

1 Introduction

War and famine have a long history of association. Starving out the enemy has been a tactic used throughout the ages, epitomised by the siege, where a population is surrounded, effectively cut off from outside supplies and subjected to bombardment. During the war in the former Yugoslavia, areas of Bosnia and Herzegovina¹ were successfully besieged by the Bosnian Serb army, they were heavily shelled and access to supplies was prevented.

The conflict in Bosnia resulted in heavy losses and widespread destruction. Some 2.7 million Bosnians, out of an original population of 4.4 million, either fled the country as refugees or were internally displaced. Thousands of the displaced sought refuge in small, besieged pockets, living in overcrowded conditions without adequate water and power supplies. Food supplies were abruptly reduced, economic activity was severely disrupted and welfare services were seriously affected. The severe winters typical of Bosnia, with temperatures dropping to below minus 20°C, exacerbated the suffering.

The impact of the war on populations trapped in the besieged areas of Bosnia threatened a humanitarian disaster on an unprecedented scale, and historical experience suggested a potential for widespread starvation. Blockades and sieges, which had taken place in Europe, largely during the First and Second World Wars, had resulted in thousands of people dying from starvation and disease. For example, the allied blockade of Germany from March 1915 to 1918 by the British and French caused food shortages and soaring food prices. The particularly severe winter of 1916–17, when the potato crop failed (dubbed the ‘turnip-winter’) exacerbated the situation, and cases of tuberculosis, hunger oedema and micronutrient deficiency diseases became rife. The number of deaths in Germany increased from 88,235 in 1915 to 293,760 in 1918, despite a drop in the birth rate from 30/1,000 to 15/1,000 between 1914 and 1919. Mortality increases were particularly high among children and the elderly (Vincent 1985).

The creation of the Warsaw Ghetto by the Germans in 1940 confined up to 445,000 Jews in a 3.5 square mile area that normally housed about 160,000. The

Why are there No Longer ‘War Famines’ in Contemporary Europe?

*The Case of the
Besieged Areas of
Bosnia 1992–5*

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Box 1: Coping strategies employed in the besieged areas of Bosnia

Direct link with food

- Cultivation of gardens
- Food parcels from relatives abroad
- Reduction in intake of food
- Change in dietary patterns
- Barter (e.g. cigarettes for food)

Indirect link with food

- Paid employment:
 - formal (e.g. army, police, trading)
 - informal (e.g. selling firewood, knitwear)
- Private savings
- Sale of possessions
- Cash gifts from relatives abroad
- 'Illegal' activities (e.g. black market, smuggling, stealing, prostitution, etc.)

official ration was 184 kcals per day for Jews in the ghetto (compared with 2,613 kcal for Germans in Poland) and 699 kcal for Poles (Roland 1992). These are clearly not rations meant for survival: the Nazis had calculated that they could destroy the population in the Warsaw Ghetto in nine months through mass starvation and accompanying infectious diseases (Winick 1994). Poor hygiene re-ignited typhus and an epidemic flared up. A further hardship was the cold, and the practice of sleeping in clothes facilitated the spread of typhus through lice. Between November 1940 and June 1942, doctors working inside the ghetto recorded a total of 70,381 deaths of which 18,237 were due to starvation, 2,509 to typhus and the remaining to 'unknown' causes, though this was usually believed to be starvation (Fliederbaum *et al.* 1994). People outside the ghetto were able to access other sources of food (e.g. trade with farmers), but people inside officially had no access to other sources. Actually, all sorts of black market trading went on between the inhabitants of the ghetto and those outside, which is why starvation did not kill everybody and the Nazis finally razed the ghetto to the ground.

The siege of Leningrad between September 1941 and January 1944 by German forces involved incessant aerial bombing and shelling, while the winter of 1941–2 was the coldest in over a century. Lack of fuel reduced the power supply, badly affecting heating and restricting cooking, water and sewerage systems were damaged by shelling and there were increasing food shortages. Weight loss was estimated to be up to 33 per cent of pre-starvation weight while scurvy, pellagra and night blindness had all appeared by the end of the winter. Diseases such as dysentery, bronchopneumonia and tuberculosis were rampant

and a typhus epidemic started. Estimates of deaths attributable to starvation during the siege range from 630,000 to 1 million out of a pre-war population of 2.5 million (Keys *et al.* 1950; Salisbury 1969).

