

Abraham Ename Minko

Ph.D. Candidate in Political Science and International Relations. Istanbul University.

Turkiye

Email: abrahamminko@gmail.com

DOI: <https://doi.org/10.37458/ssj.5.3.2>

Research Paper

Received: August 9

Accepted: December 4

ADDRESSING HEALTH CHALLENGES AMIDST CYCLES OF NATURAL DISASTERS IN AFGHANISTAN

Abstract: *Afghanistan, located in South Asia, grapples with significant health challenges worsened by recurring natural disasters. The country's health system is hampered by limited healthcare access, poor infrastructure, and a shortage of trained professionals, all exacerbated by decades of conflict and political instability. This leads to widespread preventable diseases, high maternal mortality, and malnutrition. Socio-economic disparities, poverty, and displacement further increase health inequities and vulnerability to disasters. Afghanistan faces various natural disasters like earthquakes, floods, droughts, and avalanches, which worsen public health conditions and disrupt healthcare access. Recent events, such as the 2020 floods, 2021 drought, and 2023 earthquake, have had catastrophic impacts, displacing thousands and damaging homes and health services. This interplay between health vulnerabilities and natural disasters creates a cycle of adversity. Addressing these issues requires a comprehensive strategy integrating disaster preparedness, emergency response, and health system strengthening. Building resilience, improving early warning systems, and enhancing healthcare access in disaster-prone areas is crucial. International collaboration and support from donor countries, organizations, and agencies are vital for providing technical, financial, and logistical assistance. Effective coordination and sustainable aid delivery remain challenging in Afghanistan's complex socio-political context.*

Keywords: *Health, Challenges, Afghanistan, natural disasters, political, landscape.*

Introduction

Afghanistan, a nation scarred by decades of conflict, political instability, and natural disasters, grapples with a multitude of health challenges that are exacerbated by recurrent cycles of calamity. Situated in a region prone to seismic activity, flooding, droughts, and avalanches, Afghanistan faces a precarious health landscape characterized by limited access to healthcare services, pervasive socio-economic disparities, and fragile healthcare infrastructure. Against this backdrop, understanding the intersection of health vulnerabilities and the impact of natural disasters is paramount to comprehensively addressing the health needs of Afghanistan's population (Kitanović, 2020).

Decades of conflict and political turmoil have taken a profound toll on Afghanistan's healthcare system, leaving it ill-equipped to meet the needs of its population. The disruption of healthcare services, displacement of healthcare workers, and damage to healthcare facilities have undermined access to essential healthcare services, particularly in conflict-affected areas. Moreover, the protracted conflict has fueled widespread poverty, malnutrition, and displacement, exacerbating health inequities and compounding vulnerability to disease outbreaks and natural disasters (Haerens et al., 2013).

Natural disasters, ranging from earthquakes to floods, pose significant risks to public health in Afghanistan, amplifying existing vulnerabilities and further straining the country's already fragile healthcare system (Favor, 2011). The devastating floods in 2020, which affected over 300,000 people across 14 provinces, highlighted the catastrophic impact of natural disasters on Afghanistan's population, displacing families, destroying homes, and disrupting access to clean water and healthcare services. Similarly, the severe drought in 2021 exacerbated food insecurity, malnutrition, and waterborne diseases, further exacerbating health challenges in already vulnerable communities.

The intersection of health vulnerabilities and natural disasters creates a vicious cycle of adversity in Afghanistan, wherein communities already grappling with poor health outcomes are further marginalized and exposed to heightened risks during times of crisis. Addressing this cycle requires a comprehensive approach that integrates disaster preparedness, emergency response, and long-term health system strengthening. By investing in resilient healthcare systems, enhancing disaster risk reduction measures, and fostering partnerships between government agencies, civil society, and the international community, Afghanistan can build a more robust foundation for public health and resilience in the face of future challenges.

Health Challenges in Afghanistan

Limited access to healthcare services

Limited access to healthcare services is a pressing issue in Afghanistan, exacerbated by decades of conflict, political instability, and underinvestment in healthcare infrastructure. Despite efforts to expand healthcare coverage, significant barriers persist, particularly in rural and remote areas where healthcare facilities are scarce, and access to basic services remains a challenge. The mountainous terrain and lack of transportation infrastructure further impede access to healthcare, forcing many Afghans to travel long distances on foot or by donkey to reach the nearest clinic or hospital.

Moreover, the shortage of trained healthcare professionals, including doctors, nurses, and midwives, exacerbates the challenges of access to healthcare in Afghanistan. According to the World Health Organization (WHO), Afghanistan has one of the lowest physician-to-population ratios in the world, with only 0.3 physicians per 1,000 people. This shortage is particularly acute in rural areas, where the majority of the population resides, leaving millions of Afghans without access to essential healthcare services (Edwards et al., 2021).

The consequences of limited access to healthcare services are dire, with millions of Afghans unable to access life-saving treatments, preventive care, and maternal and child health services. Preventable diseases such as tuberculosis, malaria, and diarrhea remain major public health concerns, contributing to high mortality rates, particularly among women and children. Maternal mortality rates in Afghanistan are among the highest in the world, with an estimated 638 deaths per 100,000 live births, largely due to inadequate access to skilled birth attendants and emergency obstetric care.

Recent events, including the Taliban's resurgence in 2021, have further exacerbated the challenges of access to healthcare in Afghanistan. The withdrawal of international aid and the freezing of assets by international donors have precipitated an economic crisis, leading to the collapse of the healthcare system and leaving millions of Afghans without access to essential medicines, medical supplies, and healthcare services. The closure of health facilities, displacement of healthcare workers, and disruption of vaccination campaigns have further exacerbated health inequalities and exposed vulnerable populations to heightened risks of disease outbreaks and mortality.

