

Health policy development in wartime: establishing the Baito health system in Tigray, Ethiopia

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This paper documents health experiences and the public health activities of the Tigray People's Liberation Front (TPLF). The paper provides background data about Tigray and the emergence of its struggle for a democratic Ethiopia. The origins of the armed struggle are described, as well as the impact of the conflict on local health systems and health status. The health-related activities and public health strategies of the TPLF are described and critiqued in some detail, particular attention is focused on the development of the *baito* system, the emergent local government structures kindled by the TPLF as a means of promoting local democracy, accountability, and social and economic development. Important issues arise from this brief case-study, such as how emerging health systems operating in wartime can ensure that not only are basic curative services maintained, but preventive and public health services are developed. Documenting the experiences of Tigray helps identify constraints and possibilities for assisting health systems to adapt and cope with ongoing conflict, and raises possibilities that in their aftermath they leave something which can be built upon and further developed. It appears that promoting effective local government may be an important means of promoting primary health care.

Introduction

Conflict has a significant impact on health and health systems (Zwi and Ugalde 1989). Aside from directly inflicted injuries and deaths, numerous indirect health effects result from the destruction of infrastructure, the impact on food security and the social sector, and the effects of conflict on the economy and resource allocation decisions (Stewart 1993). Within the health system, conflict affects every element of its operation: policy formulation and implementation, planning and management, human, material and financial resource availability, support and deployment, and the actual delivery of services.

There have been detailed descriptions of the impact of conflict on health in countries such as Nicaragua (Garfield et al. 1987; Garfield 1989; Garfield and Williams 1992; Braveman and Siegel 1987), Bosnia (Toole et al. 1993; Mann et al. 1994; Weinberg et al. 1995), Mozambique (Cliff and Noormahomed 1988), Sudan (Dodge 1990), Uganda (Dodge 1985; Dodge 1986), Kuwait and Iraq (Lee and Haines 1991), Eritrea (Sabo and Kibirige 1989), Ethiopia (Hodes and Kloos 1988; Kloos 1992) and many more. There has, however, been relatively little description, and even less analysis, of the specific im-

pact of conflict on health services and health systems as structured and provided by grassroots political organizations and liberation movements. This is one element of a broader gap in understanding how communities and health systems respond to conflict situations and what form is taken by any coping strategies and adaptive mechanisms they develop.

This paper seeks to document experiences from within the Tigray People's Liberation Front (TPLF) as it sought to mount its political and military struggle against the military regime of Mengistu Haile Mariam and the Ethiopian Derg¹ (1975–1991). The first author (BGA) was intimately involved in the development of TPLF health-related activities.

This paper provides some background information about Tigray and its struggle for a democratic Ethiopia in which the wide range of national groups within the country would have a greater degree of control. This is followed by a description of the impact of the war on Tigray. We describe the response developed by the TPLF which emphasized the establishment of accountable local government structures that had a commitment to healthy public policy at local level. Lastly, we briefly consider the

implications of these experiences for latter-day Tigray and Ethiopia and for other countries undergoing similar experiences.

Tigray

Tigray is located in the northern-most part of present-day Ethiopia (Figure 1). Its population, according to the 1994 population and housing census, was 3 136 267 (PHCC 1994). The region is predominantly Tigrigna-speaking (94.8%), and Christian (Orthodox Ethiopian; 95.5%) with Muslim (4.1%) and Catholic (0.4%) minorities. Two other minority populations are the Saho (Erob) (0.7%) to the north east and the Kunama (1800 people in all) to the north-west of Tigray; these groups are also present in adjacent Eritrea.

Historically Tigray was the seat of the ancient Kingdom of Axum, a civilization dating back to 2000–1000 BC (Phillipson 1993). Although there is relatively little detail about Axumite history, two features have been prominent: impressive structures, known as stelae, of over 30 metres in height and over 800 tons in weight were carved out of single boulders and a unique script, known as *Fidel*, was developed leaving a rich legendary and religious literary heritage. The Tigrayan population is proud of its cultural, historical and recent military-political achievements.

When much of Africa was colonized by European powers, the Ethiopians defeated the colonialists in several battles, the most famous of which was the defeat of the Italians in the battle of Adua, Tigray, in 1896 (Haggai 1986). Against this historical