Also during the Second World War, the Dutch 'hunger winter' between September 1944 and May 1945 had particularly adverse effects on the cities of western Holland. Roads and canals were guarded to prevent smuggled goods being brought in and while country dwellers were able to live without much distress, urban populations, only a few miles away, suffered immense deprivation. The winter of 1944/45 was one of the most severe in many years. There was no electricity, wood, coal or running water and the sewerage system broke down. Rations were successively cut and by January 1945 the daily ration in Amsterdam amounted to just 450 kcal/day. Mortality from undernutrition was reported to be 104 deaths per week in The Hague (total population 500,000), 136 per week in Rotterdam (total population 650,000), and a total of 2,351 deaths in the period November 1944 to July 1945 in Amsterdam (total population 700,000) (Smith 1947).

The factors which precipitated these localised famines were similar to those afflicting Bosnia in the 1990s: a sudden disruption of the food supply; serious shortages of water, power and heating; inadequate shelter; overcrowding; disintegration of preventative and curative health services; and cold winters.

Furthermore, humanitarian agencies were apparently unable to bring in enough food aid to Bosnia to meet the shortfall. During the first six months of the siege

Table 1: Economic and living standard indicators in selected countries, 1990

Countries	GDP <i>per capita</i> (PPP\$) ^a	Life expectancy (years)	IMR ^b (per 1,000 live births)	Adult literacy (%)
Former Yugoslavia	3,060	72	20	93
Angola	840	46	128	42
Ethiopia	369	46	125	n/a
Liberia	857	54	131	40
Mozambique	1,072	48	149	33
Rwanda	657	50	112	50
Sierra Leone	1,086	42	146	21
Somalia	836	46	125	24
Sudan	949	51	102	27
Zaire	367	53	96	72

n/a = not available

Source: UNDP 1993; WHO; World Bank 1992

^a PPP = Purchasing Power Parity. The purchasing power of a country's currency is the number of units of that currency required to purchase the same representative (or similar) basket of goods and services that a US dollar (the reference currency) would buy in the United States (UNDP 1995).

^b 1991 rates.

of Sarajevo, only 20–25 per cent of estimated food needs could be airlifted into the city (James 1992; Robertson 1992), while between January 1993 and March 1994, food aid needs were never fully met, averaging only 50 per cent for Central Bosnia (WFP 1994a). The media and international humanitarian agencies alike predicted famine as winter approached in 1992 and again in 1993.

Yet, despite predictions of imminent starvation from such authoritative sources as the World Health Organization, the expected famine failed to materialise. The question addressed in this article is: why was there no famine in the besieged areas of Bosnia during the war?

2 Why was there no famine in Bosnia?

While the besieged populations were subjected to horrifying conditions including an abrupt and severe reduction in food *availability*, the decline in food *accessibility* did not become so critical as to be deemed a famine. The population retained access to a variety of alternative sources of food and were able to adopt a series of coping strategies in order

to obtain food (Watson and Vespa 1995). These are illustrated in Box 1. Furthermore, despite the collapse of the health care system, disruption of the water supply, erosion of environmental sanitation services, and a subsequent rise in infectious disease (e.g. a 13-fold increase in incidence of diarrhoeal diseases (Puvacic and Weinberg 1994)), epidemics of the big killers (e.g. cholera, dysentery, typhus) were avoided. Adults lost weight and wasting levels among the elderly rose (Vespa and Watson 1995), but there was no widespread malnutrition or raised mortality rates associated with malnutrition.

It is argued here that pre-crisis conditions and the huge humanitarian response to the crisis in Bosnia played crucial roles in averting famine. Comparisons are made with African countries that experienced famine during the 1990s, to establish what the major criteria were in protecting the Bosnian population from famine.