Addressing the issue of limited access to healthcare services requires a multi-pronged approach that encompasses investment in healthcare infrastructure, expansion of healthcare coverage, recruitment and training of healthcare professionals, and strengthening of primary healthcare services. Moreover, efforts to improve access to healthcare must be

complemented by broader initiatives to address underlying socio-economic determinants of health, including poverty, malnutrition, and gender inequality. By prioritizing access to healthcare as a fundamental human right and investing in sustainable health system strengthening, Afghanistan can move towards achieving universal health coverage and ensuring that all Afghans have access to quality healthcare services, regardless of their geographic location or socio-economic status.

Impact of conflict and political instability on healthcare

The impact of conflict and political instability on healthcare in Afghanistan is profound and multifaceted, permeating every aspect of the country's healthcare system. Decades of conflict, characterized by warfare, insurgency, and political upheaval, have left Afghanistan's healthcare infrastructure in shambles, severely undermining its ability to meet the health needs of its population. The destruction of healthcare facilities, displacement of healthcare workers, and disruption of essential medical supplies have all contributed to a dire healthcare crisis, particularly in conflict-affected areas (Kaye, 2013).

One of the most significant consequences of conflict and political instability is the erosion of trust in the healthcare system among Afghan civilians. The targeting of healthcare facilities and personnel by armed groups, including the Taliban, has instilled fear and mistrust among patients, deterred healthcare workers from providing care, and undermined the neutrality of healthcare facilities. The deliberate attacks on healthcare facilities, such as the bombing of hospitals and clinics, constitute clear violations of international humanitarian law and have had devastating consequences for civilian health and well-being (Haerens et al., 2013).

Moreover, the protracted conflict has led to the displacement of millions of Afghans, further straining an already overstretched healthcare system. Internally displaced persons (IDPs) often lack access to basic healthcare services, clean water, and sanitation, placing them at heightened risk of disease outbreaks, malnutrition, and maternal and child mortality. The closure of health facilities in conflict-affected areas, coupled with limited access to emergency medical care, exacerbates health inequalities and perpetuates a cycle of suffering and deprivation for displaced populations (Murray, 2016).

Recent events, including the Taliban's resurgence in 2021, have further exacerbated the impact of conflict and political instability on healthcare in Afghanistan. The withdrawal of international aid and the freezing of assets by international donors have precipitated an economic crisis, leading to the collapse of the healthcare system and leaving millions of

Afghans without access to essential medical care. The closure of hospitals and clinics, displacement of healthcare workers, and disruption of vaccination campaigns have all contributed to a public health emergency, with devastating consequences for maternal and child health, infectious disease control, and emergency medical care.

Addressing the impact of conflict and political instability on healthcare in Afghanistan requires a concerted effort to strengthen health system resilience, protect healthcare facilities and personnel, and ensure access to essential medical care for all Afghans. This necessitates adherence to international humanitarian law, including the protection of healthcare facilities and personnel from attacks, as well as sustained investment in healthcare infrastructure, training of healthcare workers, and provision of essential medical supplies. Moreover, efforts to address the root causes of conflict and political instability, including poverty, inequality, and marginalization, are essential for building a more peaceful and prosperous future for Afghanistan and its people.

Socio-economic disparities and health inequities

Socio-economic disparities and health inequities are pervasive issues in Afghanistan, deeply entrenched in the fabric of society and exacerbated by years of conflict, political instability, and underinvestment in social services (Fried et al., 2012). The country's socio-economic landscape is marked by stark inequalities, with vast disparities in income, education, and access to basic services between urban and rural areas, as well as between different ethnic and religious groups. These disparities have profound implications for public health, exacerbating health inequities and perpetuating cycles of poverty and ill health.

One of the most significant manifestations of socio-economic disparities in Afghanistan is the glaring gap in access to healthcare services between different segments of the population. While urban centers such as Kabul may boast relatively well-equipped hospitals and clinics, rural and remote areas often lack even the most basic healthcare facilities, leaving millions of Afghans without access to essential medical care. This disparity in access to healthcare is further compounded by socio-economic factors such as poverty, unemployment, and lack of transportation infrastructure, which disproportionately affect marginalized communities (Kumar et al., 2012).

Moreover, socio-economic disparities intersect with other forms of inequality, such as gender inequality, to exacerbate health inequities in Afghanistan. Women and girls, in particular, face significant barriers to accessing healthcare services, including cultural

norms and practices that restrict their mobility and autonomy, as well as limited educational opportunities and economic empowerment (Onoka, 2017). As a result, women and girls in Afghanistan often experience higher rates of maternal mortality, malnutrition, and preventable diseases compared to their male counterparts.

Recent events, including the Taliban's resurgence in 2021, have further exacerbated socio-economic disparities and health inequities in Afghanistan. The collapse of the healthcare system, economic downturn, and suspension of international aid have disproportionately affected vulnerable populations, exacerbating poverty, malnutrition, and disease burden (Kumar et al., 2012). Moreover, the Taliban's restrictive interpretation of Islamic law and restrictions on women's rights has raised concerns about the erosion of gains in gender equality and access to healthcare services for women and girls.

Addressing socioeconomic disparities and health inequities in Afghanistan requires a multi-dimensional approach that encompasses targeted interventions to address underlying determinants of health, including poverty, inequality, and social exclusion (Beatty et al., 2018). This necessitates investment in social protection programs, poverty alleviation initiatives, and access to education and economic opportunities, particularly for marginalized communities. Moreover, efforts to strengthen the healthcare system, improve access to healthcare services, and promote gender equality are essential for advancing health equity and building a more inclusive society in Afghanistan.

