Reconstructing Iraq: Costs and Possible Income Sources

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The bill for relief and reconstruction: $50 billion

Repairing the residual damage to and accumulated disrepair of key infrastructure, industry, and services that resulted from 12-years of sanctions and the 1990-1991 Gulf war would probably cost $30 - 35 billion. The recent war has probably added between $15 billion and $20 billion to the bill. In addition, it has created a humanitarian crisis; managing it may require another $3 billion over the next 18-24 months. Thus, $18-23 billion should be sufficient to return Iraq to the status quo of *2002.* Going further: a total investment of $50 billion should be sufficient to return Iraq to a semblance of its condition *circa 1989.* (This estimate assumes some overlap between the repair costs of sanctions and the two Gulf Wars.) As explored below, there are a variety of possible sources for these funds. Nonetheless, new outside assistance on the order of $16.5 billion to $20.5 billion probably will be needed over the next six years.

During the first Gulf War allied air power systematically destroyed much of Iraq's infrastructure and industry, including 92 percent of electric power generating capacity, 80 percent of oil refinery capacity, eight major dams, four of seven major water pumping stations, 31 municipal water and sewerage facilities, numerous water purification plants, and dozens of factories producing goods ranging from tires and electrical cable to medical supplies, fertilizer, textiles, aluminum, cement, and paint.[1] Most airports were

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[1] *Country Analysis Brief: Iraq* (Washington DC: Energy Information Administration, US Department of Energy, February 2003);

Needless Deaths in the Gulf War: Civilian Casualties During the Air Campaign and Violations of the Laws of War (New York: Human Rights Watch, 1991);

William Arkin, Samien Durrant, Marianne Cherni, *On Impact: Modern Warfare and the Environment -- A Case Study of the Gulf War* (Amsterdam: Greenpeace, May 1991);

A Ascherio, R Chase, et al., "Effect of the Gulf War on infant and child mortality in Iraq," *New England Journal of Medicine* (24 September 1992), Volume 327:931-936;

Barton Gellman, "Allied Air War Struck Broadly in Iraq; Officials Acknowledge Strategy Went Beyond Purely Military Targets," *Washington Post,* 23 June 1991;

Sadruddin Aga Kahn, Executive Delegate of the Secretary General, *Report to the Secretary on Humanitarian Needs in Iraq* (New York: United Nations, July 1991);

Thomas Keaney and Eliot Cohen, "What Did the Air Campaign Accomplish?," Chapter Three in *Gulf War Air Power Survey Summary Report* (Washington DC: Government Printing Office, 1993);

Thomas Keaney and Eloit Cohen, *Gulf War Air Power Survey, Volume II. Operations and Effects and Effectiveness* (Washington DC: Government Printing Office, 1993); and,

Robert Pape, "Iraq 1991," Chapter 7 in *Bombing to Win: Air Power and Coercion in War* (Ithaca NY: Cornell rendered useless. Hundreds of train locomotives and boxcars were destroyed as well as more than a hundred bridges and many miles of train track and roadway. Numerous warehouses and the goods they stored were also destroyed as were nine thousand homes. The Arab Monetary Fund estimated total material losses at $190 billion (or approximately $250 billion today), although this figure seems a bit high. A 1991 UN study estimated that restoring just the key infrastructure sectors -- power, health, food, oil, water, and sanitation -- would require $22 billion (or approximately $29 billion in 2003 USD).[2] This need actually increased during the 1990s, principally as a result of economic sanctions.

Following the 1990-1991 war Iraq drew on existing material stocks to restore some of its infrastructure, but comprehensive economic sanctions and strict limits on the import of essential industrial goods and spare parts made recovery impossible.[3] Reserve stocks quickly ran out, recovery faltered, and decline accelerated. In recent years, Iraq's per capita gross domestic product has been less than 30 percent its 1989 level.[4] This, despite increased oil sales because many of Iraq's recent import purchases have been held up in the sanctions process and because 25 percent of Iraq's oil revenue has been used to pay reparations. With maintenance and recapitalization falling far behind, Iraq's infrastructure continued to deteriorate throughout the 1990s, becoming less productive with every passing day. On the eve of the recent war it was estimated that Iraq's oil industry and electric power infrastructure alone required an input of as much as $25 billion in order function as well as it did 1989.[5] Extrapolating from this, renovation of the broader industrial and service infrastructure may have needed as much as $35 billion -- *before the recent war.*

The recent war -- and especially the final air-ground assault on Iraq's cities -- has probably added $15-20 billion to the bill (including the cost of destroyed structures but not the destruction of military hardware).[6] This estimate would put the war's costs close

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University Press, 1996).