2.1 Pre-crisis conditions

There were a number of factors in pre-war Bosnia, which protected the population against famine. These include good socio-economic conditions,

Table 2: Health indicators in selected countries

Countries	One-year-olds immunised 1990–2		Maternal mortality rate (per 100,000 live births) 1988	Population per doctor 1984
	polio	measles		
Former Yugoslavia	81	76	27	250
Angola	13	26	900	17,750
Ethiopia	13	10	900	78,780
Liberia	28	61	600	9,340
Mozambique	53	60	800	n/a
Rwanda	85	81	700	35,090
Sierra Leone	72	65	1,000	13,620
Somalia	18	30	900	19,950
Sudan	67	66	700	10,190
Zaire	31	31	700	13,540

n/a = not available

Source: UNDP 1993; UNICEF 1994

good health and nutrition status, and a demographic profile with a majority of adults who were able to look after the vulnerable – children and the elderly (i.e. a low dependency ratio).²

Socio-economic conditions

The economy, standard of living and education level in Bosnia were relatively good before the war while the infrastructure was well developed. Some basic indicators of well-being are presented in Table 1, and show that the former Yugoslavia was much better off compared with African countries which experienced famine during the 1990s. The underlying structural failures (chronic food insecurity, poverty, underdeveloped infrastructure), which have played crucial roles in causing famine in Africa and Asia, were not present in Bosnia before the war. Thus, although the war had devastating consequences, the population was better equipped to deal with the adverse environment.

Health status

Health indicators for the former Yugoslavia and African countries which experienced emergencies during the 1990s are shown in Table 2, and illustrate the differences in pre-crisis health status and access to health services. Although much of the data are missing or unreliable, in general, the

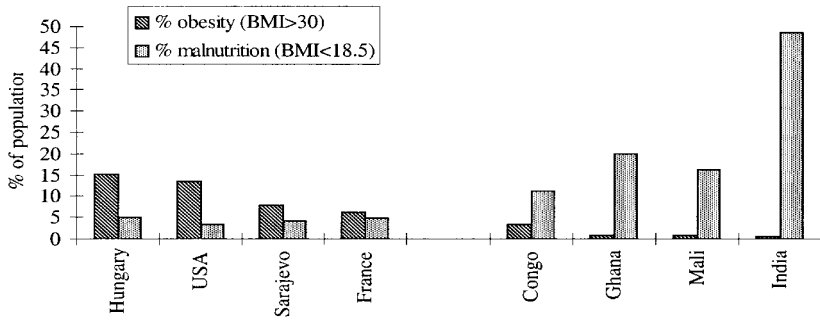
population of the former Yugoslavia were less likely to die prematurely, lived for longer, had better access to health services and received better quality health care than the African populations. Thus, the health of the Bosnian population was not stressed before the war. Rather, health status and standards of care were good and the population was better able to combat adverse health conditions compared to populations who were already suffering from poor health.

A further factor which protected the Bosnian population, was the pre-crisis disease epidemiology. Before the war, rates of *chronic* diseases were on the rise in Bosnia, but there were low rates of *infectious* diseases (diarrhoea, acute respiratory infection, AIDS, malaria, etc.), which are associated with malnutrition and mortality in poorer countries. Furthermore, vaccination levels were high so that the majority of children were protected against potentially deadly childhood diseases. The deterioration of the public health system was, therefore, likely to have a less devastating and slower impact on health status.

Nutrition status

Malnutrition, unassociated with specific disease syndromes, was rarely seen in Bosnia before the

Figure 1: Obesity and malnutrition in selected countries*



Source: Shetty and James 1994; Zec *et al.* 1995.

* Only limited data from developing countries on obesity and malnutrition are available. These data are from population surveys carried out between 1975 and 1990.

war. Obesity, on the other hand, was a problem. For example, a study of non-manual workers in Sarajevo found that while only 4.3 per cent of adults were underweight (body mass index (BMI) <18.5), 8 per cent were obese (BMI >30.5) (Zec *et al.* 1995). Although population level data on adult nutritional status are scarce, Figure 1 illustrates the different patterns of obesity and malnutrition in Europe and the USA compared with African and Asian countries for which data are available.

