being implemented.

- **Centrality of protection:** Protection will be placed at the center of all actions, requiring that protection shall be mainstreamed throughout activities for the affected population.

- **"Do no harm":** Support will strive to "do no harm" or to minimize potential harm when being present and providing assistance.

- **Dignity:** People in need shall be respected as equal partners in action in all activities and their dignity as human beings will be maintained in all engagements.

- **Gender equality:** International standards and principles to promote gender equality and the full realization of women's rights and freedoms will be integrated and mainstreamed across all activities.

- **Cultural sensitivity:** Local customs, cultures, and religions are respected while simultaneously adhering to international humanitarian and labor standards on gender and equality.

- **Prevention of sexual exploitation and abuse:** Create and maintain an environment in which sexual violence is not tolerated and prohibited for all interactions.

- **Leave no one behind:** Interventions should prioritize the needs of the most vulnerable and marginalized households, and commit to eradicate poverty, end discrimination and exclusion, and reduce the inequalities and vulnerabilities that leave people behind.

- **Non-discrimination, diversity and inclusion:** Drive active and meaningful participation of women, youth, minorities, persons with disabilities, and people who suffer discrimination based on sexual orientation and gender identity.

- **Resilience:** Promote integrated and cost-effective approaches informed by the UN Resilience Framework that reduce risks, mitigate displacement, and help people and communities anticipate, prepare, respond, and recover from shocks and crises.

- **Accountability** to the people of affected communities, including measures to build upon and extend greater transparency and improved measurement and reporting on results.

- **Community-based and people-centered approach:** Promote local resource/expertise-based and people-centered approaches, which should enable communities to undertake their own recovery, utilize social networks, and rely on locally available resources, skills and knowledge, but at the same time draw upon learning and good practices of other countries.

- **Disaster risk reduction:** Interventions should include considerations of disaster risk reduction and build back better.

- **Environmentally friendly:** Ensure that interventions are environmentally friendly and sustainable, taking into account the environmental impact of the interventions and the long-term sustainability of the recovery process.

6. Methodology and Limitations

The data from income flow losses in agriculture and private sector were used to calculate the job and income loss due to the earthquakes. In absence of reliable estimations of the districts' contribution to the total annual output of Herat Province recovery needs were calculated based on the cost of creating one job in Herat Province and the number of job losses to recover, as a labor market intervention ensuring social protection. Estimations on agriculture jobs and income losses for two districts were extrapolated based on data from the seven other districts.

As the social protection system in the country is fragmented, the report focuses on the households with multidimensional poverty and the support to some elements of it that the international community and de facto authorities have been providing. Data was adjusted for employed population based on the employment statistics of the province and the population of each district. The data sources and the calculations have some limitations as they are based on estimates and assumptions. Meanwhile, the calculation of the recovery needs may not capture the full extent of the economic impact of the earthquakes, as it does not account for the variation in the output of the affected districts. The extrapolation of the data for the agriculture cluster may also introduce some errors, as it does not consider the differences in the agricultural activities and productivity of the nine districts.

Disaster Risk Reduction

1. Summary

The earthquakes in Herat Province that impacted over 2.2 million people exposed the gaps in the country's national disaster preparedness and response systems. It revealed the limited capacity of the de facto DRR authorities in Herat Province to coordinate the humanitarian response and recovery process. The earthquakes have significantly intensified existing vulnerabilities in Herat as these struck vulnerable communities, which were already grappling with decades of conflict and underdevelopment, further eroding their resilience to cope with multiple and intersecting shocks. The socioeconomic disparities between the urban and rural areas have become more pronounced. The hardest hit are the rural communities who live at subsistence levels with limited or no access to basic services, such as health, education, and welfare. The DFA and national and international organizations, including the UN, provided emergency support to the affected people. Other civil society and volunteer groups also provided immediate response to the urgent lifesaving needs.

The combined total damage and loss in the DRR sector is estimated at US$3.3 million. Of this figure, a total damage of US$1.4 million has been estimated for 10 buildings, 8 doors, 6 computers, 5 protection walls, and 3 retaining walls. All the damage incurred was in the public sector and no damage data for private sector DRR assets was reported. Meanwhile, in terms of losses, the DRR sector estimated a total of US$1.9 million, comprising additional public expenditures for emergency response operations; regular budgets diverted/reallocated to earthquake response; and forgone staff time for service delivery due to personnel's injuries sustained from the earthquakes and additional costs for their medical treatments. There are also unquantifiable costs of service delivery disruptions and delays that are elaborated in the report.

The DRR sector recovery needs are estimated at US$7.7 million. This amount will enable the implementation of the following: (i) reconstruction and repair of damaged buildings, protection and retaining walls, and replacement of damaged equipment and lost documents; (ii) the restoration of DRR services

and access to these services; (iii) the improvements of the DRR systems in Herat and to ensure a resilient recovery by strengthening the capacity to build back better; and (iv) activities to address emerging risks and vulnerabilities caused by the earthquakes. Estimated recovery needs in the short term (up to one year) is US$2.8 million. For the implementation of the activities in the medium term (up to three years), the estimated cost is US$3.5 million. The estimated cost for the long term (up to five years) is US$1.4 million.

Table 83: Total Damage, Loss, and Need by Province/District - Disaster Risk Reduction

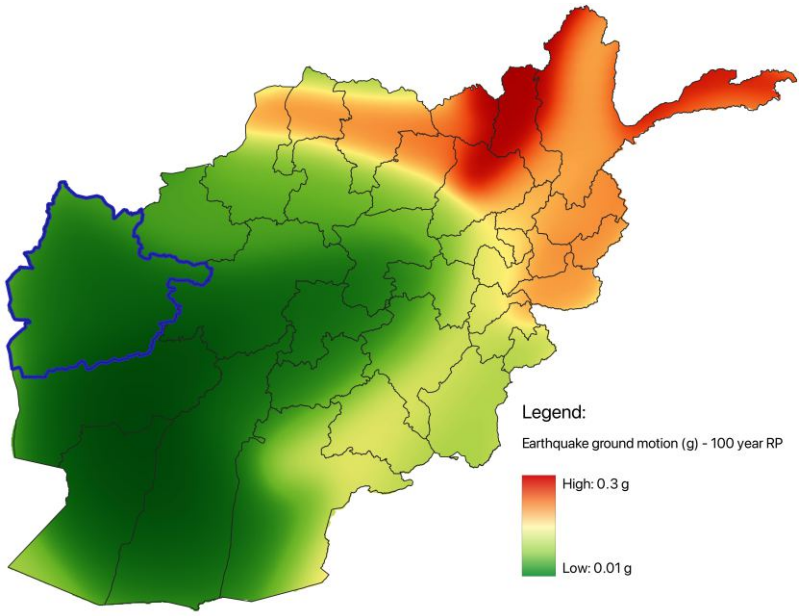
Province/District	Total Damage (US$)	Total Loss (US$)	Total Need (US$)
Gulran	200,000		280,000
Herat	585,600	1,863,232	6,559,120
Injil	300,000		420,000
Zindajan	300,000		420,000
Grand Total	**1,385,600**	**1,863,232**	**7,679,129**

2. Pre-Earthquakes Context and Baseline

Sector Characteristics and Conditions Prior to the Earthquakes

Herat Province, situated in the north-western region of Afghanistan, stands as the country's second most populous province after Kabul. Afghanistan is highly prone to intense and recurring natural hazards, encompassing earthquakes, floods, flash floods, landslides, avalanches, and droughts. The country's low level of socioeconomic development exacerbates its vulnerability to disasters, leading to frequent loss of lives, livelihoods, and public and private property. Between 2000 and 2022, it was estimated that over 33 million people had been affected by disasters triggered by natural hazards, resulting in more than 9,000 casualties and cumulative damages valued at US$227 million (adjusted to 2022 terms).[121] Floods emerge as the most prevalent disaster, causing the highest casualties, while recurring droughts impact the largest number of people and cause the highest damages.

Map 7: 100 Years Return Period Earthquake Hazard for Afghanistan



Source: Multi Hazard Risk Assessment (MHRA) conducted by the World Bank in 2018.
Peak ground acceleration measured in g. Herat Province's borders are highlighted in blue.

Herat Province is not exempt from these challenges, experiencing devastating floods and long-lasting droughts. Earthquake hazard in Herat, however, is comparatively lower than in other provinces of the country. The province ranks 31 out of 34 in terms of expected earthquake intensity, as measured by peak ground acceleration, a key indicator of earthquake hazard (map 7).[122]

Inventory of Infrastructure Assets

The following de facto DRR institutions in the Province of Herat were identified: the de facto Provincial Directorate of ANDMA, the operational arm of the de facto Provincial Disaster Management Commissions (PDMC), chaired by the de facto Provincial Governor; the de facto MRRD Herat Provincial Directorate, the de facto National Environmental Protection Agency (NEPA) Herat Provincial Office, the de facto Municipality of Herat, and the Community Development Councils (CDCs). The infrastructure inventory for these DFA institutions mainly consisted of buildings that house their respective offices including as follows: 5 buildings of the municipality, 1 building of the de facto ANDMA, 1 building of the de facto NEPA, and 3 buildings of CDC. Herat Province also has flood and landslide mitigation infrastructure, such as retaining walls and protection walls, across different locations. The infrastructure is constructed by agencies such as the de facto ANDMA and CDC.

Status of Service Delivery and Institutional Capacity

Since the early 2000s, Afghanistan has undertaken multiple steps to strengthen risk governance and improve the legislative framework required for comprehensive disaster risk management: In 2003, it developed the first disaster management plan, while in 2011 it enacted the legislative act that regulates activities related to disasters, the Law on National Disaster Response,

Management and Preparedness. Within this legislative framework, de facto ANDMA, heading the National Disaster Management Commission (NDMC), is the main responsible organ for coordinating emergency preparedness and response. While the de facto NDMC is responsible for policy at the central level, coordination of disaster management within the provinces is channeled through the PDMCs. Similarly, at district level, activities are coordinated through the District Disaster Management Committees.

National DFA line ministries are also involved, particularly the de facto MRRD, which focuses on DRR implementation at the subnational level and the de facto Ministry of Interior and Planning playing a key role at provincial and district levels.[123] However, today, the role of the de facto ANDMA in disaster management has been focused on response, leaving prevention, risk reduction, and recovery-related tasks of disaster management largely unmet. Further to this, the state of early warning delivery in the country is deficient. Several DFA agencies are supposed to provide monitoring and early warning services for different hazards (e.g., the de facto Afghanistan Meteorological Department for avalanches and flash floods; the de facto Ministry of Energy and Water for floods; the de facto Department of Forest for forest fire; etc.). However, there is a lack of standard operating procedures (SOPs) outlining the process for information sharing, early warning triggers, and the dissemination of protective measures to the public. Even when effective early warning systems are in place, such as for flash floods, there is a scarcity of capabilities to effectively inform communities through the transmission of actionable and timely advisories to reduce the associated risks.