[2] Sadruddin Aga Kahn, Executive Delegate of the Secretary General, *Report to the Secretary on Humanitarian Needs in Iraq* (New York: United Nations, July 1991).

[3] Colin Rowat, "How the Sanctions Hurt Iraq, *MERIP,* 2 August 2001; Alain Gresh, "Oil for Food: The True Story," *Le Monde Diplomatique*, 19 October 2000; and, "America's Unyielding Policy toward Iraq," *Foreign Affairs* (January-February 1995).

[4] Paul Rivlin, "Iraq's Economy: What's Left?," *Tel Aviv Notes,* Jaffee Center for Strategic Studies (2 February 2003).

[5] *Guiding Principles for U.S. Post-Conflict Policy in Iraq,* Report of an Independent Working Group, cosponsored by the Council on Foreign Relations and the James A. Baker III Institute for Public Policy, Rice University (New York: Council on Foreign Relations, 2002).

[6] In a study published in November 2002, William D. Nordhaus suggests $30 billion as the cost of the recent war. He extrapolates this from the UN estimate of basic infrastructure repair costs for the first Gulf War, essentially correcting for inflation. By contrast we assume that the cost will be lower for the 2003 war because there was less focus on infrastructure attack. Bombing was more concentrated on military and political targets. William D. Nordhaus, "The Economic Consequences of a War with Iraq" in Carl

to those of the 1999 war over Kosovo, about twice as high as the Afghan war, and far below the cost of the first Gulf War.[7]

One thing that distinguished the recent Iraq war is that the allies did not seek intentionally to destroy the economic infrastructure of the country. This accords with the objective of regime removal and subsequent occupation. By contrast, one important aim of the first Gulf War was to cripple Iraqi power -- going so far as to intentionally destroy much of the nation's water treatment, sewage, and electric power systems.[8] This plus sanctions ensured that the material wealth of Iraq was much reduced when allied bombers returned again in 2003. The cost of the recent war might have been even less had the original "shock and awe" plan worked to quickly crumble the regime and stifle organized resistance during the first week. Because it did not, a heavier

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Kaysen, et. al., *War with Iraq: Costs, Consequences, and Alternatives* (Cambridge MA: American Academy of Arts and Sciences, November 2002).

[7] Estimates of full reconstruction costs for Serbia and Kosovo after the 1999 war vary substantially, in part because they often seek to measure different things. A 1999 report by Oxford Analytica estimated costs for refurbishing basic infrastructure to be $10 billion over three to five years. An analysis by the BBC and the Jane's Defence group set complete reconstruction costs at more than $30 billion. A group of independent Yugoslav economists, G17, also estimated that $30 billion would be required -- however, they envisaged reforms that extended well beyond fixing the damage caused by war. Finally, the Economist Intelligence Unit estimated that the opportunity cost of the war imposed on Yugoslavia and Kosovo was $59.8 billion. This was meant to reflect the difference in total economic performance between two pathways: one in which the war occurred and one in which it did not. Most relevant to the cost measure we are looking for is the work of Oxford Analytica and the Jane's Group. We chose the estimate of $15 billion to $20 billion as reflecting a midpoint between the differing goals and the differing estimates of the two studies. "Kosovo war cost £30bn," *BBC Online,* 15 October 1999; "Kosovo cost cripples Yugoslavia," BBC Online, 23 Aug 1999, available at: http://news.bbc.co.uk/2/hi/business/427670.stm; and, World Bank, "Kosovo: The Cost of War and Peace," *Transition Newsletter* (May-June1999).

[8] "Allies deliberately poisoned Iraq public water supply in Gulf War, investigation," *Sunday Herald* (Scotland), 17 September 2000;

USAF Doctrine Document 2-1.2: Strategic Attack (Maxwell Air Force Base, Alabama: USAF Doctrine Command, 20 May 1998);

Defense Intelligence Agency, *Iraq Water Treatment Vulnerabilities* (Washington, January 1991);