Relatively good pre-crisis nutritional status was an important factor in protecting the Bosnian population against dangerous weight loss. The initial 'fat stocks' of the Bosnian population acted as a buffer against malnutrition and it would have taken longer for malnutrition to develop in this population compared to already nutritionally stressed populations.

Demographic profile

Evidence from famines in developing countries shows that mortality and malnutrition rates are highest among young children (Toole and Waldman 1990; 1993) because of their vulnerability to food shortage and infection. The demographic structure of developed countries, including pre-war Bosnia, was different from that in developing countries, however. There were proportionally fewer young children and a greater proportion of the elderly, as Figure 2 demonstrates. Overall, this meant that in Bosnia, the dependent population most vulnerable

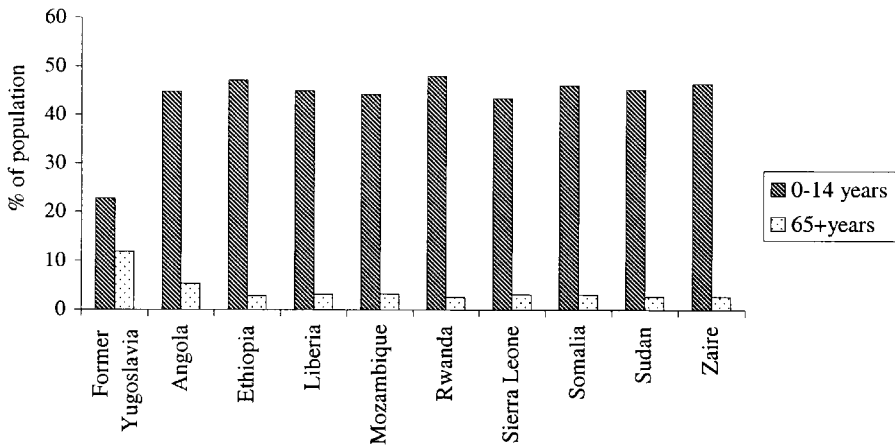
during a crisis, represented a lower percentage of the population than in developing countries. Thus, there were proportionally more able-bodied adults to take care of vulnerable children and elderly people.

2.2 International response to the crisis

The war in the former Yugoslavia sent shock-waves throughout the world. This was the first major war in Europe since the Second World War and the sight of European women and children fleeing from their villages jolted the memories of those who had witnessed similar scenes 50 years previously. Even before the war started in Bosnia, the UN Security Council had passed its first resolution demanding an immediate cessation to hostilities in Croatia and ordering a complete arms embargo on Yugoslavia (Resolution 713, September 1991). The fighting continued however, and in February 1992, the first peace-keeping forces were sent by the UN to maintain stability in the Serbian-held areas of Croatia (Bennett 1995; Glenny 1992; Kaplan 1994; Mercier 1994; Silber and Little 1995).

The war spread to Bosnia in the spring of 1992. As stories of ethnic cleansing and the existence of concentration camps in Bosnia began to filter out, the consciences of Western countries became increasingly uncomfortable and international diplomatic efforts to solve the crisis were intensified. A series of attempts to orchestrate a

Figure 2: Age distribution in selected countries, 1990



Source: World Bank 1992

ceasefire and political agreement between the warring parties were made. Though many of the agreements were signed, each one was broken and the atrocities continued until the signing of the Dayton Peace Agreement in December 1995.

Decisive military action by the UN was not forthcoming throughout the war in Bosnia, and it was NATO who carried out the air strikes against key Bosnian Serb targets in September 1995, which were instrumental in bringing an end to the war. Instead, the UN opted to respond to the crisis by sending humanitarian aid, and military action was restricted to a joint UN Protection Force whose specific mandate was to protect the safe delivery of humanitarian aid (UN 1993).