Existing Legal Framework

After establishing the Department of Disaster Preparedness in 1973, the Government of Afghanistan developed several policy documents on DRR, including the Afghanistan Disaster Management Law, Afghanistan National Disaster Management Plan, National Disaster Management Framework, Disaster Management Strategy, and Mitigation Policy. The law officially entered into force in October 2012. In collaboration with partners, ANDMA has developed other relevant documents, such as a Strategic National Action Plan in 2011, National Disaster Mitigation Policy in 2002, five-year Disaster Management Plan in 2010, Sectoral Disaster Management Plan in 2010, Provincial Disaster Management Plans in 2010, and SOPs for effective and timely response during and after emergencies for some disasters (e.g., floods). NEPA has developed the National Adaptation Programme of Action in 2009 and Nationally Determined Contribution in 2015.

Afghanistan is a party to the Sendai Framework for Disaster Risk Reduction 2015–2030, through which it has undertaken to implement the priorities as laid down by the Framework. Within the de facto ANDMA, there is a strong realization of the requirement to implement Sendai's priorities and the capacity gap therein. So far, Afghanistan is one of the lowest achievers of the Sendai priorities. The de facto ANDMA and NEPA remain fully committed to all existing legal frameworks, plans, and policies, such that in any discussions pertaining to the Herat earthquake recovery, these institutions make reference to these policies, frameworks, and plans.

Sector Developmental Challenges

Even prior to the earthquakes, DRR in Herat was already faced with challenges as revealed by sectoral reviews. Some of these include (i) limited data availability hindering the effort to implement, prioritize, and plan initiatives based on sound scientifically based risk information; (ii) lack of a nationwide multihazard early warning system, capable of reaching the last mile with understandable and actionable messages; (iii) limited financial resources, particularly in reference to expenditures incurred in the post-disaster recovery phase; (iv) limited technical expertise and capabilities to monitor, analyze, and collect data, limitations in terms of equipment and facilities and poor quality control; (v) lack of comprehensive emergency preparedness, management, and response plans, and related SOPs, assigning clear responsibilities to specific agencies; (vi) lack of hazard-specific plans detailing the actions that the responsible agency should undertake before, during, and after an emergency; and (vii) limited women's participation impacting inclusivity in disaster risk management.

3. Assessment of Disaster Effects: Damage and Loss Estimates

Overall, the earthquakes in Herat caused minimal effects on infrastructure and assets in the DRR sector. Based on the field assessment reports and consultation with the de facto Herat Provincial Offices of ANDMA, MRRD, NEPA, CDC, and the Herat Municipality, there was minor damage to DRR infrastructure and assets. Minor damage was reported for 1 building, 8 doors, and 6 computers of ANDMA, 5 buildings of the Herat Municipality, 1 building of NEPA, and 3 buildings of the CDC. Minor damage to disaster mitigation structures was also reported in three districts namely, Injil, Zindajan, and Gulran. The de facto ANDMA reported minor damage to 5 protection walls (3 in Injil and 2 in Gulran) and 1 retaining wall in Zindajan District. Meanwhile, the CDC also reported that 1 retaining wall in Zindajan District has incurred minor damage. All the damage incurred was in the public sector and no damage data for private sector DRR assets was reported. As there was no data available for the private sector, the reported disaster effects covered in this report are only for the public domain.

The minor damage to some infrastructures and assets of the de facto DRR institutions disrupted regular service delivery functions of the concerned institutions of their earthquake response. The de facto ANDMA Herat Provincial Directorate provides weekly updates on weather conditions to the population. It oversees the dissemination of DRR messages to the public and also implements some mitigation actions. It also facilitates the development of preparedness and response plans. The series of earthquakes that struck Herat Province disrupted the de facto ANDMA's service delivery as the funds intended for its services were diverted to the earthquake response and all the de facto ANDMA activities were put on hold while the institution focused on the emergency response. The de facto MRRD has been leading disaster preparedness for flooding and landslides prevention/mitigation measures in Herat Province. All these DRR and preparedness activities of RRD in Herat were also put on hold as staff were deployed to assist the international aid agencies during the response. Meanwhile, the de facto Herat Municipality was also not spared service delivery disruptions as it needed to deploy its engineers to assist in the earthquake response, specifically in the construction of temporary shelters. Thus, its regular provision of engineering services and civil work supervision of the construction of drainage and retaining walls were also put on hold. In the same manner, all the de facto NEPA's monitoring, and supervision of environmental regulations and activities of communities were suspended as it also deployed staff to assist in the response. For the CDC, all the agriculture infrastructure

support services to the communities were also disrupted due to the direct damage to the farms and agricultural assets.

Damage and Loss Estimates

Total cost of damages of US$1.4 million has been estimated for the DRR Sector, 58 percent of which were reported by the de facto ANDMA, 5 percent by the de facto Municipality of Herat, 0.36 percent by the de facto NEPA, and 36 percent by CDC. These include damage to buildings, equipment, and documents, and protection and retaining walls. Damage to protection and retaining walls has been estimated at US$0.80 million or 57.86 percent of the total damage. Meanwhile, there has been no damage to any public records, documents, or databases except for the CDC that reported minor damage to some files and letters and will require a minimal amount to be reconstituted.

The total loss for the DRR sector is estimated at US$1.9 million. The losses comprise (i) additional public expenditures for emergency response operations; (ii) regular budgets diverted/reallocated to earthquake response; and (iii) forgone staff time for service delivery due to absence from work owing to injuries of personnel sustained from the earthquakes and additional costs for their medical treatments, and personnel/staff deployed to assist in earthquake response. It is important to mention that there are unquantifiable losses due to service delivery disruptions and delays, which were elaborated here in this report as part of the qualitative analysis.

The loss incurred due to additional public expenditures for emergency response operations delivered by the DFA (ANDMA, MRRD, NEPA, Herat Municipality), and CDC to the affected population consisted of provision of tents, non-food items, and logistics support to assist in the evacuation of people.

Service delivery functions were also disrupted specifically by way of delayed monitoring activities of the de facto MRRD and slowed down implementation of major activities of the CDC due to the days of unrendered service. Moreover, the service delivery disruptions account for the cost of forgone staff time of the different de facto DRR institutions and the amount from their regular program budgets diverted to the earthquake response. Specifically, these constitute personnel (e.g., engineers and other staff time) who were deployed to assist in the earthquake response to check/assess the different infrastructure and buildings in Herat, in rubble or debris clearing, and in the construction of temporary shelters for families whose houses were destroyed. In addition, funds intended for monitoring weather conditions, disaster risk management, preparedness, and mitigation activities for flooding and landslides were diverted to aid the earthquake response or programs and activities of the institutions were put on hold as both resources and personnel were utilized to aid in the earthquake response.

Table 84: Total Damage and Loss by District - Disaster Risk Reduction

		Damage (US$)	Loss (US$)
	Detailed list of damage indentified per district	**Public Sector**	**Public Sector**
Gulran	Protection/retaining walls	200,000.00	
Herat	Buildings	580,800.00	
	Equipment/Computer/Files/Documents	4,800.00	
Injil	Protection/retaining walls	300,000.00	
Zindajan	Protection/retaining walls	300,000.00	
	Detailed list of losses identified per district		
Gulran	n/a		
Herat	Additional government expenditure		781,300.00
	Regular budget diverted to response		70,000.00
	Forgone staff time (due to staff injuries)		232.00
	Forgone staff time (staff deployed to assist in response)		11,700.00
	Losses on CDC projects in the communities		1,000,000.00
Injil	n/a		
Zindajan	n/a		
Total		**1,385,600.00**	**1,863,232.00**

n/a: not applicable

Effects on Governance and Decision-Making Processes

The earthquake disaster affected the operational capacities of key de facto DRR institutions. Foremost, given its low seismic risk ranking, the earthquakes were not within the radar of Herat. As such, the institutions and people in Herat were not able to prepare for this magnitude of disaster. This lack of preparedness significantly affected the operations of the different institutions. The earthquake disaster also exposed the gaps in the country's national disaster preparedness and response systems. It likewise revealed the inadequate capacity of the DRR de facto authorities in Herat Province to coordinate the humanitarian response and recovery process. The gravity of the earthquake disaster was beyond their capacity, and this negatively affected their ability to take leadership and coordinate response actions as well as the planned recovery. The humanitarian response was almost entirely left to the international aid community.

The international aid agencies provided both the technical and financial capacities, including experts (engineers) to support the disaster response, such as the construction of temporary shelters and provision of response to various humanitarian needs. These capacities can be used for the recovery process and disaster preparedness for any future disaster. However, the de facto DRR institutions are not fully involved in most of the response activities of the international agencies, and thus, learning and gaining knowledge and building the same capacity by the de facto DRR institutions in Herat has not been maximized.

Overall Performance of DRR Systems in Herat

Afghanistan has preparedness and contingency plans but limited resources and elaboration on earthquake emergency response actions. These plans were not activated during the earthquakes in Herat Province. There is a lack of funding, human and logistical capacities, and resources. Moreover, there were no updated earthquake hazard risk maps for use at province or district levels. The National Emergency Operations Center did not function effectively before the disaster and during the response to the Herat earthquakes owing to logistical and operational challenges such as availability of funds. Meanwhile, the DFA established a committee that supported the national and international organizations in the humanitarian response. The country has legal and policy frameworks, strategic plans, SOPs, and institutional mechanisms for DRR. However, these are neither enforced and implemented nor cascaded to the provinces and districts. There is also a need to review and include earthquake risks in these plans and SOPs and allocate a budget to support its implementation.

The state of DRR knowledge, services, and resources in Herat is generally inadequate. There is no disaster risk-related information, information systems, inventory of losses and baseline datasets, and hazard maps (particularly for earthquakes) in Herat. There is no existing effective system to forecast, assess, and monitor hazards like earthquakes. There is only an early warning monitoring system for flooding, which is done by the de facto Meteorological Department, but it is also not efficient, especially in disseminating warning information to the population in a bid to map response actions and reduce the impacts of a disaster. In the absence of a warning system in place, the local people cope by using indigenous knowledge in monitoring impending hazards based on previous experience of the same hazard e.g., floods and droughts.

There are also limited disaster management and preparedness capacities among the institutions in Herat. As part of their regular functions, the de facto DRR institutions have minimal logistical capacity, communication systems, and public awareness campaigns (which are often thematic based on their organizational mandate). The de facto ANDMA and RRD Provincial Directorates have dedicated disaster management staff and the de facto NEPA has environment staff in the province, municipality, and district levels. The CDC for its part has staff and emergency response teams at the district level. The de facto ANDMA in Herat, meanwhile, indicated that they have local preparedness plans, emergency response teams, evacuation centers, and early warning SOPs and protocols (but for floods only).

Herat has national and international NGOs, civil society organizations, municipalities, local community-based organizations, CDCs and neighborhood groups contributing to disaster management and preparedness. These organizations implement activities such as cash transfer, temporary shelter, provision of health clinics and psychosocial support, livelihood programs, community engagements, tree planning and other climate change adaptation actions. Their capacities encompass community mobilization, housing, health, psychosocial support, cash transfer modality in emergencies, community engagement, and DRR.

People affected by the earthquakes have scant access to knowledge, services, and resources related to DRR in Herat. The local population in Herat, especially from the rural areas, do not have access to early warning information on various hazards and lack awareness of actions to be taken at household level to protect lives, assets, and livelihoods, such as information on shelters and evacuation centers in case of emergencies. Similarly, the communities do not have access to any DRR resources such as hazard maps, contingency plans, building standards, relevant policies and are generally deprived of knowledge and awareness about hazards, exposures, and risks.