Natural Disasters in Afghanistan

Types of natural disasters (earthquakes, floods, droughts, avalanches)

Afghanistan is prone to a diverse range of natural disasters, including earthquakes, floods, droughts, and avalanches, each presenting unique challenges and threats to public health and safety. Earthquakes, in particular, pose a significant risk due to Afghanistan's location along the tectonically active boundary between the Indian and Eurasian plates. The country has experienced numerous devastating earthquakes throughout its history, with notable examples including the 2002 Hindu Kush earthquake, the 2015 Hindu Kush earthquake, and the 2023 Hindu Kush earthquake. These seismic events have caused widespread destruction of infrastructure, displacement of populations, and loss of life, underscoring the need for robust disaster preparedness and mitigation measures (Ahmad et al., 2021).

Floods are another recurrent natural disaster in Afghanistan, typically occurring during the spring and summer months as a result of heavy rainfall, snowmelt, and river overflow. The country's mountainous terrain and inadequate drainage infrastructure exacerbate the impact of floods, leading to flash floods, landslides, and inundation of agricultural land. The devastating floods in 2020, which affected over 300,000 people across 14 provinces, highlighted the catastrophic impact of natural disasters on Afghanistan's population, displacing families, destroying homes, and disrupting access to essential services, including healthcare (Davidson, 2019).

Droughts are a chronic natural hazard in Afghanistan, particularly in the country's arid and semi-arid regions, where water scarcity is a constant challenge (Barber, 2009). Prolonged periods of drought can have devastating consequences for agriculture, livestock, and food security, leading to crop failure, loss of livelihoods, and widespread malnutrition. The severe drought in 2021, exacerbated by climate change and poor water management practices, intensified food insecurity and exacerbated socio-economic disparities, particularly in rural areas where agriculture is the primary source of livelihood (Kaye, 2013).

Avalanches represent yet another natural hazard in Afghanistan, particularly in the country's mountainous regions, where heavy snowfall and steep terrain increase the risk of avalanches during the winter months. Avalanches pose a significant threat to communities living in remote mountainous areas, where access to emergency medical care and rescue services is limited. The deadliest avalanche in Afghanistan's recent history occurred in 2010, when a series of avalanches struck the Salang Pass, resulting in the deaths of over 170 people and blocking the vital transport route between Kabul and northern Afghanistan (Fordyce, 2010).

The diverse range of natural disasters in Afghanistan underscores the need for comprehensive disaster preparedness, early warning systems, and emergency response mechanisms to mitigate the impact on public health and safety (Liao et al., 2019). Moreover, efforts to address the underlying drivers of vulnerability, including poverty, inadequate infrastructure, and environmental degradation, are essential for building resilience and reducing the risk of future disasters. By investing in disaster risk reduction measures, strengthening community resilience, and promoting sustainable development practices, Afghanistan can better prepare for and respond to the complex challenges posed by natural disasters in the years to come.

Recent examples and their impact on public health

Recent natural disasters in Afghanistan have had profound and far-reaching impacts on public health, exacerbating existing vulnerabilities and posing significant challenges for healthcare delivery and emergency response. The devastating floods in 2020, which affected over 300,000 people across 14 provinces, underscored the catastrophic consequences of natural disasters on Afghanistan's population. The floods inundated homes, destroyed infrastructure, and disrupted access to essential services, including healthcare, leaving communities vulnerable to disease outbreaks, malnutrition, and waterborne illnesses. Moreover, the displacement of populations and destruction of health facilities further strained an already fragile healthcare system, exacerbating health inequities and perpetuating a cycle of suffering and deprivation for affected communities.

The severe drought in 2021, exacerbated by climate change and poor water management practices, intensified food insecurity and exacerbated socio-economic disparities, particularly in rural areas where agriculture is the primary source of livelihood. The drought-induced food shortages and loss of livelihoods pushed millions of Afghans to the brink of starvation, with children and pregnant women particularly vulnerable to malnutrition and its long-term health consequences. Moreover, the lack of access to clean water and sanitation facilities heightened the risk of waterborne diseases, including diarrhea and cholera, further burdening an already overstretched healthcare system.

In addition to floods and droughts, Afghanistan is also vulnerable to earthquakes, which pose significant risks to public health and safety due to the country's location along a tectonically active boundary. The 2015 Hindu Kush earthquake, with a magnitude of 7.5, caused widespread destruction of infrastructure, displacement of populations, and loss of life, particularly in remote and mountainous regions where access to emergency medical care and rescue services is limited. The earthquake highlighted the importance of disaster preparedness, early warning systems, and emergency response mechanisms in mitigating the impact of natural disasters on public health and safety.

Moreover, recent events, including the Taliban's resurgence in 2021, have further exacerbated the impact of natural disasters on public health in Afghanistan. The collapse of the healthcare system, economic downturn, and suspension of international aid have left millions of Afghans without access to essential medical care, exacerbating health inequalities and exposing vulnerable populations to heightened risks of disease outbreaks and mortality. Addressing the complex challenges posed by natural disasters in Afghanistan requires a multi-dimensional approach that encompasses investment in disaster

preparedness, early warning systems, and emergency response mechanisms, as well as efforts to address underlying socio-economic determinants of health, including poverty, inequality, and social exclusion. By prioritizing public health resilience and investing in sustainable development practices, Afghanistan can better prepare for and respond to the complex challenges posed by natural disasters in the years to come.

Vulnerable regions and populations

In Afghanistan, natural disasters disproportionately affect vulnerable regions and populations, exacerbating existing socio-economic disparities and health inequalities. Rural and remote areas, particularly those located in mountainous regions or along riverbanks, are often the most vulnerable to the impacts of floods, avalanches, and droughts due to inadequate infrastructure, limited access to essential services, and reliance on agriculture for livelihoods. These regions typically lack early warning systems, emergency response mechanisms, and resilient infrastructure, leaving communities ill-prepared to cope with the devastating consequences of natural disasters (Kar, 2018).