Support for humanitarian action

The worldwide attention paid to the crisis in the former Yugoslavia was reflected in the magnitude of the appeals made for aid and the subsequent donor response. As a result, the humanitarian assistance operation in the former Yugoslavia was one of the largest humanitarian initiatives ever undertaken by the international community (UNHCR and WFP 1998). Donations to the former Yugoslavia tended to be more generous than to African countries also facing crises during this period, leading to large disparities in *per capita* spending.

For example, in 1992, the year that war broke out in the former Yugoslavia, UNHCR, the lead UN

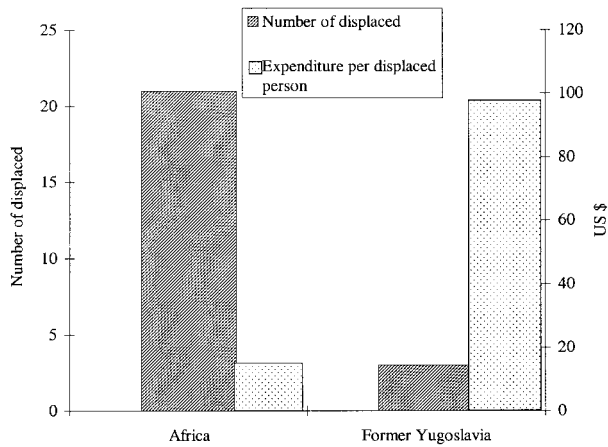
agency, received a total of US\$294.4 million for the former Yugoslavia from specifically earmarked Special Programme money. Contributions for 1993 were expected to double to US\$447.6 million (UNHCR 1994). The large donations changed the proportion of world UNHCR expenditure completely, with Europe receiving more than Africa (see Figure 3). Thus, while Africa held about one-third of the world's refugee population in 1992, UNHCR expenditure per person on the 15 million displaced and 6 million refugees in Africa was about US\$13.5, while in the former Yugoslavia, spending per person on the 3 million refugees and displaced was about US\$98.

Similarly, the European Community Humanitarian Office (ECHO) – currently the largest food aid donor in the world – spent ECU 1,221 million on humanitarian aid in the former Yugoslavia between 1992 and 1998 and only ECU 390 million between October 1993 and 1998 on the Great Lakes crisis, which affected Rwanda, Burundi and neighbouring countries (<http://europa.eu.int/en/comm/echo/crisyugo.html>). In 1993 alone, ECHO's allocations to relief operations in the former Yugoslavia were ECU 395 million which represented no less than 63 per cent of ECHO's total expenditure for the year (ECHO 1994).

Food aid donations

Food aid contributed a significant proportion of humanitarian aid, and the cost of purchasing,

Figure 3: UNHCR expenditure for 1992



Source: UNHCR 1994

transporting and distributing food in the former Yugoslavia was enormous. WFP estimated that the food aid operation cost US\$1.3 million per day at the beginning of 1993 (WFP 1993). In total, some US\$710 million for over 1.14 million tons of food were provided to the former Yugoslavia between 1992 and 1997. The majority of this went to Bosnia.

The vast amounts of food aid going to the former Yugoslavia were reflected in patterns of expenditure. For example, WFP *per capita* spending (for relief and development projects) in sub-Saharan Africa was US\$1.80 compared with US\$5.43 in Europe and the Commonwealth of Independent States in 1993, largely due to increased food aid flows to the former Yugoslavia (WFP 1994b). In 1998, WFP expenditure on each returnee, displaced person and war victim in the former Yugoslavia was projected to be US\$13.55, while spending on each victim of conflict in the Rwanda/Burundi region was US\$6.14 and on each displaced person and refugee in Liberia was US\$1.78 (WFP 1998).

The differences in expenditure are, however, partly due to the different costs involved in transporting and distributing food in Europe compared with Africa. When the actual quantities of food aid distributed per person are compared, there is greater equity. For instance, during 1993 when the war in the former Yugoslavia was at its height, an estimated 343,772 metric tons of relief food aid

was distributed to 3.78 million beneficiaries. This is equivalent to about 91 kg per beneficiary. In 1994, during the Great Lakes crisis, 359,612 metric tons were distributed in Burundi, Rwanda, Tanzania, Uganda and Zaire to approximately 4 million beneficiaries. This is equivalent to about 89 kg per beneficiary.