Moreover, de facto local authorities do not have adequate knowledge of DRR legislation and policies, building codes and standards, hazard information and contingency plans. They also lack access to practical tools and guidelines on integrating DRR into recovery.

4. Linking the Effects to the Human Impact

The current state of disaster preparedness and response in Herat reveals significant shortcomings. While the inability to predict earthquakes is not unique to Afghanistan, the same does not hold true for various other hazards such as floods, flash floods, avalanches, or drought. In Herat Province there is presently only an early warning system for flooding, managed by the de facto Afghanistan Meteorological Department. Although the system is proficient in predicting the intensity of flood events, the associated advisories fail to reach the population. This highlights a critical gap in the establishment of a functioning end-to-end, people-centered early warning system that can effectively and promptly disseminate warning information to the public. This hinders the ability to coordinate actions and mitigate the impact of disaster occurrences.

In terms of disaster management capacities, weaknesses persist across the de facto DRR institutions: ANDMA, the key de facto institution in charge of disaster management, has very minimal capacities for disaster risk management (e.g., dedicated staff at the provincial, municipality, and district levels, a communication system, local preparedness plans, public awareness activities, and emergency response teams). The other DFA institutions' disaster risk management capacities are even less. There are NGOs, civil society organizations, and neighborhood groups engaged in partnership with the de facto DRR institutions implementing and/or providing programs and services such as cash transfer, transitional and temporary shelters, psychosocial support, food and non-food items, flood risk management, and climate change actions.

Disaster preparedness in Herat, reflecting the overall national scenario, heavily relies on indigenous knowledge and past experiences rather than scientific disaster risk knowledge. There is limited awareness on the appropriate actions to be taken in case of an earthquake occurrence as well as preventive measures such as seismic codes for building design and retrofitting. Based on feedback from the de facto ANDMA, people in Herat have access to information on shelters and evacuation centers in case of earthquakes, but they barely participate in disaster preparedness activities, such as contingency planning and simulation exercises. Further to this, very limited preparedness activities and knowledge are available in rural areas, where most of the houses are vernacular and non-earthquake resistant. The de facto local authorities also have limited access to practical tools and guidance on integrating DRR into local recovery and DRR legislation and policies, building codes and standards, hazard information, and national contingency plans. The people in Herat, generally, do not have access to hazard maps, building standards, and relevant policies.

The October 2023 earthquakes have significantly intensified existing vulnerabilities in Herat. The earthquakes struck vulnerable communities, which were already grappling with decades of conflict and underdevelopment, and further eroded their resilience to cope with multiple and intersecting shocks.[124] Herat's built environment is old and national building code standards are not strictly enforced. The structural integrity of the buildings in Herat was significantly altered by the earthquakes. The houses and buildings will require a comprehensive seismic safety audit to ensure their livability. The socioeconomic disparities between the urban and rural areas have

become more pronounced. The hardest hit are the rural communities who had been living at subsistence levels with no access to basic services, such as health, education, and welfare. It has increased people's health vulnerabilities, such as water-borne diseases since the water wells have been severely damaged, silted and/or contaminated. The earthquakes have also increased the population's exposure to other hazards, such as the extreme cold brought about by winter. The Herat earthquakes disproportionately affected the poor and marginalized groups, including women. The high percentage of women casualties (58 percent) demonstrates that vulnerability is not even across gender groups and emphasizes the need for gender-responsive awareness campaigns and increased attention to the unique challenges faced by various segments of the population.

5. Recovery Needs and Strategy

The DRR sector recovery needs comprise (i) recovery needs related to damages (i.e., to repair, rebuild, or replace infrastructure and assets damaged or destroyed); and (ii) recovery needs related to losses and other needs to manage human impact, build back better, reduce risks and other aspects that encompass restoring DRR services and access to these services, improving the performance of the DRR system, ensuring a resilient recovery by strengthening the capacity to build back better, and addressing emerging risks and vulnerabilities.

The DRR recovery vision for Herat is to build resilience to earthquakes and other hazards with zero loss of lives, minimal disruption to services, and substantial reduction of economic losses through risk-informed recovery and development. The sector's recovery strategy comprises short-, medium-, and long-term measures and activities sequenced according to prioritization criteria (table 85). It includes:

1. Recovery of damaged infrastructure and assets and incorporating earthquake and other hazards-resistant construction features to ensure concerned institutions have functioning offices to deliver and implement their programs and services.

2. Restoration of operational capacities of de facto DRR institutions, their functions and services, and of increase local people, women and men, 's access to DRR knowledge, services, and resources.

3. Strengthen disaster preparedness, specifically for earthquakes, including communication and decision support systems .

4. DRR institutional strengthening at national, provincial, and district levels; legal frameworks, policy and plans, and establish disaster data management systems (i.e., loss and damage data).

5. Strengthen response mechanisms and capacities and establish functioning Emergency Operations Centers (EOCs) at national, provincial, and district levels.

6. Earthquake hazard risks and vulnerability assessments.

7. Build public awareness and engagement of civil society, NGOs, and self-help groups in disaster risk management, preparedness, and recovery, ensure gender-responsive awareness campaigns that can reach women and girls with information.

8. Build community resilience including through inclusivity in programming and resilience building initiatives targeting women and girls.

Table 85: Recovery Needs and Estimated Cost by Duration and Priority

S.No.	INTERVENTION/ACTIVITY	RECOVERY NEEDS AND COSTS (US$)				
		Short-term (up to 1 year)	Intermediate (up to 3 years)	Long-term (up to 5 years)	Priority (rank 1–5)*	Cost (US$)
1	**Recovery of damaged infrastructure and assets**					
1.1	Replace damaged computers with higher or improved technical specifications for better functional efficiency.	281,120.00			1	281,120.00
1.2	Replace damaged computers with higher or improved technical specifications for better functional efficiency.	6,000.00			1	6,000.00
1.3	Repair damaged buildings of the de facto NEPA Herat Provincial Office.	7,000.00			1	7,000.00
1.4	Repair damaged buildings of the de facto Municipality of Herat.	105,000.00			1	105,000.00
1.5	Repair damaged buildings of CDC.	420,000.00			1	420,000.00
1.6	Repair damaged protection walls in Injil District.	420,000.00			1	420,000.00
1.7	Repair damaged retaining walls in Zindajan District.	420,000.00			1	420,000.00
1.8	Repair damaged protection walls in Gulran District.	280,000.00			1	280,000.00
2	**Restoration of operational capacities of DRR institutions, their functions and services**					
2.1	Develop DRR institutions' (per agency) contingency plans with an articulation of public budget allocations and dedicated (or deputized) staff for deployment to assist in emergency response, prepositioned relief supplies (e.g., tents, non-food items, etc.), and logistics/transportation support for evacuation.	100,000.00			2	100,000.00

2.2	Quick survey, inventory, and assessment of public buildings to ensure seismic safety, including providing local engineers with training on seismic safety audit.	100,000.00			1	100,000.00
2.3	Develop guidelines and SOPs on prepositioning of relief supplies and goods of relevant DRR institutions.	30,000.00			2	30,000.00
2.4	Develop de facto ANDMA Herat Provincial Office' capacities for dissemination of warnings and advisories to local communities (common alerting protocol).	100,000.00			1	100,000.00
2.5	Increase local people's access to DRR knowledge, services and resources (i.e., public awareness campaigns, implementation of community-based disaster risk management in communities)	25,000.00	25,000.00		2	50,000.00
3	**Strengthen disaster preparedness, specifically for earthquakes, including communication and decision support systems**					
3.1	Develop a province-wide (including district level) earthquake preparedness plan, incorporating impact-based risk monitoring and communication SOPs, and protocols inclusive of last mile dissemination and response planning.		400,000.00	400,000.00	1	800,000.00
3.2	Sensitization of local communities on the earthquake preparedness plans and building the communities' capacities on appropriate response actions.	400,000.00	400,000.00		2	800,000.00

3.3	Establish a failsafe communication system (procedures) to ensure timely and efficient communication before, during, and after a disaster (to include minimal support to procurement of communication equipment and developing an online app to establish redundancy in disaster risk communication).		300,000.00		2	300,000.00
3.4	Sensitization of DRR staff from different relevant institutions in the province and districts on the earthquake preparedness plans with emphasis on their roles and responsibilities, the SOPs, and protocols.		100,000.00		2	100,000.00
4	**DRR institutional strengthening, legal frameworks, policy, and plans**					
4.1	Strengthen institutional capacity and arrangements to lead and manage disaster risk reduction at national, provincial, and district levels.		100,000.00		2	100,000.00
4.2	Review the existing legal frameworks, strategic plans, and policies on DRR, incorporate earthquake elements thereto and ensure their implementation and enforcement at province and district levels.		50,000.00		3	50,000.00
4.3	Establish data management systems, i.e., damage and loss, risk profiles, including capacity development on data systems management.		100,000.00	100,000.00	2	200,000.00

4	**Strengthen response mechanisms and capacities**					
5.1	Enhance earthquake emergency response action capacities through support with funding, human resources, and logistics.	50,000.00			1	50,000.00
5.2	Develop capacities of the National Emergency Operations Center.		200,000.00		3	200,000.00
5.3	Establish the Herat Emergency Operations Center.		500,000.00		2	500,000.00
5.4	Set up a national/provincial emergency response team, build their capacity to quickly respond to disasters, and support with equipment, personal protective equipment, communication, and allocation of budgets to support their operations.		300,000.00		3	300,000.00
6	**Earthquake hazard risks and vulnerability assessments**					
6.1	Conduct province-wide earthquake risk and vulnerability assessments, develop risk profiles and earthquake hazard/risk maps at a scale usable for decision making at provincial and district levels, including to customize the scope to assess post-event risks and vulnerabilities and what worked and what did not work in the Herat earthquake events and update the Herat Provincial Disaster Management plans through the risk information from this assessment.		400,000.00	400,000.00	2	800,000.00

7	**Build public awareness and engagement of civil society, NGOs and self-help groups**					
7.1	Sensitize and build public awareness and capacities of local communities and population on earthquake risks.	15,000.00	15,000.00		2	30,000.00
7.2	Support/mobilize civil society involvement on DRR and earthquake risk management.	15,000.00	15,000.00		3	30,000.00
8	**Build community resilience**					
8.1	Build community resilience through vulnerability reduction initiatives across population, especially among women, persons with disabilities, youth, farmers, pastoralists, etc.		500,000.00	500,000.00	3	1,000,000.00
8.2	de facto DRR institutions including critical facilities should be made multi-hazard resistant (i.e., rapid structural assessment of all public buildings in Herat, training in earthquake-resistant technology and design, training of local engineers in Herat on earthquake-resistant (re)construction techniques).		100,000.00		2	100,000.00
	TOTAL (US$)	**2,774,120.00**	**3,505,000.00**	**1,400,000.00**		**7,679,120.00**

(*) 1 = highest priority, 5 = lowest priority

The DRR recovery strategy is generally multisector in nature. Aside from engaging the Herat coordination mechanism led by the de facto ANDMA or MRRD, linkages and partnership shall also be made with other relevant local institutions and agencies. The risk and vulnerability assessments will require a multi-disciplinary and multi-agency involvement in the implementation. The support and cooperation of NGOs, self-help groups, and civil society organizations would be critical for implementing a DRR recovery program. The implementation of the sector recovery strategy/plan will utilize existing implementation mechanisms by international development partners in Herat. It will be through a direct implementation modality and will engage responsible parties in Herat. A coordination mechanism will be set up with the concerned de facto DRR institutions, such as ANDMA, RRD, Municipality of Herat, NEPA, and CDC, to maximize their involvement in the implementation of the sector recovery plan.