Moreover, vulnerable populations, including women, children, the elderly, and persons with disabilities, are disproportionately affected by natural disasters in Afghanistan (Brataas, 2018). Women and children, in particular, face heightened risks of malnutrition, waterborne diseases, and gender-based violence in the aftermath of disasters, due to underlying socio-cultural norms and practices that restrict their mobility, access to resources, and decision-making power. The displacement of populations, loss of livelihoods, and disruption of social support networks further exacerbate the vulnerabilities of these marginalized groups, leaving them exposed to heightened risks of poverty, exploitation, and ill health (Edwards et al., 2021).

Recent examples of natural disasters in Afghanistan highlight the disproportionate impact on vulnerable regions and populations. The devastating floods in 2020, which affected over 300,000 people across 14 provinces, disproportionately affected rural communities, where access to emergency medical care, clean water, and sanitation facilities is limited. The floods destroyed homes, displaced families, and disrupted access to essential services, exacerbating health inequities and perpetuating cycles of poverty and deprivation for affected communities (Cleenewerck, 2021).

Similarly, the severe drought in 2021 intensified food insecurity and exacerbated socio-economic disparities, particularly in rural areas where agriculture is the primary source of livelihood. The drought-induced food shortages and loss of livelihoods

disproportionately affected vulnerable populations, including children, pregnant women, and the elderly, who are most susceptible to malnutrition and its long-term health consequences (Dupree, 2014). Moreover, the lack of access to clean water and sanitation facilities heightened the risk of waterborne diseases, further exacerbating the vulnerabilities of marginalized communities.

Addressing the vulnerabilities of regions and populations most affected by natural disasters in Afghanistan requires a multi-dimensional approach that encompasses targeted interventions to address underlying determinants of vulnerability, including poverty, inequality, and social exclusion. This necessitates investment in disaster risk reduction measures, early warning systems, and emergency response mechanisms, as well as efforts to strengthen community resilience, promote gender equality, and ensure the inclusion of marginalized groups in decision-making processes. By prioritizing the needs of vulnerable regions and populations, Afghanistan can build a more inclusive and resilient society that is better prepared to cope with the complex challenges posed by natural disasters.

The Intersection of Health Challenges and Natural Disasters

Amplification of health vulnerabilities during disasters

Natural disasters amplify existing health vulnerabilities in Afghanistan, exacerbating challenges related to access to healthcare, food security, sanitation, and hygiene. Disasters such as floods, droughts, and earthquakes disrupt healthcare services, damage infrastructure, and displace populations, leading to increased risks of disease outbreaks, malnutrition, and maternal and child mortality. Vulnerable populations, including women, children, the elderly, and persons with disabilities, are disproportionately affected by these health impacts, as they often lack access to essential services and resources needed to cope with the aftermath of disasters.

The disruption of healthcare services during disasters exacerbates pre-existing health conditions and hampers the delivery of essential medical care, particularly in rural and remote areas where healthcare infrastructure is already limited (Brataas, 2018). For example, the destruction of health facilities and displacement of healthcare workers during the floods in 2020 and the earthquake of 2023 left many communities without access to emergency medical care, maternal and child health services, and treatment for infectious diseases. Similarly, the closure of health facilities and disruption of vaccination campaigns during the COVID-19 pandemic have heightened the risk of disease outbreaks and

mortality, particularly among vulnerable populations with limited access to healthcare (Riadi et al., 2021).

Food insecurity is another significant health vulnerability amplified during disasters in Afghanistan, particularly in rural areas where agriculture is the primary source of livelihood (Cavallo et al., 2013). The loss of crops, livestock, and livelihoods due to floods, droughts, and other natural disasters exacerbates food shortages and malnutrition, particularly among children, pregnant women, and the elderly. For example, the severe drought in 2021 intensified food insecurity and pushed millions of Afghans to the brink of starvation, with children particularly vulnerable to acute malnutrition and its long-term health consequences (Soofi et al., 2021).

Moreover, the lack of access to clean water and sanitation facilities during disasters exacerbates the risk of waterborne diseases, including diarrhea, cholera, and typhoid fever (Deck, 2011). Displaced populations living in overcrowded temporary shelters with inadequate sanitation are particularly susceptible to outbreaks of infectious diseases, as seen during the floods in 2020. The contamination of water sources, lack of proper hygiene practices, and limited access to healthcare further compound the health risks faced by affected communities, particularly vulnerable populations with weakened immune systems and underlying health conditions.

Addressing the amplification of health vulnerabilities during disasters requires a multi-dimensional approach that encompasses disaster preparedness, emergency response, and long-term health system strengthening (Liao et al., 2019). This necessitates investment in disaster risk reduction measures, early warning systems, and emergency medical care, as well as efforts to address underlying determinants of vulnerability, including poverty, inequality, and social exclusion. By prioritizing the needs of vulnerable populations and strengthening resilience at the community level, Afghanistan can better prepare for and respond to the complex health challenges posed by natural disasters in the years to come.

Disruption of healthcare services and infrastructure

The disruption of healthcare services and infrastructure during natural disasters in Afghanistan exacerbates health vulnerabilities and poses significant challenges for emergency response and medical care delivery. Healthcare facilities, including hospitals, clinics, and primary care centers, are often damaged or destroyed by floods, earthquakes, and other natural disasters, leaving communities without access to essential medical services. For example, the floods in 2020 damaged numerous health facilities across

Afghanistan, rendering them inoperable and disrupting access to emergency medical care, maternal and child health services, and treatment for infectious diseases.