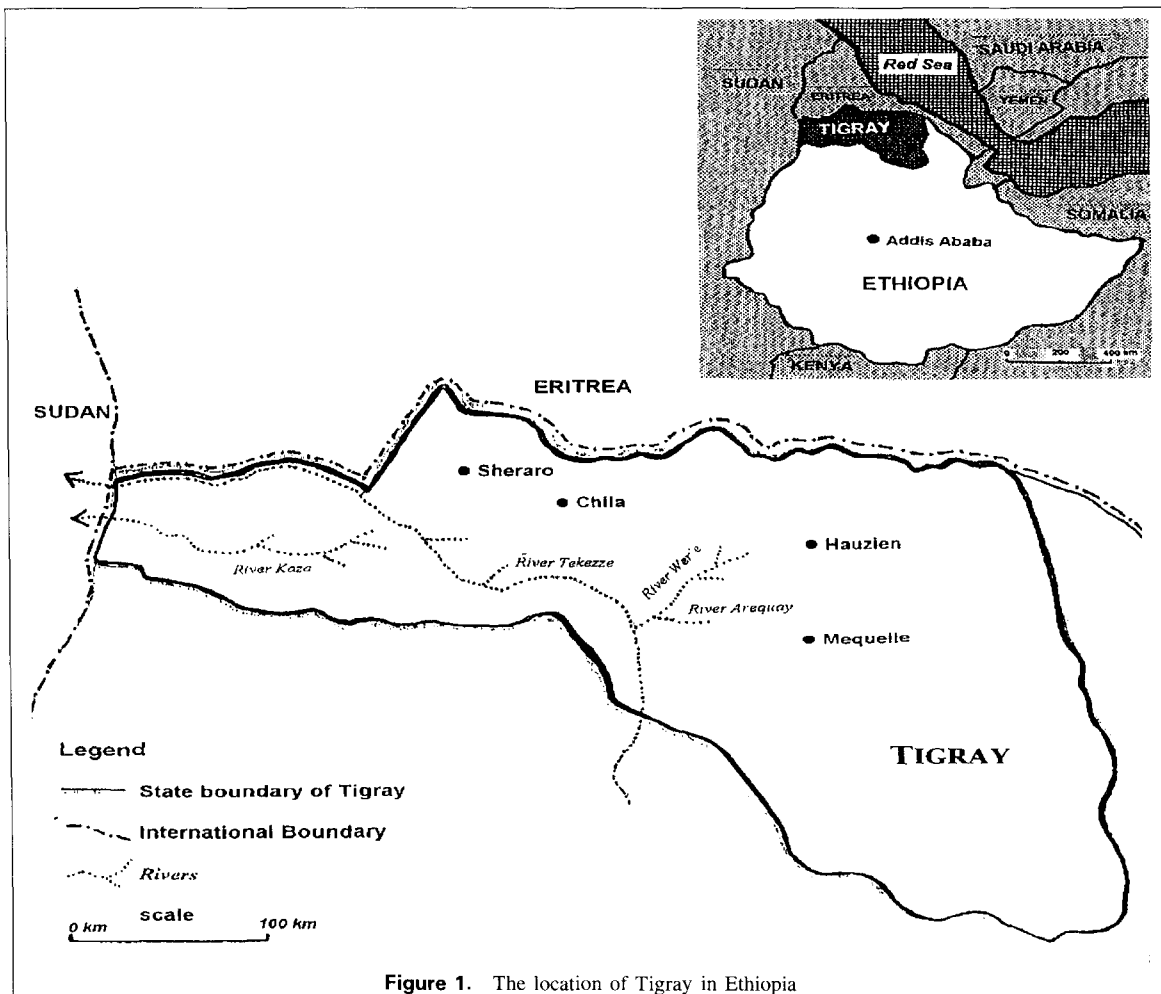


Figure 1. The location of Tigray in Ethiopia

background of independence and pride, persist both poverty and underdevelopment. In 1972 and 1984 severe drought affected Ethiopia; underlying political conflict both contributed to and exacerbated the ill-effects of climatic change leading to large-scale population displacement and deaths from starvation and disease.

The beginnings of armed struggle in Tigray

The struggle to change Ethiopia from a stagnant and underdeveloped economy, with an ecclesiastical and monarchical form of government, into a democracy with a self-sustaining economy able to feed its own people, was begun by the Ethiopian Students' Movement in the mid 1960s. By 1974, the government of Emperor Haile Selassie was overthrown in a popular uprising in which the main demands were for land reform, freedom of association and expression and the resolution of the national question, particularly the conflict in Eritrea. As the democratic movement was not organized and there were no organized political parties to assume power, an elite group of military officers took power. Over the next few years, the Ethiopian Students' Movement, which had spearheaded the democratic movement, split into a variety of groups: the most prominent were the Ethiopian Peoples Revolutionary Party (EPRP), the All Ethiopia Socialist Movement (MEISON), the Tigray People's Liberation Front (TPLF) and the Oromo Liberation Front (OLF).

