Mapping resilience in emergency response and recovery in Tigray, Ethiopia: Lessons learned and key policy messages

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Background

Ethiopia's Tigray region has been severely affected by several shocks and crises that have profoundly impacted its health systems and the health of its population. The region has experienced three protracted wars in the last 50 years, the most recent of which was preceded by the COVID-19 pandemic. In addition, Tigray experiences cyclic drought every three to five years and frequent locust infestations. The most recent war (2020-22) devastated social systems, including the health system of the region, resulting in frequent disease outbreaks and a significant worsening in population health.

Since the Pretoria peace agreement at the end of 2022, efforts have been ongoing to help the health system recover. This study explored the ways in which the health system has responded during the conflict period to sustain a level of service delivery and in the post-crisis period to ensure health system recovery, highlighting examples of resilience. Findings provide evidence to inform health system reconstruction and recovery efforts as well as preparedness strategies in Tigray and in similar settings.

Methodology

The study is grounded in the ReBUILD resilience framework and adopts a systems thinking approach. A review of 135 documents was conducted and 22 key informants were interviewed (16 interviews and one focus group in Tigray). Drawing on those data, a causal loop diagram was developed which provides an overview of the causal relations between key elements of the health system, and how they contributed to sustaining the functions of the health system during conflict and health system recovery (the two elements in orange in the causal loop diagram figure below).

Findings

Analysis identified several resilience strategies that were deployed across different elements of the health system to sustain some degree of functionality during the more recent conflict and to ensure some health system recovery.

Health system resilience capacities and strategies during the conflict

Resilience strategies deployed during the conflict included the **contributions of humanitarian actors** which supported the health system's absorption capacities by providing supplies, direct service provision through existing facilities and mobile units, and mental health support for health workers. The **private sector** also played a crucial role by contributing to the retention of health workers and facilitating drug procurement during periods of public supply chain disruption (indicated by the red arrows in the figure below). The effective and flexible use of existing resources was observed, eg **locally available supplies** were used instead of unavailable drugs (traditional clothes used for bandages and table salt in a water solution for disinfection were some examples). With the disruption of formal supply systems, **procurement happened outside formal systems** by smuggling medicine and supplies from neighbouring regions using donkeys, camels, and on foot, and often through private sector actors. Use of these supplies was permitted by the Tigray Regional Health Bureau (TRHB) during the crisis period. Similarly, **health data collection and reporting systems adapted, using couriers** from facilities or humanitarian partners to replace the collapsed health information management system. The TRHB also supported the adaptation and **standardisation of mobile health and nutrition team protocols** to fulfil local needs and harmonise humanitarian interventions

The central role of health workers

A critical resilience capacity was the high level of **human resources' motivation and dedication** as well as their **embeddedness in the local community.** Health workers' professionalism and commitment to serving their communities allowed them to deploy coping strategies, which in the short term allowed for the continuation of (some) health services (purple arrows). However, these strategies were mostly implemented at the individual level, while systemic support for health workers (such as remote supportive supervision)

was lacking due to the interruption of communication. As a result, health workers were mentally and physically stretched and depleted by the end of the conflict, and their resilience and capacity to cope would be difficult to sustain under multiple shocks or prolonged stressors. To address this issue in the longer term, there is a need to support and nurture health workers' mental health and livelihoods through specific programmes and plans during the recovery phase and to prepare to respond to future shocks.

The essential role of the local health leadership

At the core of many of the resilience strategies is the **leadership capacity of the TRHB,** enabled by its authority and legitimacy. The leadership capacity allowed many adaptations that contributed to sustaining functions of the health system during crisis, eg through effective and flexible regulation of supplies, health workers, service delivery, partner coordination and strategic planning (brown arrows).

Resilience during crisis and in recovery

It is important to note that there are multiple positive elements that contribute to sustaining the functions of the health system during crisis (see the + arrows that feed into the orange box on 'sustaining the functions of the health system'). However, many of those same elements or arrows have a negative impact (-) on health system recovery (the orange 'health system recovery' box). This means that effective resilience responses in the short term, acute crisis become maladaptive responses in the longer term and hold back the recovery of the health system. In the case of Tigray, these **maladaptive responses** included the unregulated growth of the private sector, increased dual practice of health workers, reliance on out-of-pocket expenditure, the rapid and unplanned exit of humanitarian actors, and the disruption of district/Woreda health governance structures. However, several **notable positive pathways contribute to both sustaining services during crisis and health system recovery in the longer term;** community trust in healthcare providers, the motivation of health workers and the TRHB's leadership capacity.

Key policy messages

- Key resilience strategies support **health service delivery during crisis.** In Tigray, these focused on the roles of private providers and humanitarian actors, and adaptation strategies in relation to the health information system, procurement and use of locally available supplies.

- Importantly, some of these resilience responses are effective during the acute crisis but have negative effects on longer-term health system recovery. **Identifying resilience strategies that can sustain health system functionality during conflict but also support health system recovery is essential** to inform the recovery phase and emergency preparedness strategies to address future shocks. In Tigray, these appear to be related to the motivation and dedication of health workers, community trust in healthcare providers, and the regional health authority's leadership.