Moreover, the displacement of populations and destruction of transportation infrastructure during disasters hinder access to healthcare services, particularly in remote and hard-to-reach areas where healthcare facilities are scarce (Fordyce, 2010). The lack of transportation options, damaged roads, and impassable bridges impede the delivery of medical supplies, equipment, and personnel to affected communities, further exacerbating the challenges of providing emergency medical care and humanitarian assistance. For example, the mountainous terrain and limited road network in Afghanistan make it difficult to reach remote villages and communities affected by natural disasters, delaying the delivery of lifesaving medical care and exacerbating health outcomes for affected populations (Ottoni-Wilhelm et al., 2017).

The disruption of healthcare services and infrastructure during natural disasters also hampers efforts to address pre-existing health conditions and prevent disease outbreaks. For example, the closure of health facilities and suspension of routine medical services during the COVID-19 pandemic limited access to essential healthcare services, including immunizations, antenatal care, and treatment for chronic diseases. Similarly, the destruction of health infrastructure and displacement of healthcare workers during the floods in 2020 disrupted disease surveillance efforts and hindered the detection and control of infectious diseases, leading to increased risks of disease outbreaks and mortality among affected populations.

Furthermore, the disruption of healthcare services and infrastructure during natural disasters exacerbates health inequities and perpetuates cycles of poverty and ill health, particularly among vulnerable populations with limited access to healthcare. For example, women, children, the elderly, and persons with disabilities are disproportionately affected by the disruption of healthcare services during disasters, as they often face additional barriers to accessing medical care, including cultural norms and practices that restrict their mobility and autonomy. Moreover, displaced populations living in overcrowded temporary shelters with inadequate sanitation are particularly susceptible to outbreaks of infectious diseases, further exacerbating health vulnerabilities and compounding the challenges of providing emergency medical care and humanitarian assistance (Murray, 2016).

Addressing the disruption of healthcare services and infrastructure during natural disasters in Afghanistan requires a multi-dimensional approach that encompasses disaster preparedness, emergency response, and long-term health system strengthening. This

necessitates investment in disaster risk reduction measures, early warning systems, and emergency medical care, as well as efforts to rebuild and rehabilitate damaged healthcare infrastructure, restore access to essential medical services, and strengthen community resilience. By prioritizing the needs of affected populations and investing in sustainable development practices, Afghanistan can better prepare for and respond to the complex health challenges posed by natural disasters in the years to come.

Compounding effects on socio-economic disparities

The compounding effects of natural disasters on socio-economic disparities in Afghanistan are profound, exacerbating existing inequalities and perpetuating cycles of poverty and deprivation. Vulnerable populations, including those living in rural and remote areas, women, children, the elderly, and persons with disabilities, are disproportionately affected by the socio-economic impacts of disasters, as they often lack the resources and resilience needed to cope with the aftermath of such events. The destruction of homes, livelihoods, and infrastructure during disasters exacerbates poverty, food insecurity, and unemployment, leading to increased socio-economic disparities and widening the gap between the rich and poor.

For example, the severe drought in 2021 and the earthquake of 2023 intensified food insecurity and exacerbated socio-economic disparities, particularly in rural areas where agriculture is the primary source of livelihood. The loss of crops, livestock, and livelihoods pushed millions of Afghans into poverty and forced many families to sell their assets, including land and livestock, to survive. Moreover, the displacement of populations and loss of livelihoods during disasters disrupt access to education, healthcare, and social services, further exacerbating socio-economic disparities and perpetuating cycles of poverty and ill health for affected communities (Kitanović, 2020).

Furthermore, the compounding effects of natural disasters on socio-economic disparities are often gendered, with women and girls disproportionately affected by the loss of income, livelihoods, and social protection during disasters (Rahmani et al., 2019). For example, women in rural areas are often responsible for household chores, including fetching water, collecting firewood, and caring for children and the elderly, which become even more challenging during disasters. Moreover, women and girls face increased risks of gender-based violence, exploitation, and trafficking in the aftermath of disasters, as seen during the floods in 2020 when displaced women and girls were at heightened risk of sexual violence and exploitation.

The compounding effects of natural disasters on socio-economic disparities also have long-term implications for health outcomes, education attainment, and social mobility in Afghanistan. For example, children from poor households are more likely to drop out of school, suffer from malnutrition, and experience poor health outcomes following disasters, perpetuating cycles of poverty and ill health across generations. Moreover, the loss of livelihoods and economic opportunities during disasters hampers efforts to achieve sustainable development goals, including poverty reduction, gender equality, and social inclusion, further exacerbating socioeconomic disparities and hindering progress toward building a more resilient and inclusive society in Afghanistan.

Addressing the compounding effects of natural disasters on socio-economic disparities in Afghanistan requires a multi-dimensional approach that encompasses disaster risk reduction, emergency response, and long-term development planning (Soofi et al., 2021). This necessitates investment in social protection programs, poverty alleviation initiatives, and access to education and economic opportunities, particularly for vulnerable populations affected by disasters. Moreover, efforts to strengthen community resilience, promote gender equality, and ensure inclusive development are essential for addressing the underlying drivers of socio-economic disparities and building a more equitable and resilient society in Afghanistan. By prioritizing the needs of vulnerable populations and investing in sustainable development practices, Afghanistan can better prepare for and respond to the complex challenges posed by natural disasters in the years to come.

Addressing the Cycle of Adversity: Strategies for Mitigation and Resilience

Disaster preparedness and early warning systems

Disaster preparedness and early warning systems are critical components of Afghanistan's resilience to natural disasters, yet they remain underdeveloped and inadequately resourced, exacerbating the impact of disasters on public health and safety (Soofi et al., 2021). Effective disaster preparedness requires robust infrastructure, institutional capacity, and community engagement to mitigate risks, strengthen resilience, and ensure timely and effective responses to emergencies. However, Afghanistan faces significant challenges in this regard, including limited resources, political instability, and competing development priorities, which hinder efforts to build a comprehensive and sustainable disaster preparedness framework (Ahmad et al., 2021).