The realization of the DRR sector recovery vision requires that the full set of the recovery needs identified must be implemented. The implementation will only be possible by making the required resources available. Thus, the DRR sector recovery needs cost should be included in the overall Herat earthquake recovery resource mobilization strategy. Particularly, a DRR sector recovery resource mobilization strategy (or recovery program proposal) should be developed to enable the mobilization of required recovery financing as stipulated in this report. At the outset, as per information from the de facto ANDMA in Herat, the International Organization for Migration (IOM) has committed to provide resources to repair the damaged protection and retaining walls, specifically, 3 protection walls in Injil District, 1 protection wall in Zindajan District, and 2 protection walls in Gulran District.

6. Methodology and Limitations

The sector assessment utilized a combination of qualitative and quantitative tools to inform the sector analysis and arrive at its conclusions. It entailed an extensive desk review of reports, existing national documents, and the humanitarian rapid assessment reports. A DRR sector assessment questionnaire was developed for data collection in Herat. Field visits were conducted by the UNDP team based in Herat to collect the data from key informants from communities and de facto DRR institutions. The data sets collected were subjected to further verification and validation. There was no available data from the private sector domain.

The sector assessment was built from key basic assumptions. Foremost, the analysis presented in the assessment report generally refers to the functioning of the DRR system in the limited context of the earthquake disaster in Herat Province. It does not represent an evaluation of the entire DRR system of the country. The recommendations emerging from the assessment are therefore limited in nature and scope. The estimation of damage, loss, and needs were mostly reliant on the data collected during the field visits as provided by the key informants. The costs of recovery needs related to damage were calculated considering premiums for BBB, climate resilience, inflation, and exchange rate depreciation; a premium of approximately 40 percent is applied to the base cost. Meanwhile, since all the identified recovery needs related to losses were associated with improvements to the DRR system and capacities in Herat, the costing process used the prevailing costing parameters used in planning similar previous or ongoing projects of UNDP and the WB in the country. Such project costs were used for interventions, such as provision of training, support to establishing EOCs, development of early warning systems, development of an information management system, and other elements such as administration and logistics, among others.

Gender

1. Summary

A total of 48,347 households, comprising 275,256 people, were directly affected by the earthquakes that rocked 382 villages situated in the districts of Herat, Injil, Kushk, Zindajan, Gulran, Guzara, Ghoryan, Karukh, and Kohsan in Herat Province.[125] The affected population comprises 142,000 women (52 percent) and 133,000 men. Community-level humanitarian assessments conducted after October 7 estimated that 1,531 women, men, girls, and boys lost their lives because of the earthquakes. Of this number, 383 were women (58 percent of adult casualties)[126] and 874 were children, out of whom 444 were girls. Women and girls represented 54 percent of all casualties and 59 percent of the injured. Women also represented 61 percent of missing persons (296 women out of 487 persons reported missing).[127] In addition, 6,800 women-headed households, representing 14 percent of affected households, and over 17,000 pregnant women (12 percent of affected women) have been affected.

Women have been more affected by the earthquakes in Herat as they are more likely to stay in the house, due to both cultural norms and DFA-imposed restrictions. While men were in many cases working outside at the time of the first earthquake, women who were indoors were critically affected.[128] Women in Afghanistan, Herat Province included, have long faced challenges to their rights and mobility, limiting their benefit to humanitarian and development assistance and their participation in recovery efforts. This chapter aims to highlight the differentiated impact of the earthquakes on women, men, girls, and boys in the affected districts and understand the gender dynamics, which should be taken into account in the recovery phase. The chapter also makes recommendations for all sectors to ensure the engagement of women and girls throughout the recovery phase and ensure their needs are taken into account and responded to.

Prior to the earthquakes, the humanitarian needs of women, men, girls, and boys in Herat were already high, while access to humanitarian assistance continued to be a challenge, specifically for women, with 62 percent mentioning they found it difficult to access assistance. The earthquakes have

worsened the situation in the affected districts in many ways, with women expressing staggering shelter, WASH, and winterization needs as a direct consequence of the earthquakes. Shelter needs have come as a logic consequence of the destruction of many households and have also created further protection needs for women who have had to stay in tents in difficult weather conditions and with limited access to food and services. WASH needs have also increased due to the destruction of some water points by the earthquakes. This has compounded women's challenges in accessing water, with 33 percent of women saying they could only access water points if accompanied prior to the earthquakes.

Women have already been suffering the most from the economic situation, which has been amplified by restrictions on women's work and mobility. The situation has been worsened by the disaster, which has added difficulties to the existing restrictions on women's economic activity. As such, a very limited proportion of businesswomen were able to resume activities after the earthquakes. Regarding health needs, women represented 59 percent of those wounded by the earthquakes. Data reported in this chapter also evidence that women have been identified as to be particularly at risk of trauma caused by the earthquakes. Many women were indoors in their homes when the earthquakes happened and experienced it firsthand. They may also not have received information on earthquake preparedness as easily as men community members. This has generated additional vulnerabilities and stress for women, who thus require long-term psychosocial support.

These needs have been aggravated by women's limited influence in community decision making, including on the distribution of aid and services. Before October 7, women from Herat Province reported that they had some extent of decision making in the household, but limited influence at community level, while many have also highlighted limited attempts of engagement with women and communities as a whole by NGOs and other aid actors.[129] Similarly, a large majority of women (78%) in Herat did not know how to share feedback and report NGO staff misconduct or abuse, showing limited engagement and awareness of NGO and aid actors' activities. Taking women's ability to influence community decision making into account will be critical to rebuild shelters, buildings, and services in a more inclusive way, including through dedicated efforts to engage with women.

2.Background

According to the 2023 Global Gender Gap Index, Afghanistan ranks last globally, registering "the lowest performance across all subindexes, with the exception of the Health and Survival subindex, where it takes the 141st position".[130] Afghanistan's 2023 Global Gender Gap score has decreased by 3 points in comparison with 2022 and Afghanistan is the only country in the world where the educational gender parity score is below the 50 percent mark, at 48.2 percent.[131] In 2021, Afghanistan was ranked 180 out of 191 in both the Human Development Index and the Gender Development Index. This reflects generally low development indicators countrywide, as well as

significant disparities between men and women; for example, estimated gross national income per capita in 2018 was US$533 for women and $3,089 for men, and expected years of schooling was 7.7 for women and 12.7 for men. Globally, Afghanistan has one of the highest prevalence of gender-based violence (GBV) over a woman's lifetime. Other identity markers, such as ethnicity, age, rurality, disability, and displacement intersect with gender to compound vulnerabilities and risks in the Afghan context.

Deeply rooted patriarchal gender norms in Afghanistan have long left women and girls marginalized in Afghan society. These norms entrench decision-making power, control of assets and resources, and social privilege for men. In contrast, Afghan women typically have only limited autonomy and access to financial resources, employment, education, and public and private decision making. These discriminatory gender norms reduce the opportunities and constructive outcomes for women and girls, institutionalizing their immediate and medium- and long-term dependency on men and boys, heightening vulnerabilities and leaving them particularly at risk.

Since the Taliban takeover in August 2021, these pre-existing gender norms have been further entrenched and codified through DFA policies and practices, reversing progress made in the past two decades toward gender equality and women's empowerment. Under the current de facto authorities, women have been prohibited from receiving an education beyond primary level, barred from various types of employment, and banned from many public spaces, including public baths, parks, and gyms.

Herat Province has not been spared the restrictions imposed on women, which have led to an important mental toll on women and girls, e.g., 89 percent of women from the Western Region had already shared that their mental health had become worse in the period April to July 2023. They have also reported a deterioration in their relations with men (family and community members) and also with women from their communities. As reported in country-wide women's consultations, the toll of the current women's rights crisis is fracturing family relationships, with family conflict increasing as a result of the deteriorating mental state of all household members creating an ongoing atmosphere of tension and regular conflict in households.

3. Key Findings

Access to services and assistance

Since the Taliban takeover in August 2021, restrictions put in place by the DFA have directly targeted women and girls, their rights, and their mobility. These have included restrictions to women's movement and access to education above Grade 6, as well as localized restrictions enforced in different ways by provincial and local de facto authorities. The December 22, 2022, and April 4, 2023, bans on women working with I/NGOs and the UN have had a major impact on the delivery of humanitarian assistance and basic human needs support to women. Women and girls in Afghanistan prefer, and are only able to in many cases, to interact with other women because of social and cultural restrictions imposed on them interacting with men outside the family. As such, the bans on women working with NGOs and the UN have created an additional access challenge for women looking to cover their basic needs. This adds to multiple restrictions on women's mobility, mahram requirements, and the need to wear hijab and full face covering, which were imposed by the de facto authorities over the past two years.

Prior to the earthquakes, 20 percent of households in Herat Province mentioned women in their households had been subject to movement restrictions in the past three months,[132] which highlights difficulties facing women to access basic services and meet basic needs. In fact, 62 percent of women in Herat Province mentioned they found it difficult or somewhat difficult to access humanitarian assistance.[133] Although cultural traditions in Herat Province are in many ways less conservative than other provinces of Afghanistan, earthquake-affected women in Focus Group Discussions (FGDs) conducted by UN Women mentioned their preference to interact only with women but that they had not been able to as the assistance, specifically food and NFIs, had been distributed mainly through men to men.[134]

The provision of gender-responsive assistance has also been a challenge due to the difficulties in engaging directly with women, understanding their needs, and the low numbers of Afghan women involved in the response. This is supported by 42 percent of women in Herat mentioning that services provided did not meet their needs.[135] Some studies led by the Gender in Humanitarian Action Working Group (GiHA WG) in Afghanistan have shown challenges to the provision of gender-responsive assistance because of the lack of women's engagement, which have led organizations to providing generic products often not meeting the needs of women (such as reusable pads, napkins, and food for babies, etc.).[136] Prior to the earthquakes, 84 percent of women in Herat said NGOs did not consult directly with women in the community when providing assistance, while 62 percent of women said that even if they wanted to, they would not be able to participate in decision making on aid.[137] Communities generally do not feel they are given this opportunity, which is worsened by the ban on female NGO staff, which further restricts access to women even in cases when humanitarian actors would consult communities on aid.[138]

The lack of access to assistance is often compounded for women-headed households who cannot rely on adult men family members to pick up assistance on their behalf. Earthquake-affected villages in Injil and Herat Districts concentrate almost 70 percent of the aggregate number of affected women-headed households. Injil District emerged as the district bearing the most substantial impact of the earthquakes both in absolute number of individuals (89,317) and number of women-headed households (2,585), which represented 38 percent of all affected women-headed households,[139] and, as such, needs to be prioritized accordingly.