MEISON allied itself with the military regime, while the others formed the armed opposition given the absence of space in which to legally organize. The Eritrean movement was also split into two major guerilla forces, the Eritrean Liberation Front (ELF) and the Eritrean People's Liberation Front (EPLF), both of whom continued the armed conflict within Eritrea. The OLF concentrated on the south, while the TPLF and the EPRP organized resistance forces from a base in the Tigrayan foothills. War broke out in Tigray in 1975, just one year after the overthrow of the Haile Selassie regime.

The impact of war on the population

As elsewhere, it is virtually impossible to describe precisely the magnitude of direct and indirect effects of seventeen years of war (1975–1991). In the absence of reliable and complete death registration, health service statistics, and population surveys,

calculating the human cost of war is difficult and open to bias and manipulation on all sides (Zwi 1996). The Ethiopian government, at war with its own population, had little incentive to carefully document the health burden it imposed.

During the early years of the armed struggle, the TPLF conducted itself along classic guerilla warfare lines. The response of the military government in Ethiopia was to mount a series of high intensity counter-insurgency offensives, eight of which were carried out between 1975 and 1984. In the seventh offensive, for example, 40 000 soldiers, over 200 armoured trucks and tanks, MIG fighter aircraft and helicopter gunships were used. Between 1975 and 1982, the Relief Society of Tigray (REST)² estimated that approximately 8650 homes were burnt, 200 000 people displaced, 8000 people killed, 20 000 tons of grain seized or burnt, and over 10 000 domestic livestock killed or plundered (REST 1983).

Throughout the war, the people of Tigray had conducted their markets late in the afternoon or at night in order to avoid air raids. The military government of Ethiopia repeatedly attacked these markets which were traditionally held on certain days in specific places. At least 350 raids in 150 different locations took place. The towns of Chila and Sheraro, both in the western zone of Tigray where displaced people often took shelter, were both bombed over 100 times. The estimated average number of casualties in each of these events was around 75 people killed and a similar number wounded. This suggests that over 26 000 people lost their lives in these events: an underestimate given that these figures are based on recorded events only. The worst recorded event was the bombing of Hauzein market on 22 June 1988 in which 1800 people died, 700 were injured, 800 houses were destroyed and 700 livestock lost (de Waal 1991).

TPLF bases were less directly targeted, in part due to the organization's ability to camouflage them and to locate them in inaccessible, and often underground, sites. An additional explanation is that the Ethiopian government specifically concentrated its actions on civilians in order to harass and turn them away from the TPLF.

It is difficult to separate out the impact of the conflict from the effects of famine on the living conditions of the population. What is clear is that in the 1984 Ethiopian famine, Tigray was especially hard

hit. This was for three main reasons. Firstly, Ethiopian government policy sought to compel Tigray to surrender by forcibly resettling communities, withholding international aid, and directly targeting refugees and REST feeding camps. Secondly, a temporary misunderstanding between the TPLF and EPLF led to international aid passing through Eritrea to Tigray being blocked. Thirdly, there was a delay in the international aid response to the food needs of those who trekked for 30 days from Tigray to the Sudan.

Of the 150 000 Tigrayan refugees who fled to the Sudan, over 15 000 died from malnutrition and epidemics of malaria, cholera, measles and diarrhoea. At the time of the emergency, death rates in the refugee camps in Eastern Sudan were among the highest reported in any of the twelve large scale movements of refugees across international borders since 1971. The death rate reached 14 per 10 000 per day in one of the reception camps (Mercer 1992).

An Ethiopian demographer who studied the populations affected by famine in Welo and Tigray estimated the crude mortality rate for the two regions together as being around 123 per 1000, five times greater than usual. He estimated that up to 620 000 people may have died as a result of population displacement, famine and disease in these two regions (Kidane 1990).

A factor which increased the risk of death and disease was the general state of health of the Tigrayan population. Malaria was (and still is) endemic in 60–70% of Tigray, but the TPLF fighters who lived in the river beds of the Tekezze, the Were'e, Kaza and Arequay were probably instrumental in spreading the less chloroquine-sensitive strain of *P. falciparum* from the western region to the whole of Tigray.³ Aside from war-related injuries and their management, the key task of the TPLF department of health was to develop an appropriate response to falciparum malaria. The load on services, from this disease alone, was massive (Table 1).

Not surprisingly, junior health staff both over- and under-diagnosed the condition (Ross and Moreno 1985), given the variation in clinical presentation and the health workers' relative lack of training. Malaria was, on occasion, misdiagnosed as diarrhoea, pneumonia, meningitis and pyelonephritis. Even when the correct diagnosis was made, treatment was not necessarily effective given the poor sensitivity of

p. falciparum to chloroquine and the emergence of resistant organisms. Another significant epidemic was meningococcal meningitis: in 1982, 6927 people were diagnosed with this condition and 1682 died (case-fatality ratio of 24%); in 1989, 19 233 people were infected and 1790 died (case-fatality ratio of 9%). One possible reason for the decrease in case fatality ratio was the campaign conducted by the TPLF department of health together with the local government leadership. They issued large amounts of chemoprophylaxis, undertook extensive vaccinations and reduced public movements and gatherings (Department of Health of the TPLF 1991).

