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MINISTRY OF HEALTH - ETHIOPIA

ETHIOPIA CONFLICT IMPACT ASSESSMENT AND RECOVERY AND REHABILITATION PLANNING (CIARP)

Final Health Sector Report and Costs

July 2022

The final health sector report and costs include the impact of the conflict in Ethiopia on the heath sector and highlights the priority needs and interventions for recovery and rehabilitation over the next five years.

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EXECUTIVE SUMMARY

This health sector assessment and needs formulation, the costed impact of the conflict, and cost narratives were prepared through a deliberative process with the engagement of regional health bureau representatives and key partners. The report is based on data collected on damage and loss sustained by the health sector from November 2020 to December 2021.

This final health sector report and costs will serve as a basis for two reports:

- **Volume 1**: consolidated report of the comprehensive impacts and needs assessment of the conflict and
- **Volume 2**: a recovery and reconstruction program and 5-year implementation plan.

A desk review was done to assess the status of the Ethiopian health sector prior to and after the 2020/2021 conflict, particularly in Tigray, Afar, Amhara, Oromia, Benishangul-Gumuz, and SNNP (the Konso zone) regional states. The World Health Organization's (WHO) health system building blocks[1] were used as an analytical framework to analyze the impact of the conflict on the health system. The synthesis utilized various sources of information such as regional and federal government damage assessment reports, emergency and conflict situation updates, program assessment reports, and development partner reports to extract and compile the data.

The assessment has shown that the conflict has adversely affected access, availability, and provision of essential health services, and negatively impacted health and nutrition outcomes. It is estimated that close to **24 million** people have been adversely impacted in the conflict-affected areas. Available government data shows that an estimated **5.7 million** people were forcibly displaced at various stages of the conflict across the different regions.

The readiness of the health system to deliver essential health services has been hampered due to the damage caused to health infrastructure, widespread looting of medical equipment and medicines, insecurity, and displacement of households & health workers. Available reports showed that **3,217** health posts, **709** health centers, and **76** hospitals were partially or completely damaged in the six conflict-affected regions.

The physical damage to health infrastructure, and the looting of medical equipment, medicines and medical supplies, especially in the Afar and Amhara regional states, was extremely devastating. The damaged/looted health facilities were only partially functional or not functional during the time of assessment. The damage to the public health infrastructure was not limited to health facilities; based on available reports, zonal health departments, woreda health offices, ambulances, EPSA stores, and oxygen plants were also either damaged or looted during the

1 WHO Health system building blocks include six components (leadership and governance, service delivery, health system financing, health workforce, medical products, vaccines and technologies, and health information systems). https://extranet.who.int/nhptool/BuildingBlock.aspx

conflict. The health workforce also suffered greatly due to the conflict where in Amhara region alone, more than **9,888** health workers had fled from their duty stations.

The needs for reconstruction and rehabilitation of the health system presented in this report are organized in 3 thematic areas i.e., **Policy needs**, **institutional strengthening needs**, and **investment needs**. The needs have been prioritized and organized in time periods as: **Immediate** (ranging from 0-6 months), **Short-term** (ranging from 6-24 months), and **Medium-term** (ranging from 3-5 years).

The total budget needed for the proposed interventions is estimated to be **1,431,264,000 USD . It is proposed that** the costs are distributed across three phases of implementation (i.e., **528.2 million USD**, **575.4 million USD**, and **327.7 million USD** worth of investment are needed during the immediate, short-term and medium-term periods, respectively.) The distribution of the costs across the three proposed phases was determined by a group of experts and their use of the Delphi technique methodology. The major portion of the estimated cost (99.2% of the total cost) is for investment needs i.e., facility rehabilitation, service delivery restoration (medical equipment and amenities), medicine and medical supplies and health facility capacity building. The cost in the investment needs was determined with the assumption that **80%** of health facilities require low-level restoration, **15%** require medium-level restoration, and **5%** require high-level restoration of physical infrastructure.

1. INTRODUCTION

This health sector impact analysis report analyzes and synthesizes the overall damage and destruction of the health sector encountered during the recent conflict in six regions of Ethiopia. The report informs the recovery and reconstruction plans as the country comes out of the conflict. The assessment covers Amhara, Afar, Benishangul-Gumuz, Oromia, Tigray, and SNNP regions (Konso Zone). The World Health Organization's (WHO) health system building blocks[2] were used as an analytical framework to determine the impact of the conflict on the health system. Various sources of information such as regional and federal government damage assessment reports, emergency and conflict situation updates, program assessment reports, and development partner reports were used to extract and compile the data.

In this health sector note, the descriptions and statistics for Tigray region are based on the "Emergency Recovery plan published in June 2021[3] and additional data obtained from satellite imagery, a remote sensing approach used to conduct damage assessment of health facilities in inaccessible areas.

The analysis and descriptions have been organized thematically using the WHO's health system framework. Targeted key informant interviews were conducted to fill information gaps and provide clarifications. The data sources are included as footnotes. To capture the magnitude of the conflict on the country's health system as accurately as possible, the health system standing immediately before the conflict was compared with the situation after the conflict.

The conflict has adversely affected access, availability, and provision of essential health services, and negatively impacted health and nutrition outcomes, resulting in more frequent disease outbreaks and rising levels of malnutrition. The government response to the crisis has been led by evolving comprehensive short and medium term plans that focus on strengthening the emergency response coordination platforms both at the national and regional level; resource mobilization (domestic and external resources); addressing the immediate humanitarian needs through establishing mobile health and nutrition teams; organizing response mechanisms to support Internally Displaced People(IDPs), and providing psychosocial and Sexual and Gender Based Violence (SGBV) management services for SGBV survivors; conducting catch-up campaigns to ensure the continuity of essential health services; deploying disaster medical assistance teams; and engaging with humanitarian organizations to address the emergency health and nutrition needs for communities in accessible areas.

2 WHO Health system building blocks include six components (leadership and governance, service delivery, health system financing, health workforce, medical products, vaccines and technologies, and health information systems). https://extranet.who.int/nhptool/BuildingBlock.aspx
3 Government of the Federal Democratic Republic of Ethiopia (June 2021): Tigray Emergency Recovery plan.

The Ministry of Health (MoH) has implemented innovative approaches to restore the functionality of health facilities in the conflict affected areas. One of the successful innovative approaches used is twinning the damaged health facilities in the conflict affected areas with other health facilities and regional health bureaus in non-conflict areas. This has created a solidarity partnership where health facilities in the conflict-affected areas were twinned with federal hospitals, university hospitals and hospitals under regional health bureaus and provided with medical equipment, human resources, and other essential supplies to deliver emergency care and other critical health services for the communities in the affected areas.

2. HEALTH SECTOR ANALYSIS AND PRE-CONFLICT BASELINE

In 1993, the health policy of Ethiopia was formulated with an emphasis on increasing access to the basic package of essential health services to all segments of the population. Since the launch of the policy, Ethiopia has developed and implemented four successive health sector development plans (HSDPs, 1995 - 2015) followed by 2 Health Sector Transformation Plans (HSTP 1 and 2; 2015/16 – 2019/20 & 2020/21- 2024/25). The governance of the Ethiopian healthcare system is defined within the wider context of Ethiopia's political system. The MOH is mandated to formulate national policies & strategies and to develop standards in consultation with Regional Health Bureaus (RHBs) and other stakeholders.

The Ethiopian government has shown a strong commitment to achieving Universal Health Coverage (UHC) over the last decade, after this was included as a goal in the World Health Report for the first time by the WHO in 2010.[4] To achieve this goal, the government, in collaboration with development partners, invested significant resources and implemented successive health sector strategic plans, all iteratively aiming to create universal access to primary health care services and improvement of health outcomes.

The health sector governance includes administrative and fiscal decentralization to RHBs and district level health offices and multiple layers of stakeholder consultation and policy dialogue. Accordingly, the health system in Ethiopia follows a district-based primary health care system using a network of community level health posts, health centers and hospitals, all connected through referral linkages and reporting and feedback mechanisms - both vertical and horizontal. The health service delivery is structured into a three-tier system: primary, secondary and tertiary[5] with a further network linking with the community structure.

4 World Health Organization. The World Health Report - Health Systems Financing: The Path to Universal Coverage, Geneva, World Health Organization. 2010.
5 The primary level of care comprised a primary hospital (covering 60,000–100,000 people), health centers (covering 15,000–25,000 people) and their satellite health posts (covering 3,000–5,000 people). The secondary level of care is a general hospital covering a population of 1– 1.5 million which is the next referral center for the primary level of care. Tertiary level of care is a specialized hospital covering a population of 3.5–5 million.

Ethiopia's health sector has multiple financing sources, including the government treasury (32%), bilateral and multilateral donors (34%), household out-of-pocket expenditure (30%), community-based health insurance (CBHI), and other sources (3.5%).[6]

The concerted efforts of the Ethiopian government, in close collaboration with development partners, have resulted in significant gains in improving health and nutrition outcomes including the Health Millennium Development Goals (MDGs). Maternal mortality significantly reduced to 401 per 100,000 in 2020. Between 1990 and 2015, child deaths reduced by two-thirds. The under 5 and infant mortality rates were 55 and 43 per 1,000 live births respectively, in 2019. Between 2005 and 2019, the prevalence of stunting decreased from 51% to 37%; underweight decreased from 33% to 21%; and wasting decreased from 12% to 7%. The prevalence of anemia in children aged 6 to 59 months, and in women in the reproductive age group, were 57% and 24%, respectively. Ethiopia has also achieved significantly improved life expectancy, reaching 65 years in 2020 from 49 years in 1990. However, there are still lagging health outcome indicators which have either stagnated or showed a insignificant improvement such as stunting levels and neonatal mortality.

Access to primary health care coverage was 90% in 2019.[7] The country has managed to increase the public health infrastructure across all levels of services. There were 434 hospitals, 3,890 health centers and 18,090 health posts in 2020. The number of physicians and nurses stood at 14,314 and 69,550 in 2020, respectively, with the ratio of one physician per 8,000 people and one nurse per 1,500 people.

In the past couple of years, the country faced consecutive challenges to public health service delivery and overall health security. Continuing weaknesses in systems for emergency preparedness operations and financing, combined with the emergence of new and emerging infectious diseases such as COVID-19, and conflicts that have affected nearly 20% of the districts in the country, have led to direct life loss, numerous IDPs, damage to public health infrastructure and interruption of health service delivery, and a threat of public health emergencies. Thus, the health system remains fragile and under-performing, with risk of outbreaks of infectious diseases such as cholera, measles, meningitis, and acute respiratory infections, including pneumonia, often reaching epidemic proportions.

Table 1 summarizes the change in health status indicators over 30 years (1990 to 2020) at the national level. In Table 2, selected maternal and child health indicators between 2019 and 2020 in the three most conflict affect regions (Tigray, Afar and Amhara) are presented in comparison with the national figures.

6 Federal Democratic Republic of Ethiopia Ministry of Health. April 2022. Ethiopian National Health Accounts Survey 2019/2020, Addis Ababa, Ethiopia.
7 Federal Democratic Republic of Ethiopia Ministry of Health. February 2021. Health Transformation Plan II, Addis Ababa

Table 1: The change in the national health and health-related indicators over 30 years [8,9]

Health indicators	1990	2020	Difference in %
Health facilities:			
Hospitals (hospital to population ratio)	**96** (1:625,000)	367 (1:280,000)	282
Health centers (health center to population ratio)	**282** (1:213,000)	3777 (1:27,000)	1239
Health workers:			
Physicians (physician to population ratio)	**1415** (1:42,000)	**12,314** (1:8,000)	770
Nurses (nurses to population ratio)	**4774** (1:13,000)	**69,550** (1:1,500)	1357
Reproductive, maternal and child health:			
Modern contraceptive utilization in %	6	41	583
Total fertility rate	6.91	4.43	36
Antenatal care (at least one visit) in %	25	74	196
Skilled person attended delivery in %	5	50	900
Maternal mortality ratio/100,000 live births	1250	401	68
Children fully vaccinated coverage in %	28	93	65
Perinatal mortality rate/1000 births (2000 Vs 2016)	52	33	37
Neonatal mortality rate/1000 live births	50	33	66
Under 5 mortality rate/1000 children	204	59	71
Highly fatal communicable diseases:			
Tb incidence/100,000 population	367	135	63
Tb mortality rate/100,000 population	89	5	94
HIV prevalence in % (1997 Vs 1990)	3.4	0.9	77
Malaria case fatality rate/100,000 population at risk	101	4	96
Other indicators:			
Life expectancy	46.9	68.8	47
Government expenditure on health*	5.6	13.2	134
Population in million	60	103	68

* As percentage of total budget

8 Health and health related indicators, Ethiopia (2000-2020); HSTP II, 2020; EDHS 2000-2019; WHO estimates, 2015.
9 Misganaw A, et al. Progress in health among regions of Ethiopia, 1990–2019: a sub national country analysis for the Global Burden of Disease Study 2019. The Lancet, 2022. https://www.thelancet.com/journals/lancet/article/PIIS0140-6736

Table 2: Pre-conflict baseline situation of some of the maternal and child health status indicators in the three most conflict-affected regions (Tigray, Afar and Amhara). [10,11]

Indicator	National	Tigray	Amhara	Afar
Use of family planning method	41%	37%	50%	13%
Unmet need for FP	22%	18%	33%	25%
Deliveries by skilled birth attendant	63%	73%	56%	28%
ANC 4+ visits	69%	64%	51%	46%
Caesarean delivery	5.4%	6.9%	7.0%	2.7%
Neonatal mortality rate/1000 live births (LB)	30	28	46	22%
Under-five mortality/1000 LB	59	43	69	58%
Coverage of fully vaccinated	90%	75%	87%	58%

DHIS-2 *=District health information system; EDHS = Ethiopian demographic and health survey*

3. IMPACT OF THE CONFLICT

This section takes stock of the impact of the conflict on the health sector from November 2020 till December 2021 in Tigray, Afar, Amhara, Benishangul-Gumuz, Oromia regional states, and Konso zone in the SNNPR region with emphasis on the population affected, damage to public health infrastructure, and disruption to health service delivery.