In the WoAA conducted in 2023, 83 percent of women in Herat reported that cash was their preferred way to receive humanitarian assistance, as this would enable them to purchase the products of their choice.[140] This is widely the case across Afghanistan and is also the case for men as affected populations generally prefer to be given agency to purchase the products of their choice rather than receiving products at distribution points. In the context of the earthquakes, households have also mentioned the need for cash assistance, with 93 percent of women heads of household listing cash as an immediate priority need as part of the earthquake humanitarian response As a modality allowing beneficiaries to respond to their own priority needs (including in relation to food, shelter, WASH, health, etc.), cash transfers have proven to also contribute to strengthening women's decision-making capacity, mostly in the domestic sphere.[141]

Women's participation and accountability to affected women

Women in Herat were more likely to have a say in the life of the community than in other provinces in Afghanistan, prior to the earthquakes. The REACH WoAA data from October 2023 show that 24 percent of women surveyed had a say on everything and 47 percent had a say on most aspects of decision making in the household, while 29 percent said they only had a say on food-related

decisions in the household. Nevertheless, at community level and in relation to humanitarian assistance, 39 percent of women said they did not feel NGOs consulted their community to decide when, where, and how to provide aid.[142] Regarding feedback mechanisms, 86 percent of women in Herat did not know how to report NGO staff misconduct or abuse.[143] Yet, women in Herat Province mentioned that they would be comfortable sharing feedback through community groups (47 percent), via women staff and organizations' complaint boxes (36 percent), via phone (29 percent) and face to face (28 percent). Women were less likely to mention community committees and shuras (19 percent) as well as help desks (4 percent) and loudspeaker (1 percent), meaning these may be less likely to reach women.

While 77 percent of women in Herat Province said they could independently access a phone, 87 percent did not feel informed about humanitarian assistance prior to the earthquakes (ground tracking system), and 63 percent did not know how and where to register for aid. Out of the 23 percent women in Herat Province who could not access a phone, 72 percent mentioned they did not know how to use it and 22 percent said a phone was available but their access was restricted.[144] While the majority of women from affected districts consulted during the FGDs mentioned they did not know about Awaaz, an inter-agency humanitarian helpline, 378 calls were placed by women from Herat Province to Awaaz in October 2023 (representing 41 percent of all calls placed to Awaaz that month). In comparison, in October 2022, 47 percent of calls handled by Awaaz were placed by women from Herat (252 calls), who mainly requested cash assistance (42 percent), while 6 percent of women callers requested shelter, and 33 percent reported issues with shelter status or conditions.[145]

Education

In 2022, Herat Province recorded the second highest number of out-of-school children. This was due to schools reported to be closed, destroyed, or occupied for an average of 175 days over a six-month period[146] and not to the population's willingness to deprioritize education. Prior to the earthquakes, 56 percent of households in Herat mentioned education of girls as very important and 28 percent mentioned that they would like to obtain information on education services.[147] Lack of school attendance may have also been due to restrictions on girls' education, which have drastically impacted adolescent girls' access to education. While some girls have been able to continue their education through attending lower classes or trainings dedicated to adolescent girls (such as English or IT thematic classes), most girls above Grade 6 have not been able to continue their education.

Access to educational opportunities for girls is likely to be further restricted in villages affected by the earthquakes. An estimated 89 girls' schools, 77,500 girls, and 700 female teachers have been affected by the earthquakes in the nine most affected districts of Herat Province. Nine girls' schools were completely destroyed (2 in Gulran, 3 in Zindajan and 4 in Injil) and 73 were partially damaged. The earthquakes directly affected access to safe drinking water to another seven girls' schools. In addition, damages to latrines were reported in 41 girls' schools in the nine most affected districts and 57 did not have a handwashing station available.[148]

Engagement with communities in the context of the earthquake recovery could be used as an opportunity to engage with adolescent girls and provide education services to this population, including through using other spaces such as safe spaces for women and adolescent girls.

Shelter

The devastation caused by the earthquakes has been substantial, with 13,516 houses completely destroyed, 18,434 houses severely damaged, and 17,628 houses moderately damaged. As a result, a significant portion of the affected population, approximately 37,139 households, are now forced to live in makeshift tents and open spaces, while 1,268 households reside in informal settlements, and another 8,801 households have resorted to tent shelters as temporary solutions.[149]

Among the 37,139 households currently forced to reside in open spaces, 10,242 of these households are from Injil, 8,233 from Herat, and 5,295 from Zindajan.[150] In Qafaslan Village in Injil District, 20 percent of women-headed households reported that their home was severely damaged by the earthquakes and 60 percent shared that the damage to their homes after the earthquakes was moderate.

Living in open spaces and makeshift shelters create many protection concerns for women. Two gender alerts by the GiHA WG on earthquake-related risks for women were linked to close proximity with all family members as well as stress linked to the emergency situation, which could lead to protection and GBV risks.[151]

Due to their lack of involvement in humanitarian and recovery decision making, women in Afghanistan are often not able to contribute to decisions on shelter design, as evidenced in previous earthquakes in Paktika and Khost. Women's engagement is key for inclusive shelter design as they spend a lot of time inside the home and are the most impacted by the loss of shelter and decisions around their reconstruction.

Food security and livelihoods

Food security remains the first concern for Afghan households across the country. In Herat, prior to the earthquakes, 97 percent of households mentioned food as the first need.[152] For most households, prior to the earthquakes, the biggest access barrier to food was the price of food.[153] Another barrier was women's limited access to the market due to restrictions imposed on their mobility and their rights. Prior to the earthquakes, 34 percent of women in Herat Province said they could access the market alone, but 50 percent needed to be accompanied (by a mahram or male guardian),[154] while 15 percent could not access the market at all.[155]

In addition, livelihood opportunities remain extremely limited for women. In 2022, 86 percent of women in Herat Province were unemployed and 8 percent partially employed.[156] In May 2022, 737 women-owned businesses in Herat Province indicated that women entrepreneurs were involved in garments and clothing (tailoring), food production and processing, handicrafts, and livestock. Post-August 2021, 43 percent of respondents countrywide reported closing their shops for fear of the DFA and restrictions on women's mobility. It was reported that 7 percent had closed their businesses before August 2021, whereas 37 percent did not close their shops during the takeover, mostly in Bamiyan and Herat, while 8 percent started new businesses after August 2021.[157]

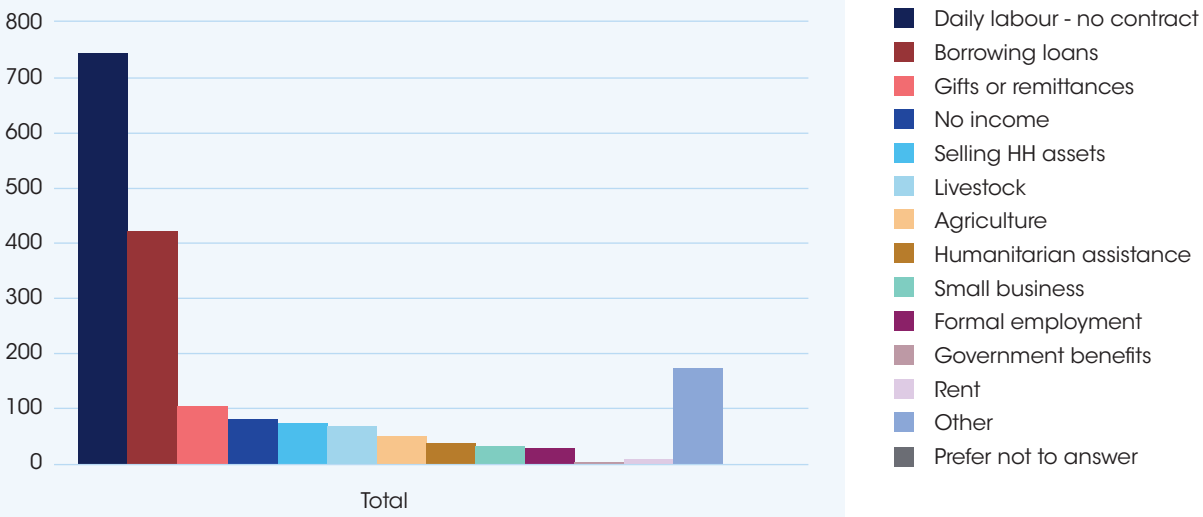
The earthquakes have further impacted the livelihoods and access to food of the affected households. In the earthquake-affected areas, the main livelihoods of many households were their cattle and other animals, which are used for milk and other products. The earthquakes have impacted the cattle with many animals dying due to the shocks. Moreover, an important entry point for the availability of food for many in the community was the joint cooking space and

common oven, which were available in the villages. The earthquakes destroyed many of these spaces. In FGDs held, women have mentioned that it was not possible to make bread for their households because village ovens have been destroyed. This was a widespread concern in all villages where FGDs were held. Common oven and cooking spaces are also one of the few places where joint activities can be carried out by women and where they are able to interact with other women. As such, their destruction is also of great concern for the social fabric of the community and women's mental health. Women mentioned the reconstruction of these spaces as a top priority for recovery actors to consider. Moreover, women stated in various discussions the absence of cooking utensils that have been buried under the rubble. The provision of these cooking tools will be essential for community recovery and to ensure food security.

In the aftermath of the earthquakes in Herat, estimates show that 60 percent to 70 percent of women-owned businesses have been affected.[158] The situation is particularly dire in districts such as Zindajan, Ghoryan, Gulran, Injil, and Karokh, where women have been hit the hardest. Only around 10 percent have been able to resume their business. The probable reasons for women facing greater challenges than men restarting their businesses after the earthquake could include societal constraints and gender-based limitations. Because of restrictions on mobility, women had been running businesses from inside their homes and have lost assets in the wreckage of their homes.[159] Women have therefore been unable to continue their business operations. Women often encounter more significant social barriers and restrictions within various levels of society and family, making it considerably harder for them to reinitiate businesses. Their limited financial resources compared to men might also extend the time needed for them to resume work. The earthquakes' impact appears to have disproportionately affected women in business, amplifying the difficulties they face in re-establishing their economic activities. The AWCCI in Herat has also mentioned the psychological impact of the earthquakes on women entrepreneurs, compounded by their inability to restart their work. The need for financial support—cash, procurement of necessary tools—for the restart phase was also highlighted.