Table 1. Patients treated in 51 Baito health clinics in 1989 (Department of Health of the TPLF, 1991)

Disease	Number of cases	% of total
Malaria	235 509	48.7
Respiratory infections	47 204	9.7
Diarrhoeal disease	23 697	4.9
Parasitic infections	22 584	4.6
Skin conditions	21 054	4.3
Nutritional conditions	11 280	2.3
Eye conditions	8 684	1.7
Urinary tract infections	3 897	0.8
All others*	109 568	22.6
Total	483 477	100.0

* This includes injuries, fever of unknown origin, childhood infections (such as measles, whooping cough, poliomyelitis), physical disability and mental health problems.

A cholera epidemic among displaced people in 1984 led to an estimated 5000–7000 deaths, many among children and the elderly (Dept of Health 1984). Similarly massive epidemics of cholera have recently been reported in Goma, Zaire, among refugees from Rwanda (Goma Epidemiology Group 1995).

The Tigrayan people's response: the 'Baito' health system

Early responses to disease and injury (1975–1980)

In the early days of the guerilla war, the response of the TPLF was more reactive than proactive. The TPLF had neither the experience nor the capacity to develop an effective health policy and strategy.

Instead, it trained 'first aiders' to treat the wounded and those with acute illnesses. Wounded civilians and those suffering from epidemic diseases were treated by TPLF personnel at no charge. The TPLF slogan of the time was 'fight the enemy with its own drugs and equipment', a reference to the fact that the earliest drugs were those captured from Ethiopian government and military sources in Hauzien and Edega Hamus. When the Bank of Axum was raided by the TPLF, some of the funds obtained were used to purchase drugs (Dept of Health of the TPLF 1991). There was no emphasis on public health or health promotion, however.

Improving curative care (1980–1985)

By 1980 the TPLF occupied and controlled almost three-quarters of the rural areas of Tigray. Government forces were limited to the major towns and their environs. The TPLF initiated two important reforms in areas under its control: a radical land reform programme in which land was more equitably distributed amongst all civilians, and the establishment of local government structures known as the 'Firdi Baitos' (law courts).

The 'baitos' were the key institutions of political participation and accountability developed by the TPLF. They were elected local governments at the district level. A district had between 30 000 and 40 000 people with three to five sub-districts and 40–50 villages (*kushets*). The role of these local governments was to serve as the lowest level organ of authority with written bylaws, as well as being the prime organization for resisting the military government and providing social support to those affected by war, drought and famine.

Demands for health services from the communities were met by attempts to build clinic structures. By 1981, the baitos had built 20 health stations in different districts. Another 21 local governments built 21 health stations in 1982. By 1990, the health stations numbered 88 with the larger and richer districts having built two or more. These clinics were all built adjacent to river beds dug into ridges and clad with green trees to avoid air raids. The average number of rooms was about ten and included delivery and emergency care.

The baitos mobilized their communities to establish revolving funds for drugs and equipment, an early example of community financing for health services. The richer districts, such as Samre, Edaga Arbi and

Sheraro, purchased microscopes and dressing sets, while others obtained their supplies through REST. Behind the 'community financing' exercise was the principle of self-reliance and local autonomy. The amount of money raised by local governments was impressive: Saharti, a Muslim community (population approx. 30 000), generated US\$21 636 (at the then exchange rate of US\$1=2.07 Birr) as its initial fund. The lowest on record was from Adi Kwo (population approx. 20 000) which raised US\$1576. These funds were used to purchase subsidized drugs through REST. By 1984, the local government of Sheraro (population approx. 30 000), which began with an initial fund of US\$6188, had raised US\$23 380 from user charges levied on those able to pay.

These innovative financing mechanisms preceded more widespread policy advice to low income countries from influential donors, such as the World Bank, to identify new means of generating local revenue for the health services, for example through the levy of user charges (Akin et al. 1987). More recently, the UNICEF-promoted Bamako Initiative has recommended other forms of community financing for health services (McPake et al. 1993). They also devoted particular attention to ensuring that the poor were not disadvantaged through such policies, one of the key risks associated with user fee schemes (Gilson et al. 1995). The social service committee of the baito was empowered to exempt those unable to pay: this benefited around 60% of health care users. Drugs for chemoprophylaxis, emergency deliveries, ORS sachets for rehydrating children, vitamins, iron and vaccines were free of charge.