3.1. POPULATION AFFECTED BY THE CONFLICT

The conflict has brought devastation to human life - both from direct physical harm and indirect effects due to the collapse of the health system. Overall, out of nearly 71 million people in the aforementioned regional states and Konso zone in the SNNPR, an estimated 23.8 million people were affected by the conflict between 2020 and 2021. The conflict has caused an influx of IDPs, strained the health system, worsened maternal, child health and nutrition outcomes, and crippled delivery of basic and emergency health services in the conflict affected areas.

As of September 2021, the government reports indicate that 5,698,212 people have been forcibly displaced from their home or area of residence (Figure 1).[12] From four regions (Amhara, Oromia, Afar, and Benishangul-Gumuz), 799,260 of the IDPs were under-5 children. It was also reported that 477,048 (18% of the total expected in the specified areas) pregnant and lactating women (PLW) were displaced and unable to access basic maternal health services (Figure 2).

10 DHIS2 (District health information system) Ethiopia, 2020
11 EDHS (Ethiopian demographic and health survey), 2019
12 This figure excludes climate-induced displacement due to floods or drought.

Figure 1: Estimated number of internally displace persons (IDPs) between 2020 and 2021 in five regions and one zone.

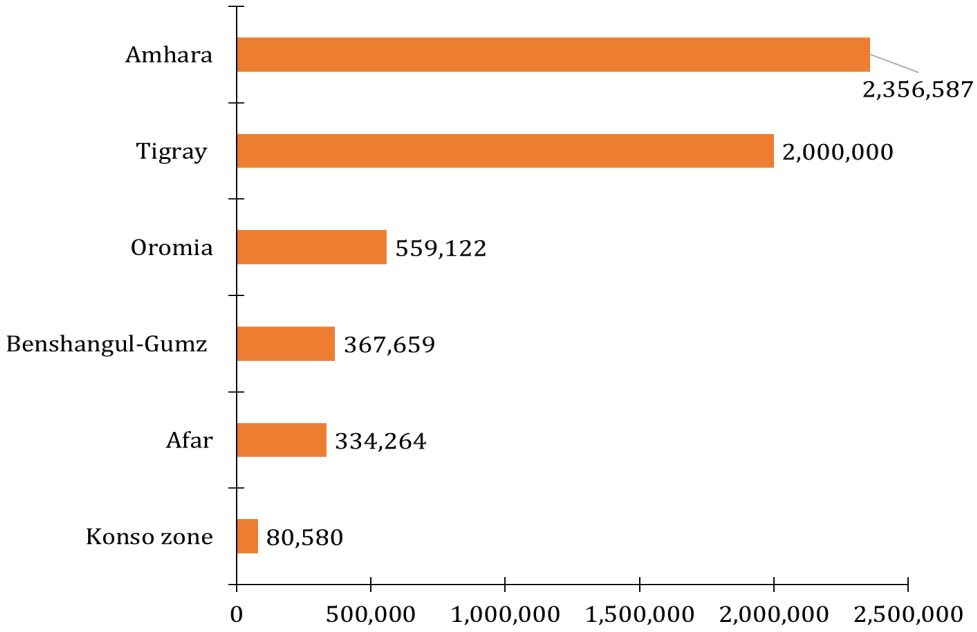
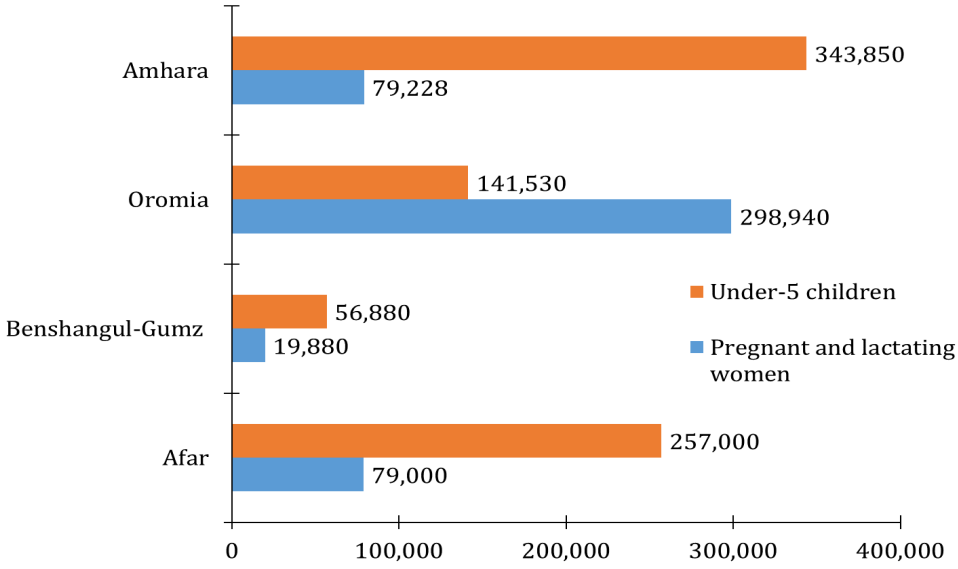


Figure 2: The number of under-5 children and pregnant and lactating women among the total IDPs in four regions, 2020-2021.



In **Tigray region**, 4.5 million people have been directly or indirectly affected by the conflict. Of these, more than 2 million people were displaced from their home or areas of residence.[13] In **Amhara region** (according to the RHB report), an estimated 8.9 million people have been affected by the conflict and _more than 2.3 million people were displaced. In **Afar region,** an estimated 1.4 million people have been affected by the conflict, thereby requiring emergency

13 Tigray emergency recovery plan, June 2021

nutrition response and, more than 300,000 people have been displaced from their homes.[14] **Oromia regional state's** reports indicated that 8.6 million people have been affected by the conflict and 559,122 people displaced. **Benishangul-Gumuz** reported 367,659 IDPs in 13 IDP sites[15], and **SNNP** region reported 80,580 IDPs primarily related to the conflict in Konso. [16]

Women, children, and the youth bear the brunt of forced displacement. The proportion of the conflict-affected population was incomparably higher in Tigray and Afar, but the actual number of people affected in Amhara and Oromia regions is much higher, signaling the complex nature of the population distribution impact of the conflict and the need for a context specific response plan. (Table 3).

Table 3: The number and proportion of populations affected by the conflict in the respective regions; 2020-2021. (Source for population estimate: Health and health-related indicators; 2020/21)

Region/Zone	Total population in the region in million	Population affected by the conflict in million	Proportion
Tigray	5.6	4.5	80.4
Afar	2.0	1.4	70.0
Amhara	22.5	8.9	39.6
Oromia	39.1	8.6	22.0
Benishangul G.	1.2	0.4	33
Konso zone	0.4	0.08	20.0
Total	**70.8**	**23.88**	**33.7**

Basic social service delivery such as health and education had been greatly affected in Tigray and other conflict affected areas in Afar and Amhara regions, particularly affecting already vulnerable groups such as mothers and children. According to the Tigray Emergency Recovery Plan (June 2021), only 37% of the health facilities had some basic health services. Maternal services (such as antenatal care and birth delivery) were provided only in 17% of the health facilities, and only 16% of the health facilities in the region provided immunization services. Access to drugs remained critically low (at 16% of the requirements). Malnutrition levels were at 2% for severe acute malnutrition (SAM) and 14-19% for moderate acute malnutrition (MAM). According to WASH Cluster estimates, 250 motorized water pumping systems in towns were non-functional. [17]

In general, the human cost of the conflict in the aforementioned regions is staggering. Moreover, little is known about the health condition of the people left behind and returnees to the ongoing conflict areas. The severe disruption of the health infrastructure and services left an estimated 3.8 million people without adequate access to essential medicines and basic care. [18]

14 Conflict Situation Updates, Afar, 17 November 2021
15 Benishangul Gumuz regional health bureau report
16 SNNP Region Health Bureau report
17 Government of the Federal Democratic Republic of Ethiopia (June 2021): Tigray Emergency Recovery plan.
18 Tigray emergency recovery plan, June 2021

3.2 DAMAGE TO PUBLIC HEALTH INFRASTRUCTURE

The available reports indicate that the primary healthcare system was significantly damaged in most of the conflict affected districts/woredas. A total of **76** hospitals, **709** health centers and **3,217** health posts have been damaged or looted as a result of the conflict throughout the country (Table 4)[19]. In addition to the damage/looting to health facilities, blood banks, Woreda Health offices as well as ambulances in the conflict affected areas were also damaged or looted (Table 5).

In the **Amhara region**, the conflict affected **40** hospitals, **452** health centers and **1,728** health posts. Furthermore, **5** blood banks, **8** Zonal health Departments, and **56** Woreda Health offices were damaged. In three regions (Amhara, Oromia, and Afar), **248** ambulances were damaged or looted. Of which, **124** (50%) were damaged or looted from Amhara region.

In the **Afar region**, the damage/looting affected **2** hospitals, **21** health center and **59** health posts. In addition to the physical infrastructure, drugs, medical supplies, equipment, ambulances, motorbikes and patient and health facility records that were available in those facilities during the conflict have been damaged or looted.[20]

In the **Oromia** region, the delivery of basic health care services, particularly by health posts and health centers, was severely affected due to the physical damage to infrastructure and the lack of medical supplies. The Oromia regional report shows (as of December 2021) that **107** health centers and **685** health posts were unable to deliver basic health services. In addition to damage to the health facilities, **108** health workers were forced to leave their duty station with pending reports on the number of injured and dead. Furthermore, **14** motor bikes and **53** ambulances were damaged, looted or burned.[21]

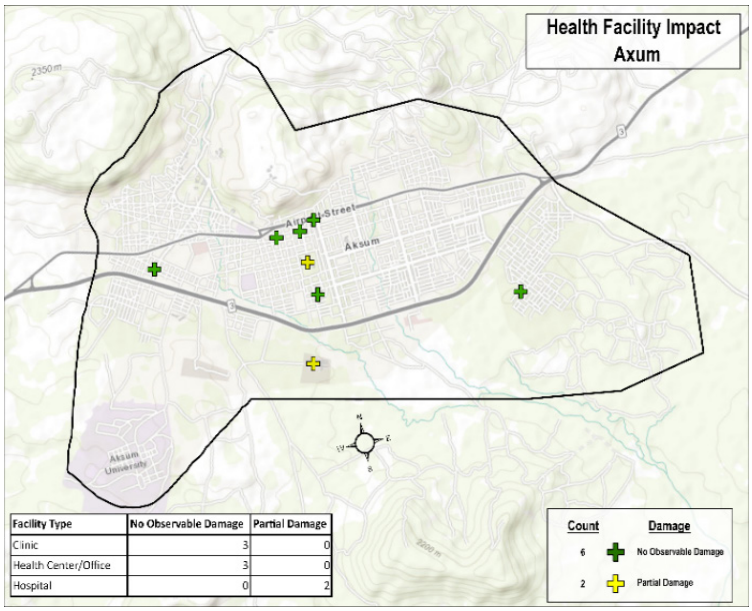
In the **Benishangul Gumuz region**, **16** health centers were affected, out of which **12** were fully damaged and **4** were partially damaged. A total of **172** health posts were affected out of which **155** were fully and **17** were partially damaged. Four health centers were burned, and drugs and medical devices were looted.

