

Study team says Iraq's water treatment system near collapse

An International Study Team organized by the Harvard University School of Public Health, Oxford University, and the London School of Economics has provided new evidence on the genocide being imposed on Iraq by continuing U.N.-imposed sanctions. The team, which was composed of 87 physicians, engineers, and other researchers, visited Iraq from Aug. 23 to Sept. 5. On Oct. 22, the team released a report, titled "Health and Welfare in Iraq after the Gulf Crisis." This is Part II in a series of EIR excerpts from the report.

Electrical facility survey

The project surveyed the conditions of most major electrical facilities in Iraq. The sites were selected by team members to gain a comprehensive picture of conditions throughout the country. The study was comprised of site inspections and interviews at 24 facilities over a ten-day period.

During the Gulf crisis, enormous damage was inflicted upon the electrical generation infrastructure of Iraq. Since the cease-fire, electrical generation has been restored to about 68% of the 1990 peak load (5,162 megawatts, MW) but, to only 37% of the installed capacity (35 MW). The study estimates 75% of electrical transmission lines are operable. All repairs have been done using salvaged parts and improvised methods.

Much of this repair, especially in the switchyards and first-span connections to transmission, does not meet normal standards of construction, poses increased safety risks, and is likely to break down. Without spare parts, replacement and further repair will not be possible. The store of salvageable parts is depleted. Iraq does not have the capability to manufacture the necessary items. Many are specific to foreign companies from Europe, Japan, and North America that built or supplied all the power stations.

Finally, the study team documented the profoundly negative impact that the damaged and ill-repaired power generation system has had on, and will continue to have on, water purification and wastewater treatment and public health infrastructure generally.

Water and wastewater systems survey

Civil and chemical engineers, inspected water and wastewater treatment plants, distribution systems, and collection systems in all parts of Iraq. Twenty-eight facilities, including

18 water treatment plants, eight wastewater treatment plants, one water supply and one aluminum sulfate plant were visited in 13 cities.

Much of Iraq's water and water purification facilities function at only a fraction of pre-Gulf crisis levels or not at all. Only one of 18 water treatment plants inspected operated at 100% capacity. Water distribution and purification suffer from minimal flow and lack of chlorine, which is being rationed at all plants. The primary factors impairing water treatment and purification do not result from damage caused by the war and civil uprisings, but from a lack of spare parts and chlorine. Wastewater treatment, water delivery, and purification are also substantially limited by the lack of electrical power.

Reduced water flows and insufficient levels of chlorine in the distribution system promote the incidence of water-borne diseases. The lack of electrical power has eliminated wastewater treatment in Baghdad and southern Iraq, and raw sewage is being discharged into waterways. Sewage treatment is also dramatically reduced because of a lack of chlorine, spare parts, and reliable electrical power. The study team estimates that if current trends continue, the entire water treatment and delivery system will deteriorate to the point of collapse. Within a matter of months, those critical public services are expected to be operating at only 5-10% capacity.

Environment and agricultural survey

Environmental and chemical engineers investigated and interviewed public health officials, environmental regulators, and local residents concerning the environmental and public health consequences of the Gulf crisis.

Team members collected drinking water samples at 158 randomly selected households in all 18 governorates in Iraq. The sampling framework of the public health survey team was used to collect drinking water samples.

Most of Iraq's population of 18 million is directly exposed to water-borne disease in their potable water supply. Each sample was tested for coliform or fecal contamination. The results were 106 positive for gross coliform contamination, 25 confirmed negative, and 27 unconfirmed negative. Roughly half the areas tested, weighted according to population density, showed positive evidence of gross fecal contamination. Only in Baghdad, where coliform media sampling

was used, did over half the samples test negative. Team members documented unsanitary water source and waste disposal conditions in all cities surveyed. Common conditions observed included: 1) solid waste accumulation in the streets due to the lack of collection and landfilling equipment, 2) raw sewage overflows in the streets and around homes, 3) raw sewage being dumped directly into the rivers due to impaired or inoperable wastewater treatment plants, 4) children bathing and playing in these rivers, 5) people with little to no tap water supply because impaired or inoperable water treatment and distribution plants cannot generate adequate line pressure, 6) people drawing drinking water directly from the rivers, and 7) people drinking water from holes dug in water mains, which are often contaminated by cross-connections from adjacent sewage pipes.