Staffing these clinics with well trained health workers, and providing them with sustainable sources of drug supplies, remained a major problem. The TPLF responded by opening a training school for health workers (the Rhawa school). The social services committee of the local baitos, along with TPLF public relations officers ('kili hizbi'), recruited people for training from among the local population. The main criteria for selection were willingness to work without pay and to serve the community, unambiguous opposition to the military regime and a minimum academic background of Grade 4 or 5. These trainees joined those from the TPLF military who were trained as 'first aiders' and or junior nurses. The curriculum was initially similar to those in the government schools; with time these were more substantially modified.

1248 workers were trained from 1980 to 1984, just over one third (423; 34%) were women. About 16 pharmacy technicians, 6 laboratory technicians, 4 anaesthetists, 5 x-ray technicians and 10 OR nurses were also trained.

In 1985 an Oxfam-funded team of two doctors visited Tigray. They evaluated the health services provided by the TPLF Department of Health and found that the health workers running the services were extremely motivated and dedicated and that they had put in place an impressive primary health care system. They noted, in particular, the involvement of the community which was facilitated by the *baito* health committees. They also drew attention to the efficient drug distribution system which had been established and the supervision of primary care workers (Ross and Moreno 1985). Their criticisms related to the disease-oriented approach to health care, despite recent introduction of courses on public health. It was felt that Tigray stood at a crossroads in the development of its health services; the TPLF senior health staff and leadership responded to the Oxfam advisers' recommendations, together with their own similar assessments, by committing themselves to redress the inadequate balance between prevention, promotion and care.

Developing preventive and promotive health care (1986–1991)

An important seminar was held in Were'e in 1985 at which the TPLF health department reviewed its activities and strategies. Three influential reports were presented, summarizing the experience of the previous ten years (Abadi Mesfin, then head of the TPLF Department of Health); a critique of the public health services under the TPLF (Gebreab Barnabas – one of the authors of this paper) and army medical care (by Tewolde Legesse). The seminar lasted nine days and was chaired by the Central Committee of the TPLF, indicating the important role of health in the TPLF strategy. Around 60 health workers participated from both the TPLF military and civilian structures. The key points to emerge were that more effective team leadership of the Department of Health was required, that there was a need for a 'theory of liberation on health', a philosophical premise from which policies and strategies would emanate, and that the curricula for all health workers needed to be radically revised in order to incorporate public health, respond to local conditions and acknowledge the context of war. The Department was subsequently reorganized to reflect these priorities; more research-

based policies and guidelines were also expected from the leadership.

Another important meeting was held in 1987 in Kaza with over 150 participants, including the leadership of the TPLF, the military and social services bureau, and civilian and army health personnel. In 48 days of debate, workshops and training, the conference reviewed health care in war situations, analyzed the role of the TPLF health department over the previous 12 years, considered essential drugs procurement, storage and utilization, reflected on the development of human resources for health and analyzed army health care activities. The conference represented a significant development in the refinement of wartime health policy and strategy; one limitation, however, was the heavy reliance on Vietnamese, Chinese and Korean experiences of war, rather than an emphasis on Tigrayan and Ethiopian realities. The papers presented reflected document reviews from reports and archives rather than more systematic, field-based research. Relatively little theoretical work had been done at this time and lessons from elsewhere were few and far between. Information on the health impact of conflict and the response in nearby Uganda (see, for example, Dodge 1986) were not examined, in part because the nature of the conflict was considered to have been so different but also as a result of relative isolation and lack of contact with experiences. While lessons about maintaining disease control activities and services during periods of conflict and the likely impact on health systems were appreciated, the depth of analysis was limited.

Some participants in the Were'e and Kaza meetings argued that promoting preventive and health promotion work in a war situation was wishful thinking and unrealistic. They argued that one had to end the conflict if injuries, famine, and epidemics were to be controlled. For them, the key concern was to have an organized, efficient and effective curative service. Health promotion and general development would have to wait for later.

Others argued for developing preventive and health promotion activities despite the war. Although the conflict disrupted the social fabric of rural communities and damaged the infrastructure, this called for refining concepts of how the health system should operate and how and what health strategies and policies should be put forward. Experience from Nicaragua, albeit in a very different conflict context where the revolution was mounted mainly from

above, had shown that popular participation was clearly possible and could be strengthened during wartime (Donahue 1986; Frieden and Garfield 1987). The TPLF experience in community participation at this time was that communities get organized not on an *ad hoc* basis but more effectively through youth, women and farmer's associations which addressed local problems. These organizations also formed the political base for local government in the aftermath of war (Barnabas 1995a).