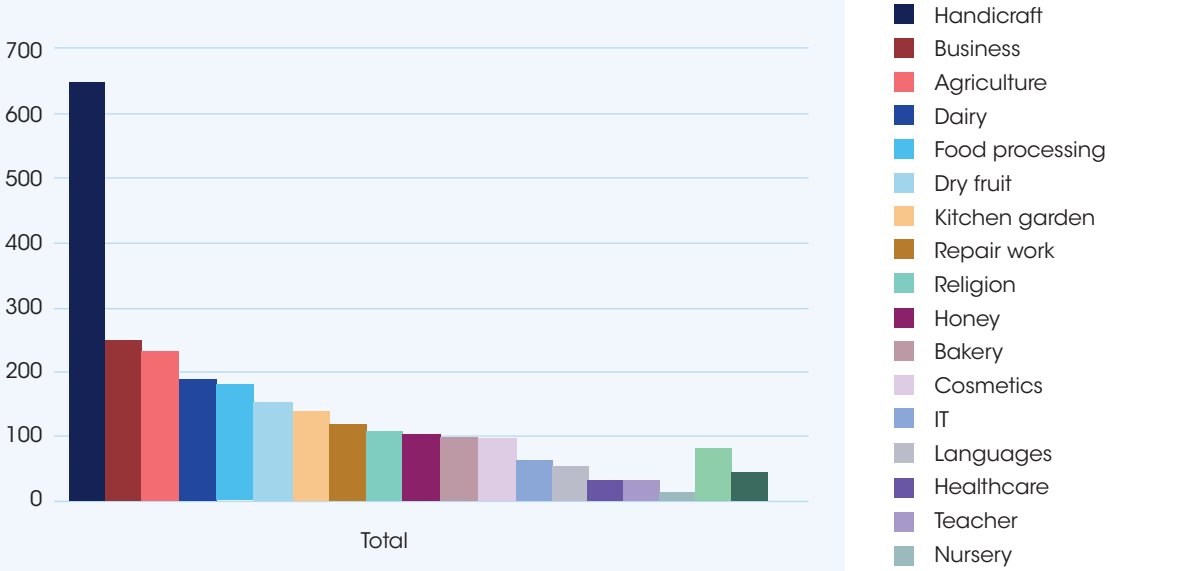
In Qafaslan Village, over 70 percent of women-headed households included informal daily labor as one of their main sources of income since the earthquakes, followed by loans (40 percent) and gifts and remittances (10 percent)(figure 12). This shows that the economic situation of women-headed households in this village of Injil District is highly fragile. To address this additional factor of vulnerability, women expressed interest in livelihood opportunities, primarily on handicraft, business, and agriculture trainings(figure 13).[160]

Figure 13: Sources of Income of Women-Headed Households in Qafaslan Village, Injil District



Source: UN Women data, November 2023

Figure 14: Livelihood Training Needs for Women-Headed Households in Qafaslan Village, Injil District



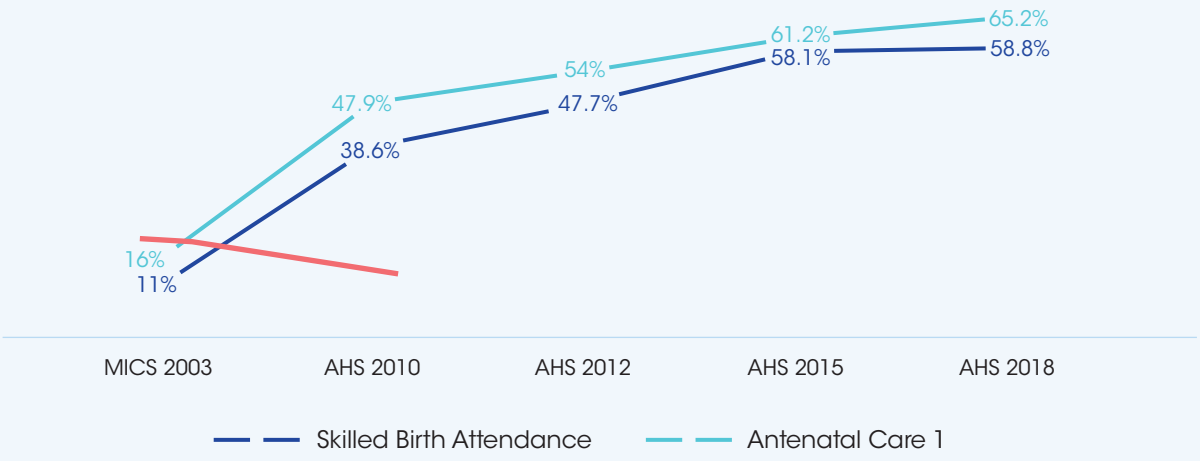
Source: UN Women data, November 2023

Health

Even with Afghanistan's advancements over the past decade, notably the significant growth of its Basic Package of Health Services, the country continues to grapple with providing universal access to crucial health services for all its citizens, particularly women and newborns. Afghanistan has one of the highest maternal mortality rates in the world. Prior to October 7, 66 percent of women in Herat Province reported they can access health centers but only if accompanied by a mahram, while 32 percent can access these health centers alone. The remaining 2 percent could not access health centers. For those who could not access, the cost of medicine (42 percent), cultural limitations (27 percent), and the absence of women staff (20 percent) or of a mahram (10 percent) were the main barriers.[161]

With a maternal mortality ratio of 620 deaths per 100,000 live births, the country registers the highest ratio in the region. Antenatal care for pregnant women stands at a mere 58 percent, while just 48 percent of deliveries benefit from the presence of a skilled birth attendant. The contraceptive prevalence rate for modern methods remains low at 19.8 percent, contributing to a high total fertility rate of 5.3 children per woman, significantly exceeding the desired fertility rate of less than 3 children per woman. Additionally, there is a substantial unmet need for family planning, estimated at 25 percent.

Figure 15: Trend of Maternal Health Indicators, 2003–18



The Afghanistan 2018 Health Survey highlights a significant enhancement in maternal health. Indicators since 2003 show both skilled birth attendance and antenatal care have shown remarkable growth over 15 years (figure 14). Skilled birth attendance surged from 11 percent in 2003 to 58.8 percent in 2018, while antenatal care rose from 16 percent to 65.2 percent in the same period. There are 360 Family Health Houses run by community midwives in remote communities.

In the latter part of 2009, the Family Health House model was piloted to improve access to essential reproductive, maternal, newborn, child, and adolescent health services in underserved areas, ultimately reducing morbidity and mortality rates. Family Health Houses were introduced

in white areas[162] of Herat Province. From January 2022 to August 2023, these UNFPA-supported health facilities benefitted 24,561 pregnant women with antenatal care services and 12,331 women with postnatal services. Moreover, 6,097 safe deliveries were assisted through skilled birth attendance. In addition to this, 35,213 beneficiaries were reached with family planning information and counseling, while 20,984 received family planning services. The significant numbers across antenatal care, postnatal care, safe deliveries, and family planning services reflect a proactive approach to address maternal health and family planning needs in the community.

Gender-based violence

Individuals impacted by crises—men, women, boys, and girls—encounter diverse protection risks. Recognizing the specific risks related to age and gender is vital in preventing harm and enabling effective protection measures. It is important to note that while violence is not exclusively based on an individual's age and gender, these factors significantly influence the risks of violence and the way in which the violence is perceived and experienced.

Statistics indicate that over half of Afghan women face violence from their spouses. The 2015 Afghanistan Demographic Health Survey highlighted that a staggering 52 percent of ever-married women have been subjected to spousal violence. Survey data also highlighted that 53 percent of Afghan women experienced physical violence beginning at the age of 18. While there are no recent data on violence against women, but given the closure of response architecture (e.g., shelters), the shrinking of referral services and justice mechanisms to address GBV, and that women are restricted inside their homes under multiple levels of stress, it is safe to assume that there is steep rise in risks and incidences of GBV and violence against women.

Child protection concerns are also on the rise in Afghanistan with child labor (often boys) and early marriage of daughters being used as extreme coping mechanisms by households who cannot sustain the needs of all their members.[163] Prior to the earthquakes, Herat Province showed the highest proportion (52.2 percent) of women aged 20 to 49 years who were first married before age 18 across the country.[164] While data are lacking specifically on the earthquakes' impacts on child marriage, research on child marriage in humanitarian settings stress that affected adolescents and parents may seek early marriage of daughters for more reliable food, shelter, and physical safety, and that economic losses may drive some households to marry off daughters after disasters to decrease household costs.[165] Loss of parents and lower educational levels are also linked to higher rates of early marriage of daughters.[166]

Women's mental health and well-being

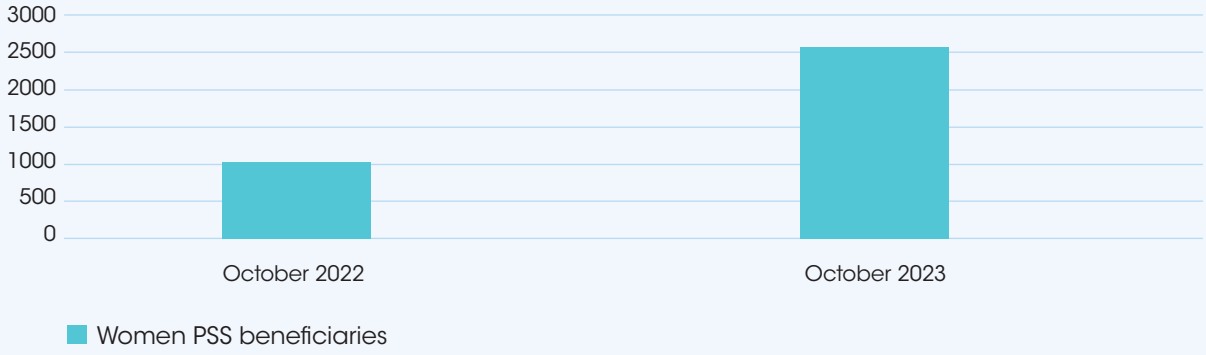
Amid the crisis, all Afghan people are facing increased needs for lifesaving humanitarian and protection services. The uncertainty of the legal frameworks and institutional resources for protection of women and girls coupled with compounding food and economic insecurity, including a lack of cash and savings, is escalating the risks of harmful practices and negative coping strategies, putting women and girls in earthquake-affected areas and displacement sites at high risk.

Mental health has emerged as critical concern for Afghan women and girls since the Taliban takeover in August 2021 due to restrictions on their rights, isolation, and lack of hope for the

future.[167] The situation has worsened in the absence of dedicated mental health facilities and the overall collapse of the health system in country. In Herat, prior to the earthquakes, 68 percent of household heads mentioned that women and girls in the household had shown signs of excessive worry and no hope for the future,[168] 51 percent mentioned excessive sad mood or crying, and 36 percent mentioned decrease in appetite or sleeping patterns. Worryingly, almost the totality (97 percent) of households in Herat Province mentioned at least one of the women in the household showed signs of behavior change. The earthquake has worsened mental health outcomes for women in affected villages.

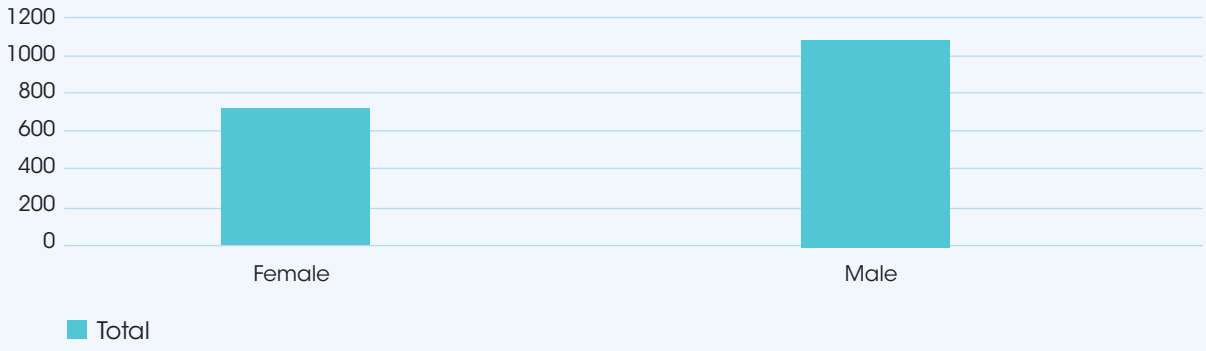
In Qafaslan village, 78 percent of households who were surveyed shared that their family members displayed behavioral changes (such as sleeping issues, nightmares, increased aggression, withdrawn behavior/isolation, difficulty in concentrating/feeling tired, clinging behavior, or drug addiction) since October 7. Further, 72 percent of these households perceived that their female family members have been most affected by these behavioral changes.