In **Tigray** region**,** the health service is believed to be significantly hampered as health facilities in the region experienced damage due to the conflict. Based on available data reported in Table 4, about 83% hospitals in the region are damaged – though majority of this is a partial damage. On the other hand, around half of the health centers and 565 health posts (76 percent) in the region are also reported to be damaged due to the conflict.

19 MOH, Health Emergency Recovery plan in Conflict areas
20 Afar regional heath bureau report: Conflict related damage and loss assessment
21 Oromia regional health bureau administrative report.

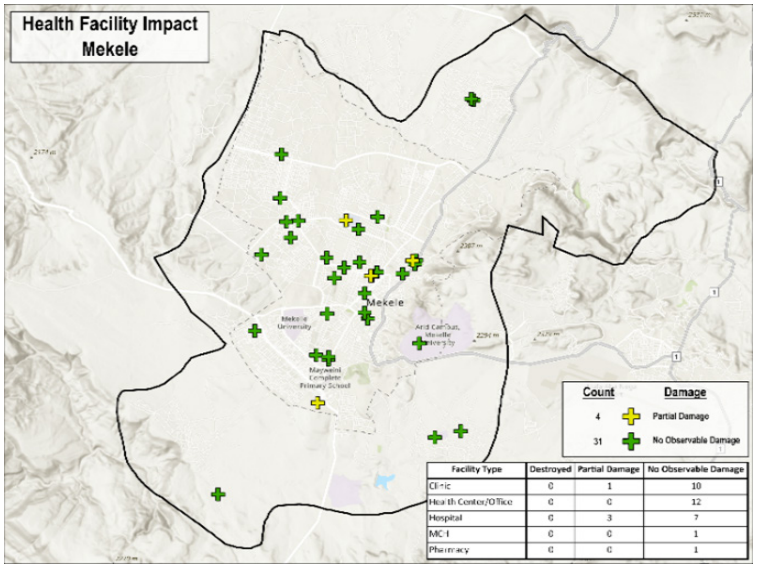
A satellite imagery analysis was also conducted for some areas in Tigray region; in particular, for the towns of Adigrat, Axum and Mekelle. Figures 4, 5, and 6 present the findings from this analysis. The satellite imagery located eight health facilities in the town of Axum (Figure 4) of which 2 hospitals are detected to have been partially damaged whereas the remaining 6 are found not to have experienced observable damage. In Mekelle (Figure 5), out of the total 35 health facilities located through satellite imagery, 4 facilities are found to have been partially damaged whereas the remaining 31 health facilities have experienced no observable damage. The situation for facilities in Adigrat town is different with 7 health facilities found to be destroyed out of the total 11 health facilities located through the imagery analysis (Figure 6).

Figure 3: Satellite imagery; map of health facilities in Axum



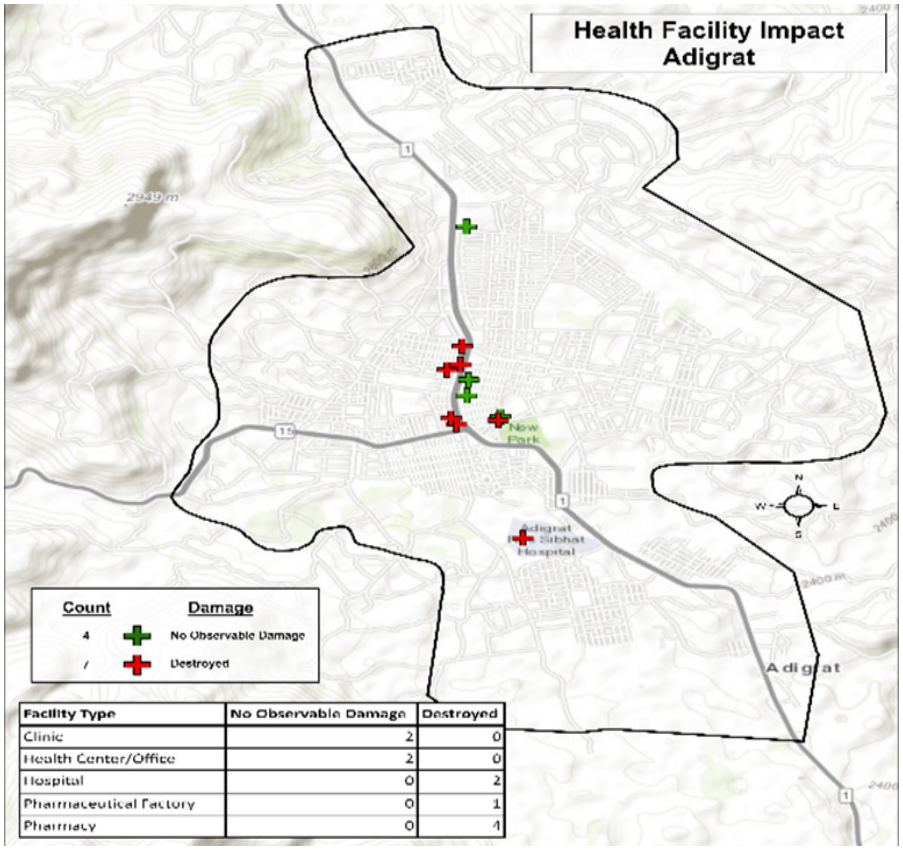
Facility Type	No Observable Damage	Partial Damage
Clinic	3	0
Health Center/Office	3	0
Hospital	0	2

Figure 4: Satellite imagery; health facilities in Mekelle



Facility Type	Destroyed	Partial Damage	No Observable Damage
Clinic	0	1	10
Health Center/Office	0	0	12
Hospital	0	3	7
MCH	0	0	1
Pharmacy	0	0	1

Figure 5: Satellite imagery; health facilities in Adigrat



Facility Type	No Observable Damage	Destroyed
Clinic	2	0
Health Center/Office	2	0
Hospital	0	2
Pharmaceutical Factory	0	1
Pharmacy	0	1

In addition to direct damage to public health facilities, the conflict has also brought devastation to private health facilities and pharmacy/drug stores in the conflict affected areas. Two pharmaceutical stores belonging to the Ethiopia Pharmaceutical Supply Agency (EPSA) (one in Dessie hub in Amhara and the other in Afar region) were damaged and completely looted. In Amhara, Afar and Konso, **466**, **3** and **1** private health facilities were damaged and looted , respectively.

Beyond the physical damage of the health infrastructure (including health posts, health centers, hospitals, Woreda health offices, Zonal health departments, blood banks, EPSA hubs), the damage to or looting of medical equipment (X-ray machines, Ultrasound machines, laboratory machines, Microscopes, and computers) and ambulancesespecially in the Amhara and Afar regional states, was extremely devastating. Electric generators, kitchen equipment, and vehicles were also primary targets for looting. Similar damage and lootings were reported from Tigray regional state but could not be verified on the ground due to inaccessibility of the health facilities. Detailed information on infrastructure damage in the four regions (Amhara, Afar, Oromia and Benishangul-Gumuz) is available in Annex 1 (A-D).

Table 4: Percentage of physically damaged health facilities out of the total available, by region.[22]

Region	Health Facility Type	Partially damaged	Complete damage	Total	Percentage
Afar	Hospital	2	---	2/7	28.6
	Health Center	20	1	21/97	21.6
	Health Post	56	3	59/343	17.2
Amhara	Hospital	38	2	40/88	45.5
	Health Center	429	23	452/877	51.5
	Health Post	1642	86	1728/3565	48.5
Benishangul G.	Hospital	---	---	---	---
	Health Center	4	12	16/60	26.7
	Health Post	17	155	172/424	40.6
Oromia	Hospital	---	---	---	---
	Health Center	105	2	107/1411	7.5
	Health Post	549	136	685/7099	9.6
Tigray	Hospital	32	2	34/41	82.9
	Health Center	107	6	113/226	50.0
	Health Post	537	28	565/743*	76.0
Konso zone	Hospital	---	---	---	---
	Health Center	---	---	---	---
	Health Post	4	4	8/64	12.5
Total**	Hospital	72	4	76/136	55.9
	Health Center	665	44	709/2671	26.5
	Health Post	2,805	412	3,217/12,238	26.3

* Extrapolated from the health centers damage

** Number of specific facilities is not included in the denominator if that specific type of facility isn't damaged in the region (e.g., number of hospitals in B/G, number of Health Centers in Konso zone are not part of the denominator)

As indicated in Table 5 below, the damage to health infrastructure goes beyond health facilities. In total, 5 blood banks, 2 EPSA stores, 68 woreda health offices & zonal health departments, and 248 ambulances were either looted, damaged or destroyed due to the conflict.

Table 5: Infrastructure damage beyond health facilities

Facility type	Amhara	Afar	Benishangul Gumuz	Tigray	Oromia	Total
Blood Bank	5	---	---	---	---	**5**
EPSA stores	1	1	---	---	---	**2**
Woreda/Zonal Health Office	64	---	4	---	---	**68**
Ambulances	124	20	51	---	53	**248**

22 The source of the denominators is MoH health and health related indicators, 2019/2020.

The cost of infrastructure damage based on the type of health facilities and the magnitude of damage is depicted in Table 6. In summary, the total cost of infrastructure damage was estimated to be 1,420.02 million USD, consisting of 680.63 million USD for partially damaged and 739.38 million USD for completely damaged (destroyed) infrastructure. Besides the physical infrastructure, these costs include medical equipment costs, drug and supply cost for making the facilities operational for one year, and other program specific costs.

The largest share of the estimated cost is for health centers (501.19 million USD) followed by general & specialized hospitals (342.54 million USD), and primary hospital (277.98 million USD) while the costs for health posts and other health systems 175 and 120 million USD respectively.

Table 6: Cost of damage to the infrastructure (USD, multiple of million)

Type of Facility	Partial Damage	Complete Damage	Total
Health Post	109.07	66.85	175.92
Health center	260.62	240.57	501.19
Primary hospital	123.11	156.69	279.80
General & Specialized hospital	150.72	191.82	342.54
Other Health System (Ambulance, EPSA store, etc)	37.11	83.45	120.56
Grand Total	**680.63**	**739.38**	**1,420.02**

3.3 IMPACT OF THE CONFLICT: Beyond infrastructure damage

The estimate of IDPs by the regional states was nearly 8 times higher than the 2019 global average. Globally, approximately 71% of IDPs are children and women.[23] Thus, women, children and girls are highly vulnerable IDPs and are at increased risk of multiple problems, including sexual and gender-based violence (SGBV), and associated unplanned pregnancy, acquiring STI (including HIV), exacerbated gender inequality, physical and long-lasting psychological trauma, unlawful detentions, and lack of obstetric care.[24,25] Adolescent girls in IDP centers and armed conflict areas, in particular, are at increased risk of early sexual activity due to rape, transactional sex as means of livelihood and safety.[26,27]

There is also a large body of data that has shown the increased mortality of under-five children in IDP centers due to malnutrition, malaria, diarrheal and respiratory diseases, and other communicable diseases. Older IDPs suffer from physical and psychological trauma and the worsening of chronic illnesses (oftentimes associated with absent or reduced access to health

23 Internal displacement monitoring center. Global report on internal displacement 2021.
24 Percival V, Richards E, MacLean T, Theobald S. Health systems and gender in post-conflict contexts: building back better? Conflict and Health 2014, 8:19. Accessed in March 2022 from: http://www.conflictandhealth.com/content/8/1/19
25 ICRC. Protracted Conflict and Humanitarian Action: Some Recent ICRC Experiences. 2016. Accessed in March 2022 from: https://www.icrc.org/sites/default/files/document/file_list/protracted_conflict_and_humanitarian_action_icrc_report_lr_29.08.16.
26 Cazabat C. The multidimensional impact of internal displacement. The ripple effect: economic impacts of internal displacement. 2018. Internal Displacement Monitoring Centre.
27 Kerner et al., Adolescent sexual and reproductive health in humanitarian settings, Forced Migration Review, 2012.

care and medication). Adult men also sustain physical injuries and are at increased risk of death and disabilities directly caused by armed conflict and physical violence.[28] Armed conflicts disrupt the regular preventive, promotive, and curative health services, thereby increasing communicable diseases outbreaks, resurgence of eliminated/eradicated diseases, and food crises, affecting more children and women than men. [29,30,31]

According to the International Office for Migration's (IOM) Displacement Tracking Matrix recent report, Ethiopia has been ranked at the top three countries in the world for having high level of IDPs, across different parts of the country. All the 10 regional states and the two city administrations have embraced IDPs for several months. The contribution of the armed conflicts in the northern and western parts of the country was exceptionally high.