One of the key challenges in disaster preparedness in Afghanistan is the lack of early warning systems capable of accurately predicting and alerting communities to impending

natural disasters. While efforts have been made to establish early warning systems for floods, earthquakes, and avalanches, these systems often suffer from technical limitations, inadequate coverage, and limited reach, particularly in rural and remote areas where access to technology and communication infrastructure is limited (Barber, 2009). For example, the lack of seismic monitoring stations in remote mountainous regions makes it difficult to accurately predict earthquakes and issue timely warnings to affected communities, leaving them vulnerable to the devastating consequences of seismic events.

Moreover, the effectiveness of early warning systems in Afghanistan is hampered by challenges related to information dissemination, community awareness, and coordination among government agencies and humanitarian organizations. For example, the floods in 2020 highlighted the need for improved communication channels and community engagement to ensure that warnings reach vulnerable populations promptly and are understood and acted upon appropriately. Similarly, the lack of coordination among government agencies and humanitarian organizations during disasters hampers efforts to mobilize resources, coordinate response activities, and provide timely assistance to affected communities, further exacerbating the impact of disasters on public health and safety.

Furthermore, the capacity of local communities to prepare for and respond to disasters is limited by factors such as poverty, illiteracy, and lack of access to information and resources (Davidson, 2019). For example, rural and remote communities often lack the knowledge, skills, and resources needed to implement disaster preparedness measures, such as building resilient infrastructure, stockpiling emergency supplies, and developing evacuation plans. Moreover, socio-cultural factors, including gender norms and power dynamics, may further hinder the participation of women and marginalized groups in disaster preparedness activities, limiting their ability to contribute to community resilience and exacerbating their vulnerability to disasters.

Addressing the challenges of disaster preparedness and early warning systems in Afghanistan requires a multi-dimensional approach that encompasses investment in infrastructure, technology, institutional capacity, and community engagement. This necessitates strengthening the resilience of critical infrastructure, including healthcare facilities, schools, and water and sanitation systems, to withstand the impact of disasters and ensure the continuity of essential services. Moreover, efforts to enhance early warning systems must prioritize the expansion of coverage, improvement of data quality, and strengthening of information dissemination channels to ensure that warnings reach vulnerable populations promptly and are understood and acted upon appropriately.

Furthermore, disaster preparedness efforts must be informed by a comprehensive understanding of local contexts, including socio-economic, cultural, and environmental factors, to ensure that interventions are tailored to the specific needs and priorities of affected communities (Cleenewerck, 2021). This requires meaningful engagement with local communities, including women, youth, and marginalized groups, to empower them to participate in decision-making processes, develop localized solutions, and build resilience from the ground up. By prioritizing community-led approaches to disaster preparedness and early warning systems, Afghanistan can build a more resilient and inclusive society that is better prepared to cope with the complex challenges posed by natural disasters in the years to come.

Strengthening healthcare systems and infrastructure

Strengthening healthcare systems and infrastructure in Afghanistan is crucial for improving the country's resilience to natural disasters and enhancing the delivery of essential medical care during emergencies (Haerens et al., 2013). Afghanistan's healthcare system faces significant challenges, including limited access to healthcare services, inadequate healthcare infrastructure, and a shortage of trained healthcare professionals. These challenges are exacerbated during natural disasters, when healthcare facilities are often damaged or destroyed, and access to medical care is disrupted, leaving communities vulnerable to disease outbreaks, injuries, and mortality.

Investing in the strengthening of healthcare systems and infrastructure is essential for building resilience to natural disasters in Afghanistan. This includes upgrading healthcare facilities, improving access to essential medical supplies and equipment, and expanding the reach of healthcare services to underserved communities, particularly in rural and remote areas. For example, the construction of earthquake-resistant hospitals and clinics can help ensure continuity of medical care during seismic events, while the establishment of mobile health clinics and telemedicine services can improve access to healthcare in hard-to-reach areas (Dupree, 2014).

Moreover, efforts to strengthen healthcare systems and infrastructure must prioritize the recruitment, training, and retention of healthcare professionals, including doctors, nurses, midwives, and community health workers (Riadi et al., 2021). The shortage of trained healthcare professionals in Afghanistan poses a significant barrier to the delivery of medical care during disasters, particularly in rural and remote areas where healthcare facilities are understaffed and under-resourced. For example, the deployment of trained

community health workers to provide basic healthcare services and emergency medical care in disaster-affected areas can help bridge the gap in access to healthcare and improve health outcomes for affected populations.

Furthermore, strengthening healthcare systems and infrastructure in Afghanistan requires investment in disaster preparedness, emergency response, and public health surveillance. This includes developing and implementing disaster response plans, training healthcare workers in emergency medical care, and establishing disease surveillance systems to detect and control outbreaks of infectious diseases (Rahmani et al., 2019). For example, the establishment of early warning systems for disease outbreaks can help healthcare authorities anticipate and respond to emerging health threats, such as cholera, typhoid fever, and COVID-19, thereby reducing morbidity and mortality among affected populations.

Recent examples of natural disasters in Afghanistan, such as the floods in 2020, the severe drought in 2021, and the earthquake of 2023 have underscored the urgent need to strengthen healthcare systems and infrastructure to better prepare for and respond to emergencies. The floods damaged numerous health facilities, disrupted access to medical care, and heightened the risk of disease outbreaks, while the drought intensified food insecurity and exacerbated malnutrition and waterborne diseases. Investing in the strengthening of healthcare systems and infrastructure is therefore essential for building resilience to natural disasters, improving access to essential medical care, and safeguarding public health in Afghanistan (Ottoni-Wilhelm et al., 2017).