Nevertheless, a detailed study analysing food aid flows concluded that there has been progressively greater diversion of US food aid from developing countries to eastern Europe and the former Soviet Republics since 1989 (Benson and Clay 1998). The authors estimate that globally 10–12 million tons of cereals food aid, or about 20 per cent of shipments, were diverted from developing countries to eastern Europe between 1989–90 and 1993–4.

Adequacy of the food aid response

Although enormous amounts of food aid were channelled into Bosnia, WFP food aid deliveries to Sarajevo and Central Bosnia, prior to the ceasefire in February 1994, fell short of estimated requirements. In the five months before the ceasefire, an average of 84 per cent of food aid requirements were delivered to Sarajevo and only 38 per cent were delivered to Central Bosnia. Furthermore, the ration distributed during this period was designed to meet minimum energy and protein requirements and was deficient in several essential micronutrients. The inadequate levels of vitamin A, vitamin C, niacin, riboflavin and iron were of particular concern, as outbreaks of

deficiency diseases due to a lack of these micronutrients have occurred in recent emergencies (Toole 1994).

If estimated requirements for food aid had been accurate and there was a shortfall in food aid distributions, malnutrition including micronutrient deficiencies would have occurred during this period. Although the population of the besieged areas lost weight and may have suffered from sub-clinical micronutrient depletion, there were no clinical signs of malnutrition and anthropometric status did not drop to a critical level.

It is therefore concluded that food aid requirements were overestimated in Bosnia. The dependency on food aid, though great, was not as large as estimated and the populations in besieged areas were able to survive by accessing food from alternative sources. It can, therefore, be argued that the food aid response to the crisis in Bosnia was successful partly because there was an overestimation of needs, which meant that failures in the distribution system (an almost inevitable occurrence in conflict situations) were not disastrous.

2.3 Protection from famine

The preceding discussion allows a number of conclusions to be drawn about the factors that helped to protect the populations of the besieged areas of Bosnia against famine.

First, the relatively good socio-economic conditions in pre-war Bosnia meant that the population was better able to withstand the adversities of war. The underlying structural failures (chronic food insecurity, poverty, underdeveloped infrastructure), which have played crucial roles in causing famine in developing countries were not present in pre-war

Bosnia. Furthermore, the cumulative effect of repeated crises (e.g. droughts) is much worse than a single acute crisis (as in Bosnia). Household vulnerability will increase through the progressive depletion of food stocks and capital assets as a result of repeated assaults.

Second, the initially good health and nutrition status of the Bosnian population was a protective factor against health and nutrition stresses. Healthy people, whose immune systems have not been repeatedly compromised, will be better able to combat an adverse health environment than unhealthy people. Fatter people will take longer to become malnourished than thinner people.

Third, the disease epidemiology in pre-war Bosnia showed a pattern of low rates of infectious diseases and high rates of chronic disease. Vaccination levels were also relatively good. Epidemics of infectious disease were, therefore, less likely to occur than in environments which already have high rates of infectious diseases, as in developing countries.

Fourth, the age distribution in pre-war Bosnia favoured able-bodied adults over children and the elderly. There were, therefore, proportionally fewer vulnerable children and elderly per adult than in developing countries. Thus, the ability to care for and protect the vulnerable within the community was probably better.

Fifth, the vast humanitarian response to the crisis in Bosnia helped to alleviate suffering. Although food aid was apparently inadequate to meet requirements during particularly critical periods of the war, the overestimation of needs meant that failures in the distribution system were not disastrous and besieged populations were able to resort to alternative sources of food.

Notes

1. For the sake of brevity, Bosnia and Herzegovina will be referred to as Bosnia.
2. Dependency ratio is the ratio of the population defined as 'dependent' – children under 15 and the elderly over 64 years – to the working-age population, aged 15–64 (UNDP 1993).

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