In addition to displacement of people in states of armed conflicts, violations of international humanitarian law (IHL) or fundamental human rights of the civil society are quite common, and many are unaccountable to justice. These tend to occur despite the fact that IHL prohibits "attacking on civilians and civilian property, starving of civilians as a method of warfare, reprisals, the use of civilians as human shields, the destruction of objects essential to their survival, and the obstruction of relief supplies and assistance necessary for the survival of the civilian population".[32] When such a humanitarian crisis is compounded by health risks associated with interruption of regular preventive and curative services in war-affected areas, the physical and psychological traumas, and to the worst the civil human life loss is oftentimes exceedingly high.

The suffering due to the damage to the primary healthcare system following the armed-conflict in Ethiopia is protracted and getting more catastrophic in areas where access to humanitarian and emergency health service needs are limited, as in the case of north Afar, north Amhara, and the whole Tigray regional state for several months. There is a higher risk of epidemics or outbreaks from vaccine preventable diseases and other infections. In essence, beyond the conflict-related traumatic and fatal casualties, there will be an increase in vaccine-preventable diseases, diarrheal disease (including cholera), influenza and malaria outbreaks and a surge in tuberculosis, and meningitis.

The full picture of the multidimensional health impact of the conflict experienced in Ethiopia is still unknown; however, one can provide estimates based on the number of displaced people and previous similar experiences in other parts of the world.

28 HSRP: Human Security Report 2005. Oxford: Oxford University Press; 2005.
29 Owoaje, A review of the health problems of the internally displaced persons in Africa; Nigerian Postgraduate Medical Journal, 2016.
30 Kruk ME, Freedman LP, Anglin GA, Waldman RJ. Rebuilding health systems to improve health and promote state building in post-conflict countries: a theoretical framework and research agenda. Social Science & Medicine,2010; 70: 89–97.
31 Waters H, Garrett B, Burnham G. 2007. Rehabilitating Health Systems in Post-Conflict Situations. WIDER Research Paper 2007/06. United Nations University. Accessed in March 2022 from: http://hdl.handle.net/10419/63390.
32 ICRC. IHL database. Rule 156. Serious violations of international humanitarian law constitute war crimes. https://ihl-databases.icrc.org/customary-ihl/eng/docindex/v1_rul_rule156.

Psychosocial impact of the conflict

Mental health problems (particularly, depression, anxiety, and post-traumatic stress disorders) associated with the suffering caused by the conflict, psychological stress, and substance use are highly prevalent phenomenon among conflict-affected and displaced people.[33]

Following protracted displacement as well severe psychological stress associated with frustrations of ongoing conflict, the retunees contend with ongoing pressures including discovery of ghost villages, and damaged personal and public properties. The less attention given by humanitarian and governmental organizations, and probably stigmatization and discrimination by those who stayed at home during the conflict, may exacerbate the stress and its complications. As the focus of the government or rival group is on demobilization, disarmament, and reintegration of armed forces, the returnees are overlooked during the post-conflictperiod .

In general, beyond the immediate and long-term economic costs of the large scale civil and armed conflicts in recent years in Ethiopia, the casualties, physical and mental health impacts on the displaced and left behind people are immeasurable and may take years to rehabilitate and bring back the victims to the pre-conflict state.[34]

3.3.1 HUMAN WORKFORCE FOR HEALTH

The conflict-related crisis also disrupted the local and national health system due to the displacement of the health workforce. Available reports showed that **10,160** health workers have left the conflict area in Oromia, Amhara and Benishangul Gumuz, of which, **9,888** were from Amhara region.[35] Therefore, it is not only community members but also health professionals serving the community who have been displaced due to the conflict.[36] A report by the Afar regional health bureau shows that 3 health workers were killed in connection with the conflict. A Doctors of the World – France in June 2021 report showed that only 30 percent of healthcare workers in Tigray Region were working in the healthcare system due to security and access restrictions.[37] These all happened even though health workers are badly needed in conflict affected areas to treat wounded soldiers and civilians without discrimination on either side of the fighters or supporters.

33 Panter-Brick C. Conflict, violence, and health: setting a new interdisciplinary agenda. Social Science & Medicine, 2009; 70: 1–6.
34 Rutherford S, Saleh S. Rebuilding health post-conflict: case studies, reflections and a revised framework. Health Policy and Planning, 2019; 34(3): 230–245.
35 MOH, Health Emergency Recovery plan in Conflict areas
36 MOH: Conflict related health emergency response three months plan
37 Doctors of the World – France, Exploratory Mission Tigray Crisis, June 2021

3.3.2 HEALTH SERVICE DELIVERY

As noted earlier, the disruption to the primary health care services and referral mechanism has resulted in the cessation of routine maternal, child health, nutrition preventive services, and treatment of communicable and non-communicable diseases. As a result, pregnant mothers have lost timely access to necessary and basic antenatal care and institutional delivery services; children have lost access to basic child health services, including immunization, Vitamin A supplementation, screening and treatment for malnutrition, and treatment of other childhood illnesses. People living with HIV have missed their regular drug and treatment follow ups. Discontinuation of regular follow-ups and interruptions in refill of drug for chronically ill patients for an extended period carries increased risk of drug resistance, morbidity, and mortality.

While there is limited data on the nutrition situation due to security restrictions and disruptions in health services, overall trends indicate an increase in Severe Acute Malnutrition (SAM) admissions in conflict-affected areas. The displacement and subsequent food insecurity have significantly increased the risk that acute under-nutrition will continue to escalate in the immediate term and chronic under-nutrition will increase over time, which will have major implications on maternal and child mortality and morbidity, and future productivity. The nutritional status of children and women of reproductive age was already very low in the conflict affected areas, which is now likely to further worsen due to the conflict.[38]

A rapid assessment conducted among IDPs in Awra, Ewa, and Chifra woredas in Afar showed critical levels of under-nutrition among children 6-59 months with 20 percent proxy SAM and 49 percent proxy Global Acute Malnutrition (GAM), which is much higher than the emergency threshold level (10 percent or higher).[39] Mothers in IDP camps were reported to have reduced breastfeeding. According to community interviews, IDPs were not getting sufficient access to adequate food, health services, water, and sanitation. The World Food Program (WFP) conducted a rapid nutrition assessment in four woredas of North Showa, Oromia Special Zone, South and North Wollo in July 2021 that indicated the proxy GAM was 24 percent among young children. Focus group discussions and interviews revealed food shortages, lack of basic needs (shelter, water, sanitation), and poor health and nutrition linkages.

Gender-based violence has also become more prevalent, particularly in areas where nutrition service delivery points were inaccessible or unsafe. Furthermore, IDPs often faced barriers in accessing basic services, including treatment for Severe Acute Malnutrition (SAM) and psychological support.[40] SGBV cases have been reported and the availability of the basic pillars

38 In 2019, more than one third of children under-five were stunted, or chronically undernourished, and four regions had stunting rates above 40 percent—Tigray (48 percent), Afar (42 percent), Amhara (42 percent), and Benishangul-Gumuz (41 percent). In 2019, the national prevalence of wasting, or acute malnutrition, stood at 7 percent (and 1 percent with severe acute malnutrition) but was at 'critical' or 'serious' levels (at 10 percent or higher) in three regions—Somali (21 percent), Afar (14 percent), and Gambela (13 percent).
39 Proxy GAM by MUAC is the prevalence of children ages 6-59 months considered Severely Acutely Malnourished (SAM) or Moderately Acutely Malnourished (MAM) based on their mid-upper arm circumference measurements.
40 OCHA, Humanitarian Needs Overview: Ethiopia, February 2021

of SGBV response services – quality case management, psychosocial support, medical care, legal support, and safety services - remained limited.

An assessment done by the Tigray RHB in September 2021 showed that coverage of essential health and nutrition services have sustained a significant hit due to the conflict. Based on the assessment, RMNCH service was being provided in only 55 percent of the health facilities, whereas proportion of facilities providing nutrition services are not much different, where only about 50 percent provided the service. On the other hand, the assessment shows that healthcare services for communicable diseases were available only in 48.5 percent of the health facilities while service for non-communicable diseases was provided in 45 percent of the health facilities. In addition, clinical and surgical services were being provided in only 17 of the total 200 health facilities included in the assessment.[41]

3.3.3 HEALTH INFORMATION, GOVERNANCE, AND LEADERSHIP

The health management information system has collapsed in the affected areas as the computers and patient medical record systems have been looted or destroyed. Woreda health office records and equipment were damaged or looted, and key staff members at the district and Zonal health offices were displaced. In addition, data recording and reporting has been hampered due to the damage to the data capturing and reporting systems and infrastructure. The crisis on health information contributed to severe impediments to leadership, governance, and accountability of the health system. Communication and electric systems were interrupted for months in the armed-conflict areas.

3.3.4 HEALTH FINANCING

Prior to the conflict, there was a functional healthcare financing system in the conflict affected areas that provided equitable health service access to community members, including the poorest of the poor. These health financing schemes have collapsed due to the conflict, including the fee exemption which allows free access to high impact health interventions (childbirth, immunization, antenatal care, diagnosis and treatment of TB, HIV and Malaria) and fee waivers for an estimated 2 million people in the conflict affected districts. The conflict has totally damaged community-based health insurance (CBHI) offices in 67 Woredas and rendered the scheme non-functional. Office equipment, CBHI members' data and transport (motorcycles) were damaged or looted.

41 Tigray Regional Health Bureau, Health Facilities Assessment Report, September 2021

This means that an estimated 874,000 households and 4,220,678 community members have lost their health insurance coverage. The economic impact of the conflict on households has not just affected households' ability to directly pay for health services but also makes it difficult to pay health insurance premiums. The population eligible to receive fee waivers to access health services has increased significantly, which in turn increases the health expenditure demands on the federal and regional states.

4. CURRENT GOVERNMENT ACTIONS AND RESPONSE ANALYSIS

In December 2021, the GoE, with support of the international community, deployed all possible efforts to address humanitarian needs and restore some essential services, including health services and power and communication lines. The GoE developed a three-month health recovery and restoration plan, the major objective of which is to enhance rapid recovery of the health care system by restoring services in conflict affected areas, in collaboration with different stakeholders. The focus of the restoration and recovery plans includes restoration of health infrastructure and essential health services, ensuring pharmaceuticals and logistics support, health information system and human resource management, and health financing and resource mobilization.

The MoH established a national taskforce to coordinate, lead, and oversee the overall health emergency recovery in the conflict affected areas. The taskforce has been working closely with the regional health bureaus to restore health facilities using a phase-based approach[42]. As the majority of the health facilities were damaged, Mobile Health and Nutrition Teams (MHNT) were established and deployed to provide the basic services. In addition to the MHNT, temporary IDP clinics were established to provide health services in large IDP sites. Community members and security personnel who were affected by the conflict have been providing free medical services.[43]

The MOH has distributed pharmaceutical supplies to health facilities in conflict affected areas and mobilized medical equipment, supplies and drugs from donors, Ethiopian diaspora, and other groups. Since the breakout of the conflict in October 2020, the MOH has made strides to provide emergency health services at all levels of the health system. In Amhara, 33 MHNTs have been mobilized and 12 temporary clinics have been set up and are functioning. The Find and Treat (F&T) nutrition campaign went well in Sekota, Ziquala, Sahila, and Gazgibela of Waghimra zones. Supplies for Community Based Management of Acute Malnutrition (CMAM) were also being distributed. However, in general, all of these efforts and supplies were not meeting the very high demand.

42 HEALTH EMERGENCY RECOVERY PLAN IN CONFLICT AFFECTED AREAS, MOH
43 FMOH, Administrative report, activity report of the MOH to restore the service in collaboration with regions and development partners (Amharic version)

The MOH has deployed more than 2000 volunteer health workers to more than 200 health facilities in the conflict-affected areas. This included a variety of professionals including deployment of more than 110 physiotherapy professionals according to MoH reports. Federal level hospitals, Addis Ababa hospitals, University hospitals, and private health facility associations have been heavily engaged in the twinning and restoration of services in damaged facilities. Ambulances were pooled and deployed to the war/conflict afflicted areas, and an additional 114 ambulances that were not functional were repaired and deployed.