Figure 16: Women Beneficiaries Receiving UNFPA-supported Psychosocial Support Services



Source: UNFPA data, November 2023

Figure 17: Number of Families Reporting Behavioral Change in Female Family Members After the Earthquakes in Qafaslan Village, Injil District, by Sex of Head of Household



Source: UN Women data, November 2023

Data show a significant increase in the number of women seeking psychosocial support services, with a notable surge of approximately 149 percent in female individuals seeking psychological support after the earthquakes compared to the previous year.[169]

Many women have lost family members as well as their belongings and are in the impossible situation of rebuilding their lives, given the lack of livelihoods, financial support, and restrictions imposed on them. Women who have lost male family members and have become head of household risk also facing challenges in raising their voices, concerns, and in accessing assistance. Comprehensive interventions that consider women's mental health and provide psychosocial support as well as safe spaces for women to interact among themselves are critical for improving their mental health and for social cohesion in affected communities.

In Herat, humanitarian actors have been able to provide lifesaving assistance tailored to the specific needs of women and girls, with a focus on their mental well-being and psychosocial support, including referrals to appropriate medical services, utilizing the health exemption for women NGO staff. It is however important to note that on November 13, 2023, the de facto MoPH issued a directive severely restricting MHPSS and women-friendly health spaces, as well as public awareness on health issues.

WASH

Prior to the earthquakes, 46 percent of women in men-headed households said they could access the primary water source on their own and 33 percent reported they could access if accompanied, while 21 percent said they could not access the primary water point at all.[170] For those who could not access, 29 percent said that water points were too difficult or too far to be reached, 20 percent mentioned an insufficient number of water points and a long wait at waterpoints, and 9 percent said it was socially unacceptable to go to water points. As some WASH facilities have been destroyed by the earthquakes, gender alerts by GiHA WG have also underlined protection concerns for women who have shared in FGDs that they need to go outside of the community to bathe or go to the bathroom.

In Qafaslan, two-thirds of households reported that women are most frequently responsible to collect water and the same proportion of households (regardless of whether they are headed by men or women) reported challenges to access water.[171]

Hygiene management

In situations of earthquakes and other disasters, women and girls also experience challenges to hygiene and menstrual hygiene management. In Herat, women's limited access to water points can directly contribute to barriers in managing menstrual hygiene. In Herat Province, 58 percent of women mentioned reusable pads as their preferred option for menstrual hygiene management. Disposable cloths came second at 23 percent. FGDs with women following the earthquakes have highlighted the lack of dedicated NFIs for women, such as dignity kits containing menstrual hygiene items, linked to the provision of adequate bathing and toilet facilities. Taking into account these preferences when providing recovery services will be key for comprehensive hygiene management strategies for women.

4. Key Recommendations for Recovery Actors

Women's participation in recovery efforts:

- Continue advocating with the DFA at all levels on the importance of engaging women in the reconstruction efforts, starting with engagement of women in planning and assessments. To do so, build on the successful efforts undertaken by humanitarian actors to secure women's participation in the response.

- Mobilize women staff throughout all interventions. This may entail actors to put in place gender-responsive policies that enable the recruitment and retention of women staff, and enable women staff to travel to the field (mahram policy, childcare incentives, etc.

- Involve women from affected communities in all recovery efforts by ensuring they can contribute to the design, implementation, and monitoring of recovery activities. In doing so, consider involving women community volunteers to gather women's inputs and feedback.

Livelihoods and economic recovery:

- Undertake dedicated activities that aim to advance women's economic empowerment, for instance livelihood training, handicrafts, agriculture training.

- Mobilize women-owned businesses in planning recovery and reconstruction efforts, including through procuring directly from these businesses.

- Prioritize infrastructures that women require to reclaim their roles within communities (through for instance, making bread using the common bread ovens, community kitchens).

- Where possible, undertake cash interventions targeting women to ensure they are able to purchase the items they need and prefer.

Education:

- Use recovery efforts as an entry point to engage with communities on education-related opportunities for girls and women, for instance by providing education opportunities for adolescent girls together with other services (for example, safe spaces, livelihood spaces).

- Ensure the adequate participation of women teachers.

- Ensure adequate WASH facilities are in place in schools to ensure girls' attendance.

Shelter and WASH infrastructure:

- Ensure that all infrastructures being rebuilt take into consideration restrictions to women's mobility and barriers to access public spaces. This could include creating separate spaces/entrances for women in public infrastructures as well as take into account the distance of WASH facilities and water points from their homes.

- As women spend a lot of their time indoors, consult with women on the design of private infrastructures and shelters to understand their specific needs to help prevent protection risks. To do so, invest in FGDs with women and ensure a high participation of women staff across the shelter rebuilding response.

- Use the rebuilding of infrastructures as a way to involve women: women mention that they are ready to be involved in supporting their male relatives in rebuilding shelters through preparing cement, handing bricks, etc.

- Ensure dedicated explanation sessions for women on the new shelter design and shelter resistance to earthquakes, so that women feel reassured and safe in their shelters.

5. Methodology and Limitations

This chapter focuses on gender trends in Herat Province prior to the earthquakes and the gender impacts of the earthquakes. It is based on secondary data collected by humanitarian actors including the GiHA WG prior to the earthquakes and was complemented with the findings of assessments undertaken to evaluate the impact of the earthquakes (including the MSRAF conducted in October 2023). Other primary data also include qualitative data collected by the GiHA WG in the Western Region through more than 15 FGDs with affected women and girls, as well as a quantitative survey commissioned by UN Women in Qafaslan Village in Injil District, where more than 2,500 households were surveyed, out of which over 1,000 were headed by women.

Data limitations include the absence of extensive and comprehensive household-level data collected at the time this chapter is being written. The MSRAF focuses on community-level data, which is often provided by community leaders who are primarily men. To minimize the impact of the lack of data, qualitative data were collected through FGDs with affected communities, in particular women and girls. Preliminary data collected after the earthquakes are further often lacking sex disaggregation. Some primary quantitative data, collected in one affected community by UN Women has been included here, however, the data are not representative of all communities affected by the earthquakes and should be considered accordingly.

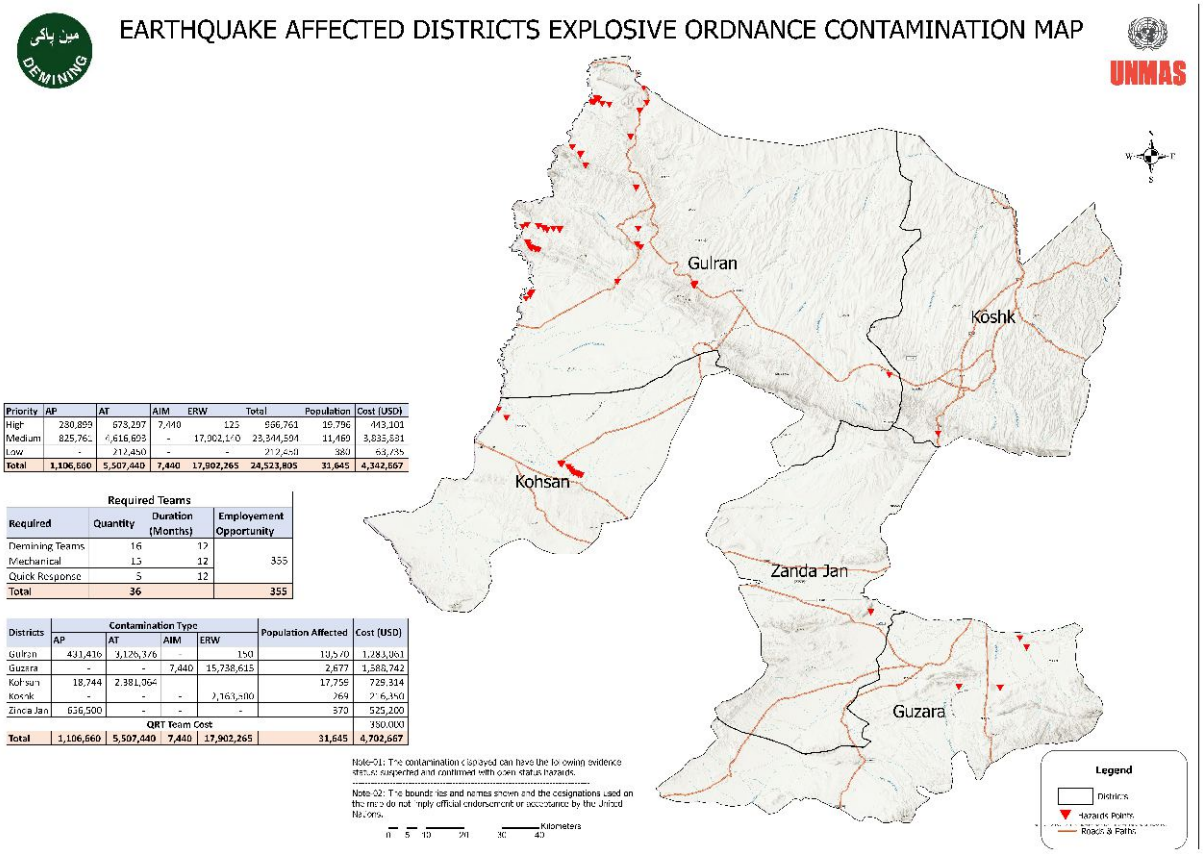
Mine Action

1. Summary

There is a total of 64 explosive ordnance (EO) recorded hazards located in five of the districts affected by the earthquakes in Herat Province, occupying an estimated area of 24.5 square km. These hazards are affecting 31,645 people who are living in a 1 km radius of these hazards. In addition to risking the lives of people, these hazards are also blocking 2.2 square km of agricultural land, nearly 1 square km of irrigation canals, with the remaining areas blocking land for grazing/pasture. Map 8 provides the location of contamination in each of the earthquake-affected districts. Displacement due to the earthquakes has further exacerbated the affected population's, increasing existing vulnerabilities. US$4.7 million is required to conduct a fresh survey and clear these hazards.

A comprehensive mine action project would combine surveys, clearance operations, and explosive ordnance risk education to safeguard residents from the risks of EO. The project's goal is to restore contaminated land to its full productive potential. Furthermore, this initiative would be a catalyst for local development, creating meaningful employment opportunities for 255 individuals. Notably, priority will be given to recruiting members of communities directly impacted by the EO, equipping them with the necessary technical training before assigning them with the critical task of demining.