The key principle of the health system (*Sera'te Tiina*) was defined at the Kaza conference as being democratic and revolutionary, in contrast to the doctor and hospital-centred curative and technocratic system of the Ethiopian government health services which did not involve local communities. It was agreed that health care should be democratized in order that communities and not the health establishment could decide on priorities and allocate resources. This pre-supposed the decentralization of political power and the empowerment of the poor through their direct participation in local government structures, the *baitos*. It was assumed that this would ensure that local knowledge and realities would be taken into account. The health system was also to be revolutionary in that it would foster new ideas, allow innovations and replace old and harmful habits, attitudes and practices with new ones. The method of effecting change was to be democratic, persuasive and practical, rather than imposed from above.

Health policy was defined at the Kaza conference as the general intent and broad goals of the health sector achievable within the given limits and capacities of the communities. The goal was phrased as 'health for the struggle' (*meqalesi tiina*) and implied taking steps and measures to alleviate the direct and indirect effects of the war, to maintain sufficiently high levels of energy to continue fighting, and to keep political morale high in order to frustrate and defeat the Ethiopian government troops. The health of the producers and fighters (*mefreyayin tewagain*) was to be given priority, and the problems of malnutrition, epidemic diseases and war injuries were considered central. The communities and local government *baitos* were to play the most decisive role in health work.

The broad objectives of the health system were i) to enable the public and the army to survive the war and to establish a programme which would lead to peace and development; ii) to give priority to communities and the TPLF army in order that they would con-

tinue to be able to fight, to be productive and to alleviate the wartorn and drought-affected economy; iii) to emphasize and actively involve the public and army in both the curative and preventive aspects of health care and to ensure that health promotion and the dissemination of health education material were given high priority; iv) to use local human and material resources in health as a priority over high-technology imported items and foreign support with self-reliance as a guiding principle; and v) to ensure that equity and justice were reflected in the health services in order that the role of health in the liberation effort duly enhanced the overall struggle.

Health strategy was elucidated as being primarily preventive and promotive. The relationship between promotive and preventive activities on the one hand and curative and rehabilitative activities on the other was defined as the relationship between the 'whole and the part'. The former was the overriding activity, the latter its augmentation. Thus, the preventive and curative elements of health care were not counterposed against one another but were seen as operating synergistically to promote the health of the communities.

In order to implement the above-mentioned policies, specific strategies were formulated: i) the *baitos* were to play the leading role in the delivery of health care; ii) the preventive approach was to be the priority alongside improving the quality of curative services; iii) health service delivery was to give greater priority to the lower echelons of the health care system rather than the hospital level; iv) training for health workers was prioritized; the curricula selected were required to be relevant and practical; v) an essential drugs list was established as were rules regarding the storage, distribution and utilization of drugs; vi) free treatment was made available for war injuries, medical and surgical emergencies, deliveries and epidemic diseases – for other conditions those able to pay for health care were expected to do so; vii) private sector pharmacies, clinics and hospitals were allowed but had to be certified by the Department of Health and licensed by the *baito* trade and commerce committee; viii) international support was recognized as important but had to be subservient to local policies and initiatives and all NGOs had to sign a multi-party agreement along with local *baitos*, REST and the Department of Health; and ix) the Department of Health was restructured to facilitate collective leadership as well as the periodic draft of a plan of action and regular evaluation.

Table 2. Examples of public health activities undertaken by local governments in Tigray in 1990 (Department of Health of the TPLF, 1991)

Local government area	Type of health activity undertaken						
	Number of participants	Houses cleaned	Houses painted	Swamps drained (m ²)	Ditches cleared (m ²)	Rivulets cleared	Pits dug
Shire	9 146*	4049	1 712	70	110	80	
Adua	22 772	3597		873		363	418
Axum	14 340	160	1 133	30		147	
K.Awlalo	28 770						
Tembie	25 000						
Inderta	290 674		8 000				15
POWs [#]	9 450	190	2 296		98	54	50
Total	400 162	7996	13 141	973	208	644	483

* Data from two local governments (baitos) only.

Prisoners of war.

These strategies sought to offer a balanced approach to the provision of care and the development of the health system in conditions of war. They raise questions about the extent to which health care can be delivered with a development perspective in war situations, rather than being provided primarily in the form of costly emergency relief which may prove unsustainable in the longer term (Macrae et al. 1995). The possibility of establishing more sustainable health systems during periods of conflict is likely to be reinforced by laying stress on longer term objectives, building on political and community commitment, flexibility and the development of equitable and sustainable financing mechanisms.

Specific health programmes were also established: nutrition for the army, first aid training for both the military and public, epidemic disease control, health education, health worker training, and essential drugs procurement and distribution. An immunization programme was not possible because of difficulties in ensuring the cold chain; a pilot project in 1989 was not taken forward until after the war in 1991. A number of these programmes are briefly described below.