In order to provide better health services to IDPs, temporary clinics were established (15 in Amhara and 5 in Afar), while MHNTs (50 in Amhara and 13 in Afar) were formed to provide basic health services to the hard-to-reach population groups. With the raising cases of GBV, 16 centers (9 one stop centers and 7 Integrated GBV centers) were established to respond to and treat GBV survivors. The Ministry of Health through the Ethiopian Pharmaceuticals and Supplies Agency (EPSA) have provided drugs and supplies worth more than 600 million birr to support the provision of facility-based health services and services for IDPs. In Afar, the Government led Targeted Supplementary Feeding Program (TSFP) intervention is still ongoing in all priority Woredas with support from WFP.

Regarding support given to the Tigray region, the Ministry of Health kept a stock of pharmaceutical supplies worth more than half a billion birr (618,378,674.64 ETB) at Mekelle and Shire hubs in the Tigray region as of Mid-June 2021 during the unilateral ceasefire declared by the Federal Government of Ethiopia. This supply is expected to cover the health care demand for a period of six month, i.e., from June-December 2021.

The MOH has also provided nearly 850,000 measles vaccines to the Tigray region. The campaign was done in collaboration with UNICEF and WHO. In addition, 2,120 metric ton of water treatment chemicals and sanitation materials were distributed through partners; 1,880 personal protective equipment and dignity kits were also distributed.

Since July 2021, 658 metric tons of medicines and medical equipment were delivered by 18 trucks through 7 organizations: UNFPA, WHO, MSF, IOM, UNICEF, FH, and CST. The Ethiopian Red Cross delivered 3,565 kilograms of emergency drugs and 42 health emergency kits (different type of medicine and medical equipment) through EU-HAB. 320 cartons of RUTF (Ready to Use Therapeutic Food) for children and 350 cartons of therapeutic foods (Plumpy-Nuts) were distributed for malnourished children and pregnant and lactating mothers. In addition, a total of 5,766 metric tons of high diet supplementary food and 37,976 metric tons of food were distributed for vulnerable groups. From July to December 2021, health and nutrition cluster partners supported more than 1.6 billion worth supplies directly to the Tigray region.

5. PRIORITY HEALTH NEEDS

This section highlights the main needs that must be addressed in a phased approach to respond to the devastation outlined in the preceding analysis. The needs are strategic, responsive, aligned with existing government strategies, and as far as possible, they build on initiatives that were already in the pipeline. The proposed goal of this health sector recovery and rehabilitation plan (HSRP) for the conflict affected areas of Ethiopia is to decrease mortality and morbidity by increasing access, availability and quality of health services, and ensure continuity of the preventive and curative services.

The HSRP has the following objectives: (a) Increasing access to and availability of immediate health services; (b) Restoring the systematic delivery of essential health services in humanitarian settings; and (c) Increasing access, availability and coverage of a basic/essential package of health services. The response follows a sequential, phased-based comprehensive approach on which basic/essential health services under priority categories of programmatic and health system building blocks commence iteratively. Restoring and/or maintaining access to essential lifesaving services as soon as possible is central to the health sector response to the conflict. The interventions will expand the coverage and scope of an Essential Package of Health Services, with sustainable financing, including specific attention for the most vulnerable segment of the population.

The health sector needs are assessed and identified across three categories, namely (a) Policy needs; (b) Institutional strengthening needs; and (c) Investment needs. These three categories of needs are organized according to the following phases/timelines: (a) early recovery needs (months 0-6); (b) short-term needs (months 6- 24), and medium-term needs (years 3 to 5).

Pillar 4 of the "Tigray Emergency Recovery plan by Government of the Federal Democratic Republic of Ethiopia (June 2021) is given due consideration. It was proposed to restore essential social services in coordination with humanitarian assistance. The health sector intervention, in particular, includes tackling the health and nutrition crisis, including enabling gradual restoration of health services by rapidly expanding access to safe WASH services. The planned activities include "restoration of health infrastructure with safe access for women; restoration and expansion of child, maternal and sexual and reproductive health services; restoring surveillance and early warning activities; reinstating community health worker networks; rehabilitation of key damaged water schemes with safe access for women; scale-up of hygiene promotion". These can also be applied to other conflict-affected regions.

5.1. POLICY NEEDS

The overall health sector recovery response requires "one plan" where the comprehensive needs are well articulated, and efforts and contribution of government, development partners, private sector, community members and other stakeholders are reflected and well-coordinated.

Early recovery (months 0-6 months):

The following policy needs are identified for the early recovery phase:

- **Ensure the legal framework and procedures** for the ongoing restoration initiatives are in place under the existing health policies, strategies and guidelines for health emergency recovery and disaster management
- **Produce updated and context appropriate standard operating procedures, guidelines, and protocols**
- **Devise policies for joint and multi sector planning and implementation** to tackle the current crisis and upcoming health emergencies

Short term recovery (months 6–24):

- **Strengthen comprehensive emergency management systems** through endorsement of the draft regulation and structure for integrated clinical and public health emergencies related to the prevention and control of outbreaks, natural and man-made disasters, and conflict related health risks.
- **Strengthen the humanitarian-development nexus (HDN)** through close collaboration with the national disaster prevention and preparedness commission (DPPC) and other stakeholders to coordinate partners towards the support of a harmonized health system recovery. This also includes negotiation with relevant donors and partners to deliver essential services and provide ongoing support for the effective transition from humanitarian response to development and sustainability efforts.
- **Develop policy options on the areas of health financing arrangements** (towards Universal Health Coverage), insurance and provider payment mechanisms, and alternative revenue sources for the conflict affected areas

Medium term recovery (3-5 years):

- **Implement and scale-up innovative and context specific approaches.** Innovative approaches include community engagement and twinning for service restoration, which can be scaled up after further enrichment through additional guidelines/frameworks. This will widen the scope to cover other programmatic areas and needs that can be supported by additional financial resources

- **Document lessons learnt to strengthen knowledge management** including preparation of human focused stories and policy briefs.

5.2 INSTITUTIONAL STRENGTHENING NEEDS

The core objectives of the institutional strengthening activities are to ensure a coordinated effort in the response to conflict related health needs of affected communities. With that action, the right institutions and capacity will be in place to address the gaps in the conflict related response, recovery, and rehabilitation efforts. Due to the multi-faceted nature of the conflict, inter-ministerial coordination should be strengthened to address all aspects of the damage in a coordinated and resource-efficient way.

Early recovery (Months 0-6):

This period requires the strengthening of different institutional coordination platforms at all levels of the health system, including regional coordination cells and mainstreaming and aligning efforts to strengthen partnership and coordination with development partners and other stakeholders. The prioritized interventions are as follows:

- **Activate a high-level post disaster health sector governance and leadership framework** that outlines roles, responsibilities, and commitments, starting from reviewing current arrangements to assess where they can best be leveraged

- **Strengthen health emergency management coordination taskforces** at each level (federal, regional, zonal and woreda) and establish/strengthen the comprehensive emergency coordination centers at regional and zonal levels

- **Engage grass roots community representatives** such as community health agents (CHA), and village health leaders (VHLs) to support the resumption of health services, enhance local knowledge management, and design appropriate interventions that will facilitate the health system recovery

Short term recovery (months 6–24):

- **Strengthen governance and coordination at all levels;** this includes multi-sectoral coordination mechanisms at national and local levels among government ministries, nongovernmental organizations, and non-state actors involved in preparedness and response activities. This will be augmented by mapping of partners and strengthening coordination platforms with donors, partners and clusters, coupled with regular and continuous monitoring and evaluation of progress

- **Re-vitalize hospital and health center governance boards, Woreda health offices, Zone health departments, and key actors in the health emergency recovery** plan to strengthen institutional response mechanisms. The adaptive leadership and crisis management capacity of Woreda health offices and health facility senior management should be reinstituted and strengthened

Medium-term recovery needs (Years 3 to 5):

- **Strengthen the leadership and governance mechanisms** at all levels
- **Establish a long-term coordination committee structure** from federal to community level that effectively leads and responds to all hazards that may occur at any time. This includes developing accountability and transparency mechanisms for policy planning, legal and operational actions and financial information
- **Enhance the regulatory functions of the government** to sustain the gains and ensure adherence to the principles of conflict sensitivity and alignment of activities and reduce duplication of efforts.

5.3. INVESTMENT NEEDS

The major investment needs identified are expected to:

- Ensure the restoration of functionality of all damaged health facilities
- Ensure access and quality health service provision to the community in need
- Ensure availability of essential drugs and medical equipment for service continuity
- Early detection and response to public health threats
- Sustain community engagement and ownership
- Provide psychosocial and medical support for Sexual and Gender Based Violence (SGBV) victims and those who sustained psycho-social trauma due to the conflict
- Engage, align, and sustain internal and external stakeholders in the recovery plan

The investment needs are organized based on the WHO's health system framework. The health service deliveries that are considered in this reconstruction and rehabilitation plan are informed by the health interventions included in the health sector transformation plan (HSTP) II. These interventions include reproductive, maternal, neonatal, child and adolescent health services; nutrition services; services under the disease prevention and control program; medical services; public health emergency management and WASH.

Early recovery needs (Months 0-6):

During this phase, providing emergency and essential health care services are critical to save lives. Immediate actions that bridge the gap between humanitarian and development activities will be taken to address the most urgent health challenges encountered during and after the crisis. Priority interventions include:

- **Strengthen the capacity of Health Facilities** to address emergencies and mass casualty management in the conflict affected areas is a priority, including for referral and primary hospitals. Permanent and consumable health service inputs, human resources, and other operational support to the health facilities are urgently required. The capacities of physical rehabilitation centers, mental health and psychosocial support, and community-based conflict resolution support services for conflict affected areas are also critical needs.

- **Revitalize/establish mobile health teams:** The national and sub-national Emergency Medical Teams/Disaster Medical Assistance Teams (DMAT) need to be self sufficient and classified to provide timely care to conflict-affected areas and beyond.Mobile health units with sufficient stock of medical supplies and equipment need to be established and Ethiopia Pharmaceutical Supply Agency (EPSA) hubs strengthened. Strong collaboration with partners working on health emergency and humanitarian responses is required more than ever..

- **Restore the damaged health facilities** to provide basic and essential health services and facilitate the improvement of services to build back better (BBB). This requires availing necessary medical equipments, capacity building for health professionals, including mental health and psycho-social support. In addition, early identification, and treatment of gender-based violence victims as well as those needing psycho-social support will be prioritized. In order to identify and control possible disease outbreaks, a strong surveillance system as well as control centers will need to be put in place. These needs require coordinating with extensive stakeholders, including international partners and the Ethiopian Diaspora community. This also includes effective use of the twinning approach for service restoration.

- **Maintain the continuity of essential health services** through strengthening the immunization, chronic care follows up, sexual and reproductive health (SRH) and SGBV care, WASH services, and health extension programs.

- **Strengthen nutrition surveillance and provide nutrition treatment and preventative services:** Nutritional service and special nutrition curative and preventive interventions are needed in all IDP sites and conflict areas. A strong nutritional surveillance system involving the woreda health and early warning structures are required to provide nutrition treatment and prevention programs. This will be done using mobile and static health services, targeted and blanket Infant and Young Child Feeding (IYCF), innovative Social and Behavior Change Communication (SBCC) strategies, and exclusive breastfeeding and optimal complementary feeding practices. Supplies for MAM treatment and referral at Woreda level, logistics capacity to transport SAM supplies at Woreda facilities and Stabilization Centers (SCs) should be in the package of interventions.

  Coordination among key stakeholders and partners in the regions and strengthening emergency lifesaving nutrition responses across the humanitarian-development nexus are essential. Resources for blanket supplementary feeding programs, the restoration of nutritional services at health facilities, and essential office equipment for lower levels are critically needed.

Short-term needs (6-24 months):

This phase focuses on the transition from immediate humanitarian actions to short-term recovery. It includes activities that improve health service delivery while longer-term developmental programs are being prepared, and the provision of short-term livelihood opportunities to improve access to health services. In the short term, delivery of health services reaching the pre-conflict level is expected from health facilities.

- **Strengthen the public health surveillance system (PHSS)** in the affected areas by providing the necessary human resources to conduct public health surveillance in IDP sites. The PHSS is essential to enable timely responses to any disease outbreaks that may occur. To ensure provision of health services to IDPs, establishing temporary satellite clinics to provide essential health services in IDP sites, with medical equipment, supplies and resources is needed. This will enable providing nutritional screening and counseling for under-5 children and pregnant and lactating women (SBCC on maternal nutrition and IYCF). Referral linkages between these temporary satellite clinics in IDP sites and the permanent health system are needed. Regular discussions with RHBs to review their ability to coordinate the response and address challenges is required, and any need-based support for the bureaus should be provided, including advisory services from the federal level.