- It is important to effectively manage the trade-offs between sustaining services and recovery by **building on resilience strategies that also support recovery and ensuring that the humanitarian response does not deplete capacities needed for health system recovery.**

- In Tigray, strategies and interventions related to aid cuts and climate change were shown to support service delivery in crisis, health system recovery, and potentially emergency preparedness in the face of further shocks and crises. They included:

  o ensuring the strengthening of **a stable, committed, and legitimate health leadership** and visibility of local health authorities,

  o early introduction of systemic approaches to **support health workers** that do not distort the health labour market by shifting their focus to private sector work (supporting livelihoods, providing mental health support, regulating dual practice), and

  o continuing to support public health provision to **avoid loss of trust in public health services.**
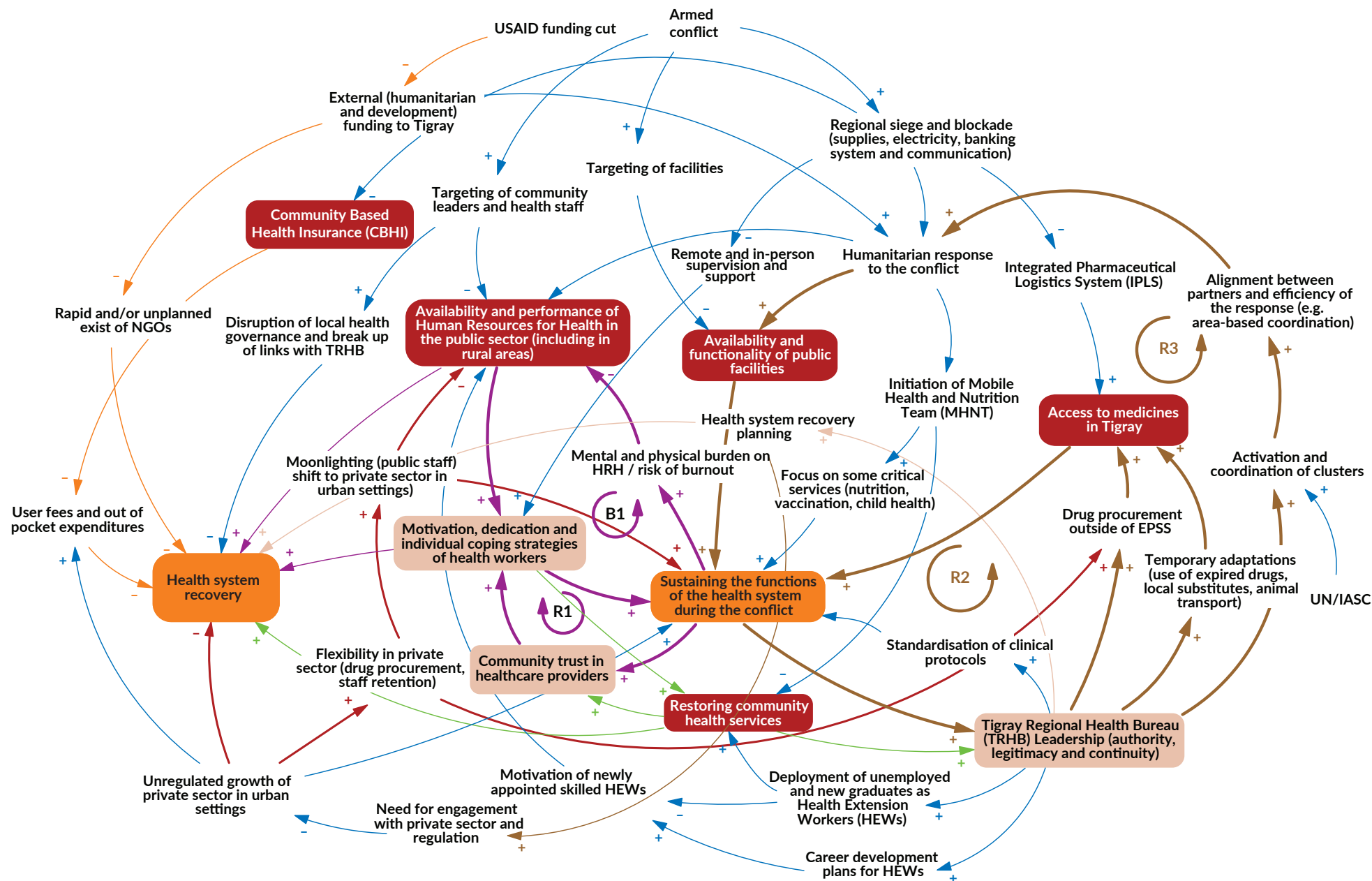
Figure: Causal loop diagram of health system resilience dynamics in Tigray during and after conflict

This diagram illustrates key resilience elements influencing the health system's functionality during conflict and its recovery in Tigray. Arrows indicate causal relationships: x → y means a change in x leads to a change in y in the same direction (positive), while x → y with a minus sign would indicate an inverse relationship. Reinforcing loops (R) amplify change, while balancing loops (B) seek stability. Core outcome variables are highlighted in orange.

References

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