Health education

The Department of Health produced two publications: the journal *Tiina* ('health') directed at health workers and the newsletter *Mekelkhal* ('prevention') which was aimed at the public. *Tiina* was published

Biannually in Tigrigna from 1985 to 1989 and covered topics such as AIDS prevention, standard treatment for tuberculosis, family planning and appropriate use of fluids for rehydration. *Mekelkhal* covered issues of broad public health concern such as control of malaria and meningococcal meningitis, AIDS prevention, personal and communal hygiene and basic first aid.

Health education was also promoted in farm settings: health education topics were selected on the basis of topical interest, were presented in locally understood language and terms, were related to local knowledge and practices, often employed role play, and ensured that education was followed up with specific activities (Barnabas 1995b).

Epidemic disease control

As mentioned earlier, malaria was the leading cause of illness during the war. Other epidemics of measles, whooping cough, meningococcal meningitis, cholera, relapsing fever and diarrhoeal diseases occurred. Malaria was tackled by the Health Department through efforts to involve the community in taking chemoprophylaxis: chloroquine tablets were given to pregnant women, under fives and patients with chronic illness. There were also annual campaigns (*Wefri Meskerem*) every September to clean houses, dig trenches and dry swamps (Table 2). There were no insecticides available.

First aid programme

The Department of Health had an extensive first aid programme both for the army and the public. The department developed a low cost first aid bandage and youths were trained to use this item. Underground shelters to protect the public during air raids were dug in the major towns and baitos. The first aid programme built confidence among the public who felt reassured as to what should be done in case of air raids and bombardment. Farmers who worked in terracing and reafforestation used the first aid training for day to day needs.

Training programme

A new set of curricular for the training of health workers was developed in 1988: the criteria for these training programmes were that they be relevant, dynamic, prevention-oriented, problem-solving and ethically humane. A set of health workers were trained to implement the new health policies and the agreed strategies. By the end of the war, 46 field surgeons, more than 300 senior and 1500 junior nurses, 160 junior midwives, over 3000 traditional birth attendants and 3000 village health workers had been trained. More than 10 stationary public hospitals and 15 mobile army hospitals were functioning, as were around 150 health stations in both Tigray and Northern Welo and Gonder. The latter were the strongholds of the Ethiopian Peoples Democratic Movement (EPDM), a sister movement to the TPLF.

External review of the Tigray department of health activities

An external review by a British volunteer group in 1989 (following the Oxfam review of 1985) specifically noted the high degree of coordination between the health department and the baitos. They noted the strong emphasis on health promotion and prevention and that the communities had themselves assumed much of the responsibility for developing health resources. Despite these commitments, however, the external evaluation noted that the health department still devoted substantial resources to surgical and medical care because of the need to look after the increasing number of war casualties.

Two other evaluations sometime later also independently remarked upon the high quality of medical services being provided and the high degree of commitment by the community which often provided support services, such as meals for patients,

free of charge (HAG 1989). In 1991, one of these evaluators stated that despite 'these difficulties (war and recurrent drought) a health system offering services for a population of 4.8 million has been developed' (Francis 1991).

Role of REST (Relief Society of Tigray) in the development of health services

The Relief Society of Tigray (REST) was founded in 1978 as a non-profit humanitarian agency created and run by Tigrayans. It was also seen as an active participant, with the TPLF, in socioeconomic development programmes during and in the aftermath of the war.

REST was actively involved in the terracing and reafforestation programme, in the provision of war through shallow wells, construction of roads, the purchase of drugs, equipment and emergency vaccines. REST made a valuable contribution to health by facilitating the involvement of international NGOs such as *Médecins Sans Frontières* (France), *Community Aid Abroad* (Australia) and *Oxfam* (UK) in assisting with the training of more specialized health workers, for example field trained orthopaedic surgeons, physiotherapists and basic laboratory technicians. REST was also responsible for obtaining medical textbooks and manuals and assisted the Department of Health in publishing training materials.

REST played a strong role in promoting intersectoral development activity through the baito system. REST, supported by NGOs in Europe, Australia, Canada and the USA, was aided by support committees in these countries, and was able to raise sufficient funds to operate a fleet of 200 trucks to deliver humanitarian assistance from across the Sudanese border.

The baito system in the aftermath of war

The war in Ethiopia came to an end in 1991. A coalition of forces took government power and set about developing the new constitution and planning for elections, which were subsequently held in May 1995. The TPLF continued to be actively involved in government and is a member of the ruling party, the EPRDF, in the current federal government. The Eritrean population held a referendum and chose to become an independent state; this was honoured by

the post-war Ethiopian government. Tigray has opted to remain within the Federal Democratic Republic of Ethiopia and is one of the nine member states of the federation.

Health services in Tigray have undergone some change since the end of the war. Although droughts still occur, and a severe drought occurred in 1994, the trend to migrate within and outside Ethiopia has been greatly reduced by the provision of more effective and equitable food relief activity. Clinics which were originally sited in river beds or underground have been re-established in more appropriate locations. From 1991 to 1995, over 60 of the 88 clinics operating during the war were rebuilt and renovated. In addition, more clinics, now numbering 138 in all, were built. The number of Tigrayan doctors working in the region has increased from four to 76.