- **Restore administrative and operational services at affected health facilities**, including biomedical, blood bank, medical oxygen, laundry, kitchen, and sterilization, and palliative care services in hospitals. Building the capacity of health facilities for all hazard emergency response is also crucial. The Build Back Better (BBB) principle for facility service enhancement would require targeted procurement of medical equipment and strengthening of basic and advanced services.

- **Integrate health service restoration with economic supports and institutional capacity building.** Provide livelihoods supports for vulnerable populations in collaboration with other stakeholders and address governance capacity to improve institutional capacity to respond to the conflict-related health crisis

Medium-term needs (Years 3–5):

Within the medium term, the concept of building back better (BBB) comes into play. The construction or restoration health facilities should be based on national standards and should make sure that health service restoration is based on the concept of building a resilient health system at all levels that can effectively respond to public health emergencies.

- **Improve health service quality** by improving coverage, access, and the technical competency of the health workers. Rehabilitation and strengthening of the health sector infrastructure, further expansion of service delivery modalities, and improving the readiness and availability of health facilities are critical investments needed during this phase. The competence within the health workforce should be sufficiently high to maintain the daily functions of the health system and still provide quality care, even when resources may be scarce. Additional workforce resources are needed to improve the effectiveness of the response to a shock while minimizing the negative impact on the system. Hence conducting and inventory of staff in all health facilities in conflict affected areas is needed to identify human resource needs, and based on the inventory findings to mobilize additional critical health workforce to support the health service delivery.

- **Ensure the availability of revolving drug funds (RDF)** to make drugs and vaccines available and accessible at hub and facility levels. Prioritizing and distributing medicines, medical supplies, and equipment to hard-hit areas partly ensures equitable and accessible health services. Effective financial resource allocation and protection of healthcare funding is critical to sustainably avail the supplies and improve the quality of the health services. Health facilities need supports to reactivate their health care financing through capacity building on financial management, devising a mechanism to support communities in affected areas to pay their Community-Based Health Insurance (CBHI) premiums, and mobilizing resources from donors, philanthropic organizations/individuals, and the Diaspora community.

- **Strengthen health facilities capacity** to pursue long term health development goals. This is important as the recovery progresses, and facilities that are beyond those in the conflict affected areas need to boost their preparedness for all hazards/disasters and ensure the sustainability of efforts to continuously monitor and evaluate.

6. KEY ASSUMPTIONS AND COST SUMMARY

The cost estimated for the policy and institutional strengthening needs constitute a very small proportion (0.8%) of the total budget requirement. The costs were estimated based on the activities (listed in tables 8 and 9) that are required for achieving a coordinated effort in the restoration/rehabilitation of the health system and ensuring the right institutions are in place to respond to possible disasters in the future.

The cost estimate for the Investment needs (which is 99.2% of the total cost) has taken the below assumptions into account. The cost estimate considers the investment needs for restoring the damaged facilities in order to enhance rapid recovery of heath care system through ensuring access and restoring services in conflict affected areas in collaboration with different stakeholders.

Based on MOH's recent health emergency recovery plan for the restoration of health services in the conflict affected areas, the investment needs are organized according to the following focus areas:

- Facility rehabilitation
- Service delivery restoration: medical equipment and furniture
- Medical supplies
- Capacity building, training for the health staff, etc.

The health services considered include all services included in the HSTP II, which includes reproductive maternal, neonatal, child and adolescent health services; nutrition services; services under the disease prevention and control program; medical services; public health emergency management and WASH.

Since the level of damage of facilities in all regions is not known, the costing exercise was conducted with the assumption of 80% of the damaged health facilities need low-level physical restoration, 15% need medium-level restoration and 5% need high-level restoration of physical infrastructures. However, medical equipment, office furniture, ICT equipment, drugs and supplies under the affected facilities are assumed to be either fully damaged or looted. In the case of medical equipment, it is assumed the type and quantity of equipment will be provided according to the standard set for each type of facility.

On the other hand, drugs and medical supplies are estimated as per the HSTP II target population, population in need and coverage of each of the interventions required for one year. In addition to the physical restoration and ensuring the availability of medical equipment, supplies and drugs, the costing exercise consider the program budget needed to render services to the community. Personnel or health workforce salary is not included in the budget estimate as the government budget on salary is assumed to not be affected much due to the conflict.

Based on the recent available information, the number of damaged facilities used for the budget estimation are 709 health centers, 76 hospitals and 3,217 health posts – covering Tigray, Amhara, Afar, Benishangul-Gumuz, Oromia and SNNP (Konso zone) regions.

The estimated cost according to the needs is given in the Tables below. The costs are distributed across three phases, immediate, short-term and medium-term. The distribution of the costs across the three phases was decided by a group of experts using the Delphi method. The total budget needed for the interventions is estimated to be **1.431264 billion USD (i.e., 1 billion 431,264 million USD or 1,431,264,000 USD)**. Of which, **528.166 million USD**, **575.375 million USD**, and **327.723 million USD** worth of investment are needed during the 0-6 months, 6 months to 2 years and 3-5-year period, respectively. The investment needs categorized based on WHO's health system building blocks are presented in Annex 2.

In addition, it is important to note that the required budget estimated for reconstruction and rehabilitation of the health system (1,431.264 million USD) is nearly equivalent to the estimated cost of damage (1,420.02 million USD).

Table 7: Total health sector recovery cost (policy needs, institutional strengthening needs, and investment needs)

Need	Costs (USD, multiple of million)				
	Month 0-6	Months 6-24	Year 3-5	Total	Proportion
Component 1: Policy needs	1.016	0.921	0.064	2.001	0.14%
Component 2: Institutional strengthening needs	6.20	2.974	0.069	9.243	0.65%
Component 3: Investment needs	520.95	571.48	327.59	1,420.02	99.21%
TOTAL COST	**528.166**	**575.375**	**327.723**	**1,431.264**	**100%**

6.1. POLICY NEEDS AND ESTIMATED COST:

Table 8: Policy needs and cost

Needs	Costs (USD, multiple of million)			
	Month 0-6	Months 6-24	Year 3-5	Total
Operation 1: Conduct desk review on the existing guidelines and protocols in relation to the emergency health recovery and disaster management	0.058	**0**	**0**	0.058
Operation 2: Arrange consultative meetings to review the policies and strategies to meet the current needs	0.017	0	0	0.017
Operation 3: Conduct consusworkshops to customize minimum health services package	0.011	0	0	0.011
Operation 4: Develop appropriate guidelines and protocols to cover the identified gaps	0.069	0	0	0.069
Operation 5: Conduct workshop to prepare an operational guide to ensureservice delivery during conflicts and other emergencies particularly to provide community-based service	0.058	0	0	0.058
Operation 6: Develop a guideline to provide essential health service in case of conflicts and other emergencies using community-based health workers	0.07	0	0	0.07
Operation 7: Conduct capacity building training for the health extension professionals how to provide community-based health service/ out of the institution on the redefined service provision	0.667	0	0	0.667
Operation 8: Conduct quarterly workshops with the health experts from different level of health sector, Technical Working Group members, other sectors and academia to document the lessons learnt, suggestions, and ideas for the needs of policy/strategy/ changes	0	0.069	0	0.069
Operation 9: Desk review for the existing situation of the displaced people to provide free healthcare service in the conflict affected areas	0	0.034	0	0.034
Operation 10: Conduct consultative meetings to review the current Community Based Health Insurance and service charge system of health service delivery	0	0.017	0	0.017
Operation 11: Conduct brainstorming workshop to prepare national and sub-national level triggers and coordination for comprehensive emergency response	0	0.013	0	0.013
Operation 12: Finalize context appropriate guidelines to provide essential health service at facility and community levels in the context of in case of conflict and other emergencies (all- hazards	0	0.003	0	0.003
Operation 13: Conduct capacity building training for the health extension professionals how to provide community-based health service/ out of the institution on the redefined service provision	0	0.667	0	0.667

Operation 14: Conduct quarterly workshops to assess effectiveness of the revised policy and strategies on the health emergency recovery and disaster management	0	0	0.034	0.034
Operation 15: Conduct desk review and situational analysis on the emergency response in health recovery and disaster management for the conflict affected areas (Consultancy for desk review, situation analysis, and development of synthesis paper)	0	0	0.006	0.006
Total sub-component 1.1.	0.95	0.803	0.04	1.793
Operation 1: Conduct consultative meeting with Disaster Prevention and Preparedness Commission (DPPC) and other stakehplders for integrated disaster management	0.022	0.067	0	0.089
Operation 2: Monitor quarterly the progress of the health emergency recovery and disaster management in the conflict affected areas	0.007	0.017	0.017	0.041
Operation 3: Conduct consultative meeting with Disaster Prevention and Preparedness Commission (DPPC) partners and Ministry of Health (health development partners)	0.037	0.03	0.007	0.074
Operation 4: Create a platform and conduct regular reviews for targeted coordination and emergency response	0	0.004	0	0.004
Total sub-component 1.2	0.066	0.118	0.024	0.208
Total Component 1	**1.016**	**0.921**	**0.064**	**2.001**

6.2. INSTITUTIONAL STRNGTHENING NEEDS AND ESTIMATED COST:

Table 9: Institutional strengthening needs and cost

Needs	GEOGRAPHIC AREA	Costs (USD, multiple of million)			
		Month 0-6	Months 6-24	Year 3-5	Total
Component 2: Institutional strengthening needs					
Sub-component 2.1: Activate a high-level post disaster health sector governance and leadership framework that outlines roles, responsibilities, and commitments after a disaster event.					
Need 1: Desk review to assess current governance and leadership arrangements	**Federal**	0.003	0	0	0.003
Need 2: Joint needs assessment and analysis on current leadership and governance on conflict response	**Federal**	0.009	0	0	0.009
Need 3: Workshop to develop an MOU for coordination arrangement with other line ministries private institutions and partner coordination	**Federal**	0.009	0	0	0.009
Need 4: Capacity building training for federal, regional, zonal and woreda level leadership on disaster response	**Amhara**	0.053	0.051	0	0.104
	Oromia	0.051	0.159	0	0.210
	Afar	0.014	0.017	0	0.031
	Benishangul G.	0.095	0.066	0	0.161
	SNNP (Konso)	0.049	0.127	0	0.176
	Remaining regions	0	0.189	0	0.189
Need 5: Quarterly review meetings of the national and regional task force	**Federal**	0.012	0.035	0.069	0.116
Total sub-component 2.1.		**0.295**	**0.644**	**0.069**	**1.008**
Sub-component 2.2: Confirm, in the context of an event, the right institution and people are in place to address the gaps					
Need 6: Establishing Emergency Operation Centers at regional and zonal level for effective response to disease outbreaks	**Amhara**	0.253	0.253	0	0.506
	Oromia	0.253	0.253	0	0.506
	Afar	0.157	0.157	0	0.314
	Benishangul G.	0.109	0.109	0	0.218
	SNNP (Konso)	0.06	0.06	0	0.12
Need 7: Capacity building/ refresher training for Mobile Health and Nutrition Teams	**Amhara**	0.144	0.153	0	0.297
	Oromia	0.136	0.417	0	0.553
	Afar	0.023	0.033	0	0.056
	Benishangul G.	0.018	0.016	0	0.034
	SNNP (Konso)	0.008	0.371	0	0.379
	Remaining regions	0	0.508		0.508
Need 8: Deploy Mobile health and nutrition teams in conflict affected areas	**Amhara**	2.09	0	0	2.09
	Oromia	1.97	0	0	1.97
	Afar	0.333	0	0	0.333
	Benishangul G.	0.262	0	0	0.262
	SNNP (Konso)	0.119	0	0	0.119
Total sub-component 2.2		5.935	2.33	**0**	**8.265**
Total Component 2		6.23	2.974	0.069	9.273

Table 10: Summary of Institutional strengthening cost at federal and regional levels

Federal/Region	Costs (USD, multiple of million)			
	Month 0-6	**Months 6-24**	**Year 3-5**	**Total**
Federal	0.033	0.035	0.069	0.137
Amhara	2.54	0.457	0	2.997
Oromia	2.41	0.829	0	3.239
Afar	0.527	0.207	0	0.734
Benishangul Gumuz	0.484	0.191	0	0.675
SNNP (Konso)	0.236	0.558	0	0.794
Remaining regions	0	0.697	0	0.697
Total	**6.2**	**2.974**	**0.069**	**9.243**

6.3. INVESTMENT NEEDS AND ESTIMATED COST:

Table 11: Investment needs and costs by region.