Map 8: Explosive Ordinance Contamination in Earthquake-affected Districts



Priority	AP	AT	AIM	ERW	Total	Population	Cost (USD)
High	280,899	673,297	7,440	125	956,761	19,796	443,101
Medium	825,761	4,616,603	-	17,902,140	23,344,504	11,469	3,833,881
Low	-	217,450	-	-	217,450	380	65,685
Total	**1,106,660**	**5,507,440**	**7,440**	**17,902,265**	**24,523,805**	**31,645**	**4,342,667**

Required Teams

Required	Quantity	Duration (Months)	Employement Opportunity
Demining Teams	16	12	
Mechanical	15	12	355
Quick Response	5	12	
Total	**36**		**355**

Districts	Contamination Type				Population Affected	Cost (USD)
	AP	AT	AIM	ERW		
Gulran	431,416	3,126,376	-	150	10,570	1,283,961
Guzara	-	-	7,440	15,738,615	2,677	1,588,742
Kohsan	18,744	2,381,064			17,759	729,314
Koshk	-	-	-	2,163,500	269	216,350
Zinda Jan	636,500	-	-	-	370	525,200
QRT Team Cost						350,000
Total	**1,106,660**	**5,507,440**	**7,440**	**17,902,265**	**31,645**	**4,702,667**

Source: United Nations Mine Action Service (November 2023)

2. Pre-Earthquakes Context and Baseline

Of the nine districts affected by the earthquakes, five districts (Gulran, Guzara, Kohsan, Kushk, and Zindajan) were determined to be most contaminated by EO. As of December 18, 2023, 575 civilian casualties had been recorded. No EO civilian casualty has been reported since the earthquakes occurred, however, the possibility of EO incidents cannot be ruled out, especially due to the current economic conditions in which men and children collect scrap metal to support their families.

Table 86: Explosive Ordnance Contamination Area, Affected Population and Casualties, and Estimated Cost to Survey and Clear in Five Districts

District	EO Contaminated Area (sq kilo meters)	Affected Population	Cost Required (US$)	EO civilian casualties	Remarks
Gulran	3.6	10,570	1,283,061	64	
Guzara	15.7	2,677	1,588,742	111	
Kohsan	2.4	17,759	729,314	184	
Kushk	2.2	269	216,350	110	
Zindajan	0.6	370	525,200	106	
All 5 District			360,000		5 Quick Response Teams[172] to conduct a fresh survey of all 9 earthquake-affected districts
Total	**24.5**	**31,645**	**4,702,667**	**575**	

Source: Information Management System for Mine Action (IMSMA)

Table 86 shows that Guzara is the most affected district with an estimated area of 15.7 square km of contamination. It is critical to note that these numbers encompass only known and recorded hazards. There is a possibility that listed hazards may have changed in some of the areas due to the earthquakes and the presence of returnees. Additional contamination might have also occurred due to conflicts leading to the regime change on August 15, 2021. Some areas remain to be surveyed and therefore some hazards may not yet been identified. A new survey is required to establish the full extent of the contamination.

3. Assessment of Disaster Effects: Damage and Loss Estimates

Table 87 provides a list of districts and villages that are affected by the presence of EO. The United Nations Mine Action Service (UNMAS) must be consulted prior to development projects being planned or implemented in these areas to ascertain the presence of contamination.

Table 87: Districts and Villages Affected by the Presence of Explosive Ordnance

District	Villages, Affected by EO	Remarks
Gulran	Sim Koh, Shorawak, Qashuri Bala, Kareyz-e-Elyas, Kandak Kakari, Kamana, Kalta Kay, Kal Muchak, Dahan-i-Shor, Chakaw, Chah Galgal Sufla, Cahar Del, Burj Dahan-e-Zul Feqar, Chah Makan	
Guzara	Kart, Posht Kuh, Chalonkai	
Kohsan	Sar-i-Raig, Prozha, Kalar, Jaghati	
Kushk	Rabat-i-Mirza	
Zindajan	Puza-i-Kaftar Khan	

Source: Information Management System for Mine Action (IMSMA)

4. Linking the Effects to the Human Impact

Thousands of the earthquake-affected population in Herat Province could be resettled in different parts of the province, including the areas containing EO contamination. The threat of explosive hazards and mine action should be ensured as an integral consideration in the planning and budgeting of all projects across sectors. It is important to confirm the requirement for survey and clearance operations in these five districts, in order to reduce the risk of civilian casualties, enable safe humanitarian and basic human needs assistance, and allow for the restoration of livelihoods.

5. Recovery Needs and Strategy

To determine the level of contamination in the nine earthquake-affected districts, approximately US$360,000 is required to conduct a fresh mine action survey. In addition, approximately US$4.3 million is required to clear the recorded hazards in the districts. The project will release land and provide employment opportunities for 355 people for 12 months. Survey and clearance operations will enable the safe expansion of broader humanitarian assistance. The clearance of hazards will open up land for housing, agriculture, and other activities. It will also improve access to health facilities and schools and enable the restoration of livelihoods in the province. It is critical to give due consideration to mine action as a fundamental element of all activity implementation. Table 88 provides a breakdown of cost.

Table 88: Survey and Clearance of Explosive Ordnance and Estimated Cost and Employment Opportunity in Nine Earthquake-Affected Districts

Required Activity	Quantity	Months	Cost (US$)	Employment Opportunity
Demining Teams	16	12	2,592,000	355
Mechanical	15	12	1,750,667	
Quick Response	5	12	360,000	
Total	**36**		**4,702,667**	**355**

The demining would be conducted by the accredited partners in the country including Afghan Consultants Demining and Development Organization (ACDDO), Agency for Rehabilitation and Energy Conservation (AREA), Afghan Technical Consultants (ATC), Demining Agency for Afghanistan (DAFA), Danish Refugee Council (DRC), Hazardous Area Life-support Organization (HALO) Trust, Humanitarian Assistance and Mines Removal Organization (HAMRO), Justice And Peace in Afghanistan Organization (JAPO), Mine Clearance Planning Agency (MCPA), Mine Detection and Dog Centers (MDC), Organization for Mine Clearance and Afghan Rehabilitation (OMAR), Organization for Sustainable Development and Research of Afghanistan (OSDRA) under the overall leadership of UNMAS and the Mine Action Sub-Cluster.

6. Methodology and Limitations

The EO contamination data is derived from the centralized national mine action database (Information Management System for Mine Action). The survey of the explosive hazards is out of date for many districts and a fresh survey is needed to identify the current level of contamination. The costs have been calculated based on the standard mine action costs for the proposed activities.

Snapshot of the PDNA Process and Methodology

The assessment used the PDNA methodology jointly developed by the United Nations Development Group, the EU, and the WB. The PDNA focused on the disaster-affected areas and examined the damage and losses related to the earthquakes and identified resilient recovery needs. The PDNA relied as a reference on the World Bank's Global Rapid Post-Disaster Damage Estimation (GRADE) that estimated direct physical damage to buildings and infrastructure at US$314 million (~2.2 percent of the 2021 GDP). GRADE has centered on physical damage, relying on earthquake damage modeling and exposure analysis. The PDNA also made reference to the Herat Earthquakes Multi-Sectoral Rapid Assessment Form developed by the HCT for preliminary disaster effects and impacts. The Herat PDNA complements the Emergency Response Plan consolidated by OCHA on behalf of the HCT and partners to address immediate humanitarian needs from October 2023 to March 2024 as a result of the earthquakes.

The PDNA is built on a sector-by-sector analysis undertaken in the most affected sectors in accordance with the coordination structure established by the leading agency, with support from partners. The PDNA provides sectoral assessments of damage, losses, and needs through the data collected and triangulation tools. It was largely conducted remotely, relying primarily on humanitarian assessments as well as satellite imagery, publicly available information, social media analytics, and existing databases (e.g., Information Management System for Mine Action), corroborated and validated by other sources and means, including remote-sensing analytics and data from partners, field visits, and discussion with affected groups. The PDNA is not a substitute for in-depth sector-specific assessments of affected areas. Wherever possible, the sector teams triangulated the data available and provided realistic and credible estimates.

The different sectors have elaborated the respective methodology used in the sector assessments and highlighted the limitations. Aside from the data collection and triangulations tools used, the following are notable parallels across the sectors' methodology and tools: use of household surveys, key informant interviews, data available on open street maps, field visits, stakeholder consultation, and use of sector-specific interview guide questionnaires. For earthquake-affected areas that were either inaccessible or unvisited due to time constraints, the analysis was based on extrapolation of data. Moreover, all the sectors also used the following three damage categories and definitions in the damage estimations: (i) Major means fully/totally damaged = structural damage or total collapse; requires reconstruction >60 percent; (ii) Moderate means partially/moderately damaged = damage to walls and roof, but structure intact; repairable 20 percent–60 percent; and (iii) Minor means slightly damaged = minor surface damage, easily repairable (e.g., paint, windows) <20 percent.

Disasters often restrain the normal functioning of governance structures. These limitations become more apparent in the context of Afghanistan where direct engagements and/or coordination with the governance apparatus are limited. Thus, a range of limitations confronted the assessments of the different sectors, most significantly that the damage and loss may be underestimated or overestimated due to limited time and the absence of detailed engineering assessments. The limitations include estimation mainly done by non-technical field staff (mostly from implementing NGO partners); unavailability of data from the private sector; limited engagement with provincial de facto authorities due to the current political situation; mostly out-of- date baseline data; time constraints for the assessment and the ground situation that did not allow for large-scale field validation; reliance on out-of-date baseline data; limited field visits that were time constrained and restricted in movement; and preliminary data collected after the earthquakes often were not sex disaggregated.

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[9] In the absence of an updated census, reliable disaggregate data on the population's ethnic composition in Herat Province remains limited.
[10]GRADE Report, October 2023.
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[43]Estimated population by the de facto National Statistic Information Authority 2023-24.
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[45]Monitoring Health and Health System Performance in the Eastern Mediterranean Region 2023.
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[48]National Health Account Report 2021.
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[78]Herat branch Afghanistan Women's Chamber of Commerce and Industry data. November 2023.
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[80]The total sum matches the amount required for damage recovery and loss recovery and the damage and loss recovery of big businesses, which is very minor (6,863,000+11,156,000-168,0.0).
[81]Up to 10 percent of the damage recovery is associated with demolition and ruble removal costs. The amount of 6,863,000 doesn't include the damage recovery of big businesses, which are estimated in the amount of US$ 168,000. IPSOS confirmed that big businesses remained intact with the heavy loss of disaster taken by small entities.
[82]It is expected that at least 5,000 MSMEs will benefit from the scheme with grants ranging from US$ 1,000 for micro businesses up to US$ 10,000 to medium enterprises to partially cover the losses and restore the working capital.
[83]A tangible piece of property, plant, machinery, or equipment that businesses own and use directly or indirectly to generate value added.
[84]OECD/ILO. 2019. *Tackling Vulnerability in the Informal Economy,* Development Centre Studies, OECD Publishing, Paris, https://doi.org/10.1787/939b7bcd-en, retrieved from https://www.oecd.org/publications/tackling-vulnerability-in-the-informal-economy-939b7bcd-en.htm.
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[87]Multiple Indicators Cluster Survey (MICS) 2022 -2023.
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[172]The quick response teams (QRT) are cross-trained teams that conduct survey, remove spot explosive remnants of war (ERW), provide explosive ordnance risk education and also clears small hazardous areas.


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