The team found that direct sewage contamination of water supplies results from two primary causes: inadequate chlorination of discharges or bypassing treatment entirely; and contamination through breaks in the water mains.

Over 60% of the population in five of the seven governorates surveyed no longer have tap water available in their homes because of low water supply system pressure. The low pressure is caused by lack of spare parts to maintain pumps, power outages, and breaks in the water mains.

Income and economic survey

Two economist members of the team studied the impact of the Gulf crisis on economic activity, private incomes, public distribution, and household consumption.

More than a year of war and internal conflicts have had a disastrous impact on the economy. The destruction of the economic infrastructure and an acute shortage of imported inputs have caused a considerable decline of output and wage employment (especially in the private sector). The reduction of formal employment opportunities, and the general impoverishment of the population, have led to a large-scale expansion of "informal" self-employment (e.g., street-vending).

Overall, money earnings have remained more or less unchanged for the majority of the population since August 1990. Over the same period, consumer prices have sharply increased, due to trade restriction, exchange-rate depreciation and reductions in subsidies. The food price index has risen by 1,500 to 2,000% (see table).

Correspondingly, real earnings have fallen to less than 7% of their pre-crisis level, in terms of purchasing power over food. In terms of private incomes, the incidence of poverty is now greater in Iraq than in, say, India. The collapse of private incomes has been further aggravated by the deterioration of many basic public services.

These adverse developments have been partly compensated by the expansion of public food distribution. Iraq's public distribution system, which covers all residents (except in areas not currently administered by the government, particularly the north), is equitable and efficient. However, food

Food price increases in Iraq since sanctions began

Food Item per kg*	Price per unit (Iraqi dinars)		Increase over 1 year
	Aug. 90	Aug. 91	
Wheat flour	0.05	2.42	4,531%
Milk (powdered)	0.75	27.33	3,661%
Bread (per piece)	0.01	0.33	2,857%
Baby milk (tin of 450g)	0.45	10.00	2,222%
Sugar	0.20	4.42	2,208%
Cooking oil	0.48	10.33	2,138%
Rice	0.23	4.08	1,801%
Tea	1.70	23.67	1,392%
Tomatoes	0.27	1.25	469%
Chickpeas	0.65	2.92	449%
Potatoes	0.45	1.92	426%
Eggs (carton of 30)	3.83	12.50	350%
Onions	0.37	1.25	341%
Dates	0.52	1.75	339%
Meat (lamb)	7.00	16.33	233%
Meat (beef)	6.83	16.90	247%
All items (high case)			2,004%
All items (low case)			1,546%
Cost (at current prices) of the average 1990 basket for a family of six ("low case" assumptions)	66.00	1,010.00	1,546%

*unless otherwise indicated

distribution covers at best one-half of the nutritional needs of the population. Many households have to sell their assets to complement food rations with market purchases.

The paralysis of economic activity and basic public services, inadequately compensated by food rationing, has been one of the major causes of nutritional deprivation and enhanced mortality.

Child psychology survey

On the basis of in-depth interviews of 214 Iraqi children of primary school age, two professional child psychologists report levels of anxiety, stress, and pathological behavior unprecedented in their 15-year experience in this field. For example, nearly two-thirds of children interviewed believe that they will not survive to become adults. Nearly 80% are afraid of losing her/his family through death or separation. Eighty percent experienced shelling at close distance. The researchers conclude that "the high proportion of affected children clearly calls for a substantial national and international response to provide the necessary technical, professional, and educational means . . . to help these affected children."