Regions	**Type**	**Costs (USD, multiple of million)**			
		Month 0-6	**Months 6-24**	**Year 3-5**	**Total**
Afar	Facility rehabilitation	2.05	4.34	0.85	7.24
	Service delivery restoration: medical equipment and furniture	7.36	6.24	5.46	19.06
	Medical supplies	3.29	3.29	1.65	8.23
	Capacity building, training for the health staff	1.73	3.30	5.27	10.30
	Total Afar	14.43	17.18	13.22	44.83
Amhara	Facility rehabilitation	44.13	93.73	18.35	156.21
	Service delivery restoration: medical equipment and furniture	158.83	134.63	117.71	411.17
	Medical supplies	71.06	71.06	35.53	177.65
	Capacity building, training for the health staff	20.19	19.81	10.79	50.80
	Total Amhara	294.21	319.23	182.38	795.83

Benishangul-Gumuz	Facility rehabilitation	1.24	7.22	0.52	4.39
	Service delivery restoration: medical equipment and furniture	4.46	3.78	3.31	11.54
	Medical supplies	2.00	2.00	1.00	4.99
	Capacity building, training for the health staff	0.57	0.56	0.30	1.43
	Total Benishangul G.	8.26	8.96	5.12	22.35
Oromia	Facility rehabilitation	6.59	14.00	2.74	23.33
	Service delivery restoration: medical equipment and furniture	23.73	20.11	17.58	61.42
	Medical supplies	10.61	10.61	5.31	26.54
	Capacity building, training for the health staff	3.02	2.96	1.61	7.59
	Total Oromia	43.95	47.69	27.24	118.88
Tigray	Facility rehabilitation	23.84	50.62	9.91	84.37
	Service delivery restoration: medical equipment and furniture	85.78	72.71	63.57	222.07
	Medical supplies	38.38	38.38	19.19	95.94
	Capacity building, training for the health staff	10.97	10.91	6.24	28.12
	Total Tigray	158.97	172.62	98.92	430.50
SNNPR (Konso)	Facility rehabilitation	0.17	0.36	0.07	0.59
	Service delivery restoration: medical equipment and furniture	0.60	0.51	0.45	1.56
	Medical supplies	0.27	0.27	0.14	0.68
	Capacity building, training for the health staff	0.08	0.08	0.04	0.19
	Total SNNPR(Konso)	1.12	1.21	0.69	3.02
All regions	Facility rehabilitation	78.01	170.27	32.44	280.73
	Service delivery restoration: medical equipment and furniture	280.76	237.99	208.08	726.82
	Medical supplies	125.61	125.61	62.80	314.02
	Capacity building, training for the health staff	36.56	37.61	24.26	98.43
	Total - All regions	520.94	571.48	327.58	**1,420.02**

Table 12: Investment costs by type of facility (loss/damage), by region in USD, multiple of million.

Region	Loss/Damage	Health Post	Health Center	Hospital	Program and Other Costs	Total
Amhara	Loss	36.03	250.48	221.46	45.69	553.66
	Damage	52.61	80.25	43.36	11.86	188.08
	Total	*88.64*	*330.73*	*264.82*	*57.55*	*741.74*
Afar	Loss	1.23	11.64	6.99	2.12	21.98
	Damage	1.80	3.73	1.93	0.55	8.01
	Total	*3.03*	*15.37*	*8.92*	*2.67*	*29.99*
Benishangul G.	Loss	3.59	8.87	-	1.28	13.74
	Damage	5.24	2.84	-	4.92	13
	Total	*8.83*	*11.71*	-	*1.61*	*26.74*
Oromia	Loss	14.28	59.29	-	6.82	80.39
	Damage	20.86	19.00	-	1.77	41.63
	Total	*35.14*	*78.29*	-	*8.59*	*122.02*
Tigray	Loss	11.78	62.62	309.38	24.67	408.45
	Damage	17.20	20.06	44.06	6.40	87.72
	Total	*28.98*	*82.68*	*353.44*	*31.07*	*496.17*
SNNP(Konso)	Loss	0.08	2.22	-	0.17	2.47
	Damage	0.12	0.71	-	0.05	0.88
	Total	*0.20*	*2.93*	-	*0.22*	*3.35*
All regions	*Loss*	66.99	395.12	537.83	80.75	1,080.69
	Damage	97.82	126.59	89.35	25.55	334.72
	Total	***164.82***	***521.71***	***627.18***	***106.3***	***1,420.02***

Table 13: Summary of investment costs by region

Region	Costs (USD, multiple of million)			
	Month 0-6	**Months 6-24**	**Year 3-5**	**Total**
Afar	14.43	17.18	13.22	44.83
Amhara	294.21	319.23	182.38	795.83
Benishangul-Gumuz	8.26	8.96	5.12	22.35
Oromia	43.95	47.69	27.24	118.88
Tigray	158.97	172.62	98.92	430.50
SNNPR(Konso)	1.12	1.21	0.69	3.02
All regions	520.94	571.48	327.57	**1,420.02**

Annex 1: Completed data extraction sheet

A. Amhara region

No	Variables/indicators/issue	Value	Source of data
1	**Affected population**		
	# Of people displaced	2,356,587	Amhara National Regional State Health Bureau
	Estimated number of U5 children	343,850	projected (14.591% of total)
	Estimated number of PLW	79,228	Projected (3.362%)
	Number of affected populations	8,906,051	Amhara National Regional State Health Bureau 6/4/14EC
	IDP sites	37	Amhara National Regional State Health Bureau 6/4/14EC
2	**Infrastructure and supplies**		
	# Of health posts (fully damaged)	86	PHC report (Amhara Region)
	# Of health posts (partially damaged)	1642	PHC report (Amhara Region)
	Total number of health posts damaged	1728	
	# Of health centers (fully damaged)	23	PHC report (Amhara Region)
	# Of health centers (Partially damaged)	429	PHC report (Amhara Region)
	Total number of health centers damaged	452	Amhara National Regional State Health Bureau
	# Of hospitals (fully damaged)	2	
	# Of hospitals (partially damaged)	38	
	Total # Of hospitals damaged	40	Amhara National Regional State Health Bureau
	# Of blood banks damaged	5	Amhara National Regional State Health Bureau
	# Of Zonal health departments damaged	8	Amhara National Regional State Health Bureau
	# Of Woreda Health offices damaged	56	PHC report(Amhara Region)
	# Of institutions damaged (Ethiopian Pharmaceutical and Supplies Agency and EPHI office)	2	Amhara National Regional State Health Bureau
	# Of private health facilities	466	Amhara National Regional State Health Bureau

3	**Medical products (equipment and diagnostic)**		
	# Of equipment (x-ray machines) damaged or lost	40	Amhara National Regional State Health Bureau
	# Of equipment (Gene X-Pert machines) damaged or lost	25	Amhara National Regional State Health Bureau
	# Of equipment (Chemistry) damaged or lost	43	Amhara National Regional State Health Bureau
	# Of equipment (Hematology machine) damaged or lost	43	Amhara National Regional State Health Bureau
	# Of equipment (CD4 count machine) damaged or lost	43	Amhara National Regional State Health Bureau
	# Of equipment (LED Microscope) damaged or lost	580	Amhara National Regional State Health Bureau
	# Of equipment (AFB Microscope) damaged or lost	1050	Amhara National Regional State Health Bureau
	# Of equipment (ECG machines) damaged or lost	19	Amhara region Health facility Damage assessment report
	# Of OR apparatus/machine damaged	975	Amhara National Regional State Health Bureau
	# Of ambulances damaged or lost	124	Amhara National Regional State Health Bureau
	# Of telephones damaged or lost	36	Amhara region Health facility Damage assessment report
	# Of computers damaged or lost	268	Amhara region Health facility Damage assessment report
	# Of printers damaged or lost	242	Amhara region HF Damage Assessment report
	# Of health workers who left the conflict area	9,888	Amhara National Regional State Health Bureau

B. Afar region

No	Variables/indicators/issue	Value	Source of data
1	**Affected population**		
	Number of people displaced	367,659	Conflict situation update, 17 November, 2021
	Estimated number of U5 children	257,000	Conflict situation update, 17 November, 2021
	Estimated number of PLW	79,000	Conflict situation update, 17 November, 2021
	Total number of people affected	1,370,133	Conflict situation update, 17 November, 2021

2	**Infrastructure and supplies**		
	# Of IDP site established	15	Afar Emergency situations and IDPS, November 2021
	# Of health posts (fully damaged)	3	Conflict related damage and loss assessment-Afar BOFED
	# Of health posts (partially damaged)	56	
	Total number of health posts damaged	59	
	# Of health centers (fully damaged)	1	
	# Of health centers (Partially damaged)	20	
	Total number of health centers damaged	21	Conflict related damage and loss assessment-Afar BOFED
	# Of primary hospitals damaged (partially damaged)	2	Conflict related damage and loss assessment-Afar BOFED
	# Of private health facilities damaged	3	Conflict related damage and loss assessment-Afar BOFED
3	**Medical products (equipment and diagnostic)**		
	# Of equipment (Gene Xpert) damaged or lost	1	*FMOH, DPCD/NTD Program assessment report, December 2021*
	# Of equipment (Ultrasound) damaged or lost	13	*FMOH, DPCD/NTD Program assessment report, December 2021*
	# Of equipment (X-ray machine) damaged or lost	1	*FMOH, DPCD/NTD Program assessment report, December 2021*
	# Of equipment (chemistry machine) damaged or lost	8	*FMOH, DPCD/NTD Program assessment report, December 2021*
	# Of equipment (CD4 machine) damaged or lost	2	*FMOH, DPCD/NTD Program assessment report, December 2021*
	# Of equipment (Hematology machine) damaged or lost	8	*FMOH, DPCD/NTD Program assessment report, December 2021*
	# Of equipment (AFB Microscopy) damaged or lost	36	*FMOH, DPCD/NTD Program assessment report, December 2021*
	# Of equipment (LED Microscopy) damaged or lost	13	*FMOH, DPCD/NTD Program assessment report, December 2021*
	# Of ambulances damaged or lost	20	Conflict related damage and loss assessment-Afar BOFED
4	**Health workforce**		
	# Of health workers who are affected	185	*FMOH, DPCD/NTD Program assessment report, Dec. 2021*
	# Of health workers deceased due to the conflict	3	*FMOH, DPCD/NTD Program assessment report, Dec.2021*
5	**Health service delivery**		
	SAM and MAM rate - Under 5 Children	26.50%	Afar Emergency situations and IDPS, November 2021
	MAM rate - PLW	43.50%	Afar Emergency situations and IDPS, November 2021

C. Oromia region

No	Variables/indicators/issue	Value	Source of data
1	**Affected population**		
	# Of people affected	8,615,000	ORHB administrative report
	# Of people displaced	559,122	ORHB emergency response report
	# Of IDP sites	146	ORHB emergency response report
	Estimated U5 children	141,530	ORHB admin report
	Estimated number of pregnant and lactating women	298,940	ORHB administrative report
2	**Infrastructure and supplies**		
	# Of health posts (fully damaged)	136	ORHB administrative report
	# Of health posts (partially damaged)	549	ORHB administrative report
	Total number of health posts damaged	685	ORHB administrative report
	# Of health centers (fully damaged)	2	ORHB administrative report
	# Of health centers (partially damaged)	105	ORHB administrative report
	Total number of health centers damaged (either not functional or partially)	107	ORHB administrative report
	# Of ambulances damaged or lost	53	ORHB administrative report
3	**Health workforce**		
	# Of health workers who left the conflict area	108	ORHB emergency response report
4	**Health service delivery**		
	Expected child # of malnourished children	241,220	Based on the conversion factor from the total affected population
	Estimated number of people who could not access services due to interrupted essential health services (institutional delivery)	298,940	Estimated by conversion factor from the total affected population
	Estimated number of people who could not access services due to interrupted essential health services (family planning)	1,604,974	Estimated by conversion factor from the total affected population
	Estimated number of people who could not access services due to interrupted essential health services (vaccination)	298,940	Estimated by conversion factor from the total affected population

D. Benishangul-Gumuz region

No	Variables/indicators/issue	Value	Source of data
1	**Affected population**		
	# Of people affected	361,775	BG PHEM Directorate 30/12/2013
	# Of people displaced	193,040	BG_PHEM Directorate 30-12-2013
	Estimated number of Under 5 children	56,880	BG_PHEM Directorate 30-12-2013
	Estimated number of pregnant and lactating women	19,880	BG_PHEM Directorate 30-12-2013
	No of IDPs in the region	6	BG_PHEM Directorate 30-12-2013
2	**Infrastructure and supplies**		
	# Of health posts (Fully damaged)	155	BGRHB administrative report
	# Of health posts (Partially damaged)	17	BGRHB administrative report
	Total number of health posts damaged	172	BGRHB administrative report
	# Of health centers (Fully damaged)	12	BGRHB administrative report
	# Of health centers (Partially damaged)	4	BGRHB administrative report
	Total number of health centers damaged	16	BGRHB administrative report
	Number of Woreda Health offices damaged (Nonfunctional)	4	BGRHB administrative report
3	**Health work force**		
	# Of health workers who left the conflict area	164	EPHI assessment report
4	**Health service delivery**		
	# Of MHNT	4	BG_PHEM Directorate 21-11-2013
5	**Leadership and governance**		
	Existence of "Emergency response committee (region)	1	BG_PHEM Directorate 21-11-2013

Annex 2: Investment needs (interventions by WHO health system blocks)

Building block (Pillars)	Interventions (Prioritized needs)	Phases		
		0-6 months	**6-24 months**	**36-60 months**
Service Delivery	Reinitiate/ Strengthen Reproductive Maternal, Neonatal, child Adolescent and Nutrition Service	Conduct advocacy workshop on RMNCH for Community leaders, high level officials and health professionals, provide emergency nutrition, conduct emergency procurement, provide emergency maternal and obstetric services, capacity building for health professionals	Conduct monitoring and Evaluation	Design program quality improvement
	Reinitiate/ strengthen Disease prevention and control program	Conduct advocacy workshop, provide capacity building for health professionals, Conduct Campaign	Conduct mentorship	Design program quality improvement
	Re-initiate/ strengthen Medical Services	Establish emergency care service at all levels, re-initiate inpatient and outpatient services, re-initiate OR, blood bank and Pharmacy services	Initiate laundry, Kitchen, and sterilization service, Initiate diagnostic and imaging service like Ultrasound and X ray	Re-initiate/ establish palliative care services, avail imaging service like CT-Scan and MRI for specialized/ General hospitals
	Reactivate/ Strengthen Public health emergency	Re-activate the early warning and surveillance system, provide capacity building on Public health emergency preparedness and response, strengthen public health emergency responses activities, ensure Mental Health and Psychosocial Support (MHPSS) Service provision, ensure Essential health service and WASH service for Internally Displaced Persons (IDPs), ensure Provision of preventive, clinical and psychosocial Service Sexual and Gender Based Violence (SGBV) victims		
	Strengthen WASH	Ensure availability of water by providing 5,000liter Water Reservoir tank, Ensure the availability of Solid Waste collection Bin/Small size, Ensure the functionality of Liquid waste collection septic tank	Avail Water quality test for Physical and Bacteriological/ Water Quality Monitoring Ensure the functionality of sanitation facilities (Toilet, Washing basins, Hand washing stations, Bathing, incinerator, Placenta Pit	

Health Information System	Strengthen health information system	Ensure availability of ICT equipment's with accessories for HIS and other programs, Develop, print, and distribute paper-based data recording and reporting tools, HIS capacity building to improve data quality and information use at all levels	Conduct Mentorship/ supportive supervision at all levels, Conduct Review meetings to Improve data quality and information use at all levels.	Design data quality, utilization and use improvement project
Human Resources	Strengthen health workforce	Design incentive packages for health professionals working at IDP and Conflict areas, allocate budget for additionally recruited health workforces, mobilize additional critical health workforce to support the health service delivery, Provide psychosocial support for health professionals	provide capacity building for newly recruited health workforce	Give long term capacity building schemes
Pharmaceuticals and Logistic	Strengthen pharmaceutical supply chain management	Identify damaged/looted medicines and select & quantify medicines, medical supplies, chemical reagents and medical equipment, ambulances, generators and furniture. Ensure availability of all essential pharmaceuticals	Procure and distribute medical equipment, ambulances, generators and furniture	
Health care financing and resource mobilization	Strengthen health financing and resource mobilization	Call for action all stakeholders by identifying the existing gaps and design thematic areas, establish a platform between health emergency services and development/ humanitarian partners	Support health facilities to reactivate their health care financing, provide capacity building on financial management during crisis, devise a mechanism to support communities in affected area to pay their CBHI premium	

Annex 3: Detailed analysis of the health sector and pre-crisis baseline

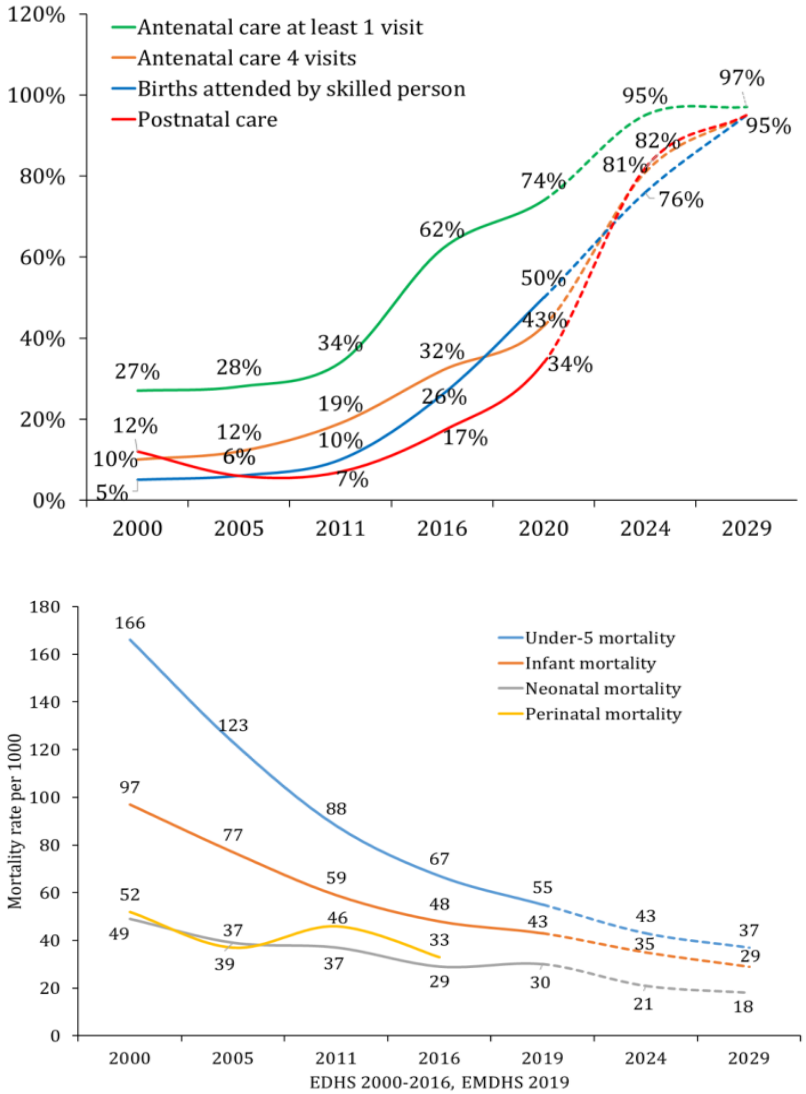
The Ethiopian government has expressed its commitment to the achievement of universal health coverage (UHC) through the health ministry policy documents starting from the time UHC was declared as one of the pillars of the sustainable development goals (SDG) in 2015. The 20-year Ethiopia's health envisioning (2015-2035) aspires to a lower-middle-income country by 2025 and the median health outcomes of an upper-middle-income country by 2035, primarily by strengthening Primary Health Care (PHC) and quality and equitable comprehensive health services at all levels. The health sector transformation plan (HSTP) and the essential health service package, strategically paraphrasing the envisioning roadmap, underscore the achievement of UHC before the SDG due date.

Ethiopia has introduced a UHC benefit package since 2019 for selected essential PHC services to reduce financial hardship and increase health services utilization. As a result, it was noted that a significant improvement was observed in some of the health status indicators over the last decade across regional states, with statistically significant variations in some of the indicators. Notably, the progressively declining total fertility rate, increasing contraceptive use, improving maternal and child health, and expanding formal education have been contributing to the observed demographic transition at national and regional levels, which in turn is linked to the concerted efforts in harnessing the demographic dividend (economic growth by having a larger middle-aged, healthy, and educated population). In its HSTP II, the health ministry gives special focus towards building a resilient health system. However, the current post-conflict/war health crisis is probably a highly pressing issue to revise the HSTP II to incorporate the humanitarian-development nexus in building resilient health systems.

The 20-year National Health Sector Development Program (HSDP) (1990-2015) has served as a learning curve for the launching of HSTP, which resulted in a remarkable and multidimensional health status improvement since its inception. Among others, the applauded health extension program, the highly diversified vaccination program, the very successful malaria, TB, and HIV prevention and treatment program, the remarkable improvement in maternal and child health, the success story in other neglected tropical diseases elimination and eradication, the accelerated growth of the human resource for health development, the remarkable increment in PHC infrastructure constructions, the huge investment for health facilities capacity/set up building encourage the country at large to envisage achieving SDGs and realizing the low middle-income country status (Table 1 and Figure 1).

All these achievements may qualify for being proxy and broad indicators for improvement in equity and quality of preventive and curative services at the regional levels.

Figure 6: The 20-years trend of maternal and child health indicators of Ethiopia and the HSTP II target for 2029. [44]



Over the years, the contribution of development partners as bilateral, multilateral, and philanthropic donors for and implementers of the health programs has been immense. The earlier MDG and later SDG pool fund has been covering more than 70% of the federal MoH annual budget, which has enabled striding up in PHC facilities construction and massive equipment purchasing and more than 4000 ambulances procurement. The government expenditure on health as a percentage of the GDP, however, remains almost flat in a 20-year period, but the government expenditure on health as a percentage of the total government expenditure (13.2%) in 2020 was close to the Abuja Declaration target (15% of the annual budget) set in 2001 by the member States of the African Union.

44 Berhan Y, et al. Universal Health Coverage Policy and Progress towards the Attainment of Universal Sexual and Reproductive Health and Rights Services in Ethiopia. Ethiop J Health Sci. 2022;32 (1):181-200.

Functionally, based on the honor of the constitution and the health policy, the MoH works collaboratively with regional health bureaus and health development partners. The ministry has introduced the health extension program in 2003 under HSDP II and a three-tier health care delivery system (primary, secondary, and tertiary level health care system) while implementing the HSDP IV. Primary Level Health Care comprises a primary hospital (to cover 60,000-100,000 people), health centers (1/15,000-25,000 population), and their satellite Health Posts (1/3,000-5,000 population) connected to each other by a referral system. Secondary Level Health Care is given by General Hospitals, each covering a population of 1-1.5 million people and Tertiary Level Health Care is a specialized hospital service covering a population of 3.5-5 million people. Strategies and guidelines drafted by the health ministry, human resource development by federal and regional higher education, national performance, resource allocation and distribution are presented by the ministry to the joint-steering committee members (representing each regional health bureau) for them to get the opportunity to take part in the planning and implementation of ministerial agendas.

With regard to the challenges, the current conflict and war damaging health facilities, disrupting the diseases preventive measures, massively displacing the health workers and health admin staff is probably the most critical of all that the health sector has faced for more than a year. Essentially, the conflict has fueled the COVID-19 pandemic-related national and regional challenges. The preventive measures critically hampered by the conflicts/war and the COVID-19 pandemic includes but not limited to the vaccination program, malaria prevention, skilled delivery, family planning, pre-cancerous cervical screening, macro and micronutrient provision, and mass drug administration for neglected tropical diseases.

The health sector is probably the least driver for the onset of the conflict. Over more than two decades, the government of Ethiopia has invested a lot from the government treasury to expand the primary to tertiary levels of education at the federal and regional levels, of which, the health sector is among the most benefited. As an example, the number of medical schools has increased from three some 30 years back to 40. The annual enrolment of health students of all disciplines has increased from a few hundred to several thousand. Nevertheless, the health professional demand/production against the annual population increment (currently > 3.4 million) is still disproportionately low. The paradox is; in the last 5-7 years, the new graduate health professionals (including physicians) are unable to secure jobs, which have probably contributed to the public grievance, long-standing violent demonstrations and here and there internal conflicts.

As a result, although the scale is lower than the Northern Ethiopia war that erupted in December 2020, the conflict breakouts in other parts of the country have been ravaging the health facilities, ambulances, and field vehicles serving the health sector. The proxy indicators of the multifaceted damage due to the war in the North and conflicts in Oromia, Benishangul-Gumuz, and SNNP regional states are presented above.

Ethiopia Conflict Impact Assessment and Recovery and Rehabilitation Planning (CIARP)

Final Health Sector Report and Costs