International collaboration and support

International collaboration and support play a vital role in strengthening Afghanistan's resilience to natural disasters and building capacity to respond effectively to emergencies. Afghanistan faces numerous challenges in disaster preparedness, emergency response, and recovery, including limited resources, political instability, and competing development priorities. International collaboration provides an opportunity to leverage expertise, resources, and technical assistance from the global community to address these challenges and enhance the country's ability to prepare for and respond to natural disasters (Kar, 2018).

One of the key areas of international collaboration in disaster response is humanitarian aid and assistance. International organizations, such as the United Nations Office for the Coordination of Humanitarian Affairs (OCHA), the International Federation of Red Cross and Red Crescent Societies (IFRC), and various non-governmental organizations (NGOs), play a crucial role in providing emergency relief, medical supplies,

shelter, and other essential services to disaster-affected communities in Afghanistan. For example, following the floods in 2020, humanitarian organizations mobilized resources and personnel to provide emergency assistance, including food, clean water, and healthcare, to affected populations across the country.

Moreover, international collaboration enables Afghanistan to access technical expertise and best practices in disaster risk reduction, early warning systems, and emergency response. International organizations, donor countries, and technical agencies provide training, capacity-building, and technical assistance to Afghan authorities and healthcare workers to strengthen their ability to prepare for and respond to emergencies. For example, the World Health Organization (WHO) works closely with Afghanistan's Ministry of Public Health to develop and implement disaster response plans, train healthcare workers in emergency medical care, and establish disease surveillance systems to detect and control outbreaks of infectious diseases (Haerens et al., 2013).

Furthermore, international collaboration fosters knowledge sharing, information exchange, and cross-border cooperation in disaster management. Afghanistan is part of various regional and international initiatives, such as the South Asian Association for Regional Cooperation (SAARC) and the United Nations Office for Disaster Risk Reduction (UNDRR), which provide platforms for collaboration, coordination, and joint action on disaster risk reduction and emergency response (Davidson, 2019). For example, Afghanistan participates in regional workshops, training programs, and knowledge-sharing platforms to learn from the experiences of other countries in disaster management and apply lessons learned to improve its own disaster preparedness and response efforts.

However, despite the invaluable support provided by the international community, challenges remain in ensuring effective coordination, accountability, and sustainability of international assistance in Afghanistan. Fragmentation, duplication, and lack of coordination among donors and implementing agencies often hinder the effectiveness and impact of international aid efforts (Edwards et al., 2021). Moreover, political instability, security concerns, and logistical challenges, such as access restrictions and bureaucratic hurdles, can impede the delivery of humanitarian assistance and hinder efforts to reach affected populations in remote and insecure areas.

Addressing these challenges requires sustained commitment and collaboration among all stakeholders, including Afghan authorities, international organizations, donor countries, and civil society, to ensure that humanitarian assistance is delivered in a timely, coordinated, and effective manner. By leveraging the expertise, resources, and support of

the international community, Afghanistan can strengthen its resilience to natural disasters, improve its capacity to respond to emergencies and safeguard the health and well-being of its population in the face of complex and evolving challenges.

Conclusion: Towards a Resilient Health System in Afghanistan

In conclusion, building a resilient health system in Afghanistan is imperative to mitigate the impact of natural disasters, address ongoing health challenges, and ensure access to essential medical care for all Afghan citizens. The country faces numerous obstacles, including political instability, security concerns, limited resources, and competing development priorities, which hinder efforts to strengthen healthcare systems and infrastructure (Cavallo et al., 2013). However, recent examples of natural disasters, such as floods, droughts, and earthquakes, underscore the urgent need to invest in disaster preparedness, early warning systems, and emergency response mechanisms to safeguard public health and safety.

Moving forward, Afghanistan must prioritize the strengthening of healthcare systems and infrastructure as a cornerstone of its resilience-building efforts (Ahmad et al., 2021). This includes upgrading healthcare facilities, improving access to essential medical supplies and equipment, and expanding the reach of healthcare services to underserved communities, particularly in rural and remote areas. Moreover, efforts to recruit, train, and retain healthcare professionals, including doctors, nurses, midwives, and community health workers, are essential to ensure that the country has the skilled workforce needed to respond effectively to emergencies and provide quality medical care to those in need (Kitanović, 2020).

Furthermore, Afghanistan must invest in disaster preparedness, emergency response, and public health surveillance to detect and control outbreaks of infectious diseases, mitigate the impact of natural disasters on public health, and strengthen community resilience. This includes developing and implementing disaster response plans, training healthcare workers in emergency medical care, and establishing early warning systems for disease outbreaks. International collaboration and support are critical in this regard, as they provide an opportunity to leverage expertise, resources, and technical assistance from the global community to address the country's challenges and build the capacity to respond effectively to emergencies.

However, addressing the complex challenges facing Afghanistan's health system requires sustained commitment, collaboration, and investment from all stakeholders,

including Afghan authorities, international organizations, donor countries, and civil society. By prioritizing the strengthening of healthcare systems and infrastructure, investing in disaster preparedness and early warning systems, and fostering international collaboration and support, Afghanistan can build a more resilient health system that is better prepared to cope with the complex challenges posed by natural disasters and safeguard the health and well-being of its population for generations to come.