Ongoing research by the first author of this paper has shown that many of the health workers trained during the war are still active. Six hundred and eighty of 1000 community health agents (CHAs) were found to be still functioning; in one local government, Enda Mariam, for example, there were 57 active traditional birth attendants (TBAs) in 1995. Weekly sanitation days were still observed in many local government towns, as was the case during the war.

On the negative side, however, challenges to the public health orientation of the baitos have begun to be seen. Health education, one of the key activities of the wartime Department of Health, has declined, and the journals and newsletters developed during the war did not appear from 1991 to 1996. Neither did the annual evaluation and strategy meetings of the Department of Health take place during the transitional period after the war. Furthermore, private practices, driven by the individual needs of the practitioners, have expanded substantially with little control or regulation. People with an orientation more attuned to curative care have assumed the leadership of the health bureau, making it more difficult to sustain the wartime ethos of the baito health system. Talking to ordinary mothers in a local government of Egela, one of us (BGA) found that the mothers preferred the wartime ethos and said: 'during the war, the health workers used to call us mothers (ADEY); now they summon us "ye there!" It makes a difference.' There are tensions and at times conflicts between the government-trained health workers and those trained by the TPLF during the war. The government-trained workers who are more senior

underestimate the field-trained workers because many of them are unable to read and write English properly. The field-trained health workers belittle the government-trained professionals as being money-oriented and without commitment to the community.

Nevertheless, the strategy of building the health system from below and promoting the important role of local governments in health and development activity seems to have been adopted as government policy. Already, health officers and community nurses similar to those trained during the war in Tigray are being trained in Gonder and Jimma faculties of medicine. An additional school for middle level health workers is being opened in Dilla. The field-trained health workers are getting enrolled into these schools for upgrading and standardization. Whether this will be effectively implemented, and what form this activity will continue to take, remains to be seen. Research is currently ongoing to determine the strengths and limitations of current local governments in Tigray and other parts of Ethiopia in promoting equity and primary health care.

Conclusion

The baito health system was an holistic attempt to find a way out of the spiral of underdevelopment and the disasters of famine, drought and conflict in Tigray. Relief and disaster management required to deal with mass casualties, epidemics and basic curative care overwhelmed the health care system in many respects. Nevertheless, the baito health system became the key institution leading intersectoral development activities from reafforestation to soil and water conservation, education, relief and rehabilitation, and health promotion.

The baito system facilitated community involvement in relief and development activities at the local level and assured a degree of community empowerment in deciding on key issues such as the determination of local priorities and resource allocation. The committee structure of the baitos enabled intersectoral collaboration to take place at peripheral level. These strategies were very much in keeping with the primary health care approach as originally articulated in Alma Ata (1978) and suggest that development and empowerment are possible to promote even in the midst of civil conflicts.

Despite increasing evidence of how conflict disrupts health and health systems, we have learned little about how those under pressure respond and what can be done to maintain health systems and the delivery of health care and public health activity during periods of organized violence and mass political upheaval. A key issue is how to overcome the curative and reactive nature of health care during these periods and to promote a balanced range of therapeutic and preventive public health interventions. Other issues raised in this brief study relate to the emergence of the private sector during periods of conflict and the mechanisms potentially available to ensure that it plays a positive role in increasing coverage and maintaining quality. In the post-conflict phase, issues related to the appropriate development and redefinition of the health system, the role of international assistance, the mechanisms for sustaining the financial base of health services, the importance of promoting policy dialogue, the reintegration of different cadres of health workers, and the maintenance of successful wartime innovations all remain as important challenges for the future. This case study hopefully contributes some insights from within one organization in one region of one country; others are to be encouraged to follow suit and describe and analyze their health system experiences from inside conflict situations.

Endnotes

¹ *Derg* is Amharic (official language in Ethiopia) for committee or junta.

² REST (Relief Society Of Tigray) was an NGO formed by Tigrayans in 1978 and affiliated to the TPLF.

³ This is an example of how conflict may increase the risk of epidemics and diminish ongoing disease control efforts. Increasing interest in emerging infections should clearly take account of the role of conflict with diminished disease control activity, poor resources, population movement and displacement, and incomplete treatment regimes.

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Acknowledgements

Gebre Ab Barnabas acknowledges the support of a partial grant from the Emergency Humanitarian Action (EHA) division of the World Health Organisation. Anthony Zwi is employed within the Overseas Development Administration-funded Health Economics and Financing Programme. The views presented reflect those of

the authors and should not be construed as reflecting those of the funders of this work.

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