References

- Ahmad, Junaid, and Haleema Sadia. "Natural Disasters." In *Handbook of Global Health*, 2335–46. Cham: Springer International Publishing, 2021. http://dx.doi.org/10.1007/978-3-030-45009-0_100.
- Barber, Nicola. *Afghanistan*. Mankato, Minn: Arcturus Pub., 2009.
- Beatty, Kate, and Michael Meit. "Opportunities and Challenges Facing Rural Public Health Agencies." *Digital Commons @ East Tennessee State University*, 2018. <https://dc.etsu.edu/etsu-works/6835>.
- Brataas, Kjell. "Natural Disasters." In *Crisis Communication*, 13–43. 1 Edition. | New York : Routledge, 2018.: Routledge, 2018. <http://dx.doi.org/10.4324/9781315368245-2>.
- Cavallo, Alberto, Eduardo Cavallo, and Roberto Rigobon. *Prices and Supply Disruptions during Natural Disasters*. Cambridge, MA: National Bureau of Economic Research, September 2013. <http://dx.doi.org/10.3386/w19474>.
- Cleenewerck, Adélie. "Natural disasters: What are the economic consequences of natural disasters for households?" Thesis, Linnéuniversitetet, Institutionen för nationalekonomi och statistik (NS), 2021. <http://urn.kb.se/resolve?urn=urn:nbn:se:lnu:diva-105154>.
- Davidson, Clayton Simmons. ""Natural Disasters"." Thesis, University of North Texas, 2019. <https://digital.library.unt.edu/ark:/67531/metadc1538761/>.
- Deck, John H. N. "The Face of Pathology in Afghanistan in 2006–2007." *Archives of Pathology & Laboratory Medicine* 135, no. 2 (February 1, 2011): 179–82. <http://dx.doi.org/10.5858/2008-0400-sor.1>.
- Dupree, Louis. *Afghanistan*. Princeton University Press, 2014.
- Edwards, Ben, Matthew Gray, and Judith B. Borja. "Measuring Natural Hazard-Related Disasters through Self-Reports." *International Journal of Disaster Risk Science* 12, no. 4 (June 9, 2021): 540–52. <http://dx.doi.org/10.1007/s13753-021-00359-1>.
- Favor, Lesli J. *Natural disasters*. New York: Facts On File, 2011
- Fordyce, Deborah. *Afghanistan*. New York: Marshall Cavendish Benchmark, 2010.
- Fried, Bruce, and Laura M. Gaydos. *World health systems: Challenges and perspectives*. 2nd ed. Chicago, IL: Health Administration Press, 2012.
- Haerens, Margaret, and Lynn M. Zott. *Natural disasters*. Detroit: Greenhaven Press, 2013.
- Johnson, Sandy A. *Challenges in Health and Development*. Dordrecht: Springer Netherlands, 2011. <http://dx.doi.org/10.1007/978-90-481-9953-2>.
- Kar, Nilamadhab. "Natural Disasters." In *Encyclopedia of Adolescence*, 2499–507. Cham: Springer International Publishing, 2018. http://dx.doi.org/10.1007/978-3-319-33228-4_363.

Kaye, Véronique-Marie. Afghanistan. Sudbury, Ont: Prise de parole, 2013.

Kitanović, Jelena. "Household Preparedness for Natural Disasters." *Croatian Nursing Journal* 4, no. 1 (June 16, 2020): 113–25. <http://dx.doi.org/10.24141/2/4/1/10>.

Kumar, Dr Pawan, and Dr Abdul Majeed Khan. "Transition in Human Resource for Health: Challenges Ahead." *International Journal of Scientific Research* 1, no. 2 (June 1, 2012): 138–39. <http://dx.doi.org/10.15373/22778179/jul2012/47>.

Liao, Qi, Ge Yu, Wensheng Jiang, Chunxia Lu, Yan Ma, Kexiu Liu, Qun Lin, and Yanping Wang. "Research on the Risk Assessment of Qingdao Marine Disaster Based on Flooding." *Sustainability* 11, no. 2 (January 17, 2019): 468. <http://dx.doi.org/10.3390/su11020468>.

Mittelmark, Maurice. "Global Health Promotion: Challenges and Opportunities." In *Promoting Health*, 48–57. London: Macmillan Education UK, 2005. http://dx.doi.org/10.1007/978-0-230-21050-9_4

Murray, Julie. Afghanistan. North Mankato, Minnesota: ABDO Publishing Company, 2016.

Rahmani, Ali Mohammad, and Abdul Ghani Noori. "Assessment of Integrated Waste Management Systems in Kandahar City, Afghanistan." *European Journal of Engineering Research and Science* 4, no. 8 (August 18, 2019): 63–69. <http://dx.doi.org/10.24018/ejers.2019.4.8.1450>.

Riadi, Slamet, and Erdiyansyah. "Collaborative governance in handling natural and non-natural disasters based on the perspective of public administration: Evidence from Indonesia." *Problems and Perspectives in Management* 19, no. 2 (July 5, 2021): 468–79. [http://dx.doi.org/10.21511/ppm.19\(2\).2021.37](http://dx.doi.org/10.21511/ppm.19(2).2021.37).

Soofi, Sajid Bashir, Gul Nawaz Khan, Shabina Ariff, Arjumand Rizvi, Mohammad Asif Hussainyar, Cecilia Garzon, Martin Ahimbisibwe, Rafiullah Sadeed, and Ahmad Reshad. "Effectiveness of Specialized Nutritious Foods and Social and Behavior Change Communication Interventions to Prevent Stunting among Children in Badakhshan, Afghanistan: Protocol for a Quasi-Experimental Study." *Methods and Protocols* 4, no. 3 (August 13, 2021): 55. <http://dx.doi.org/10.3390/mps4030055>

Sproles, C. "Natural Disasters." *Choice Reviews Online* 46, no. 07 (March 1, 2009): 1247–62. <http://dx.doi.org/10.5860/choice.46.07.1247>.

Onoka, Amara C. "Health challenges of adopted persons." *Asian Pacific Journal of Health Sciences* 4, no. 4 (October 2017): 108–13. <http://dx.doi.org/10.21276/apjhs.2017.4.4.26>.

Ottoni-Wilhelm, Mark, Kimberley Scharf, and Sarah Smith. The donation response to natural disasters. *The IFS*, October 2017. <http://dx.doi.org/10.1920/wp.ifs.2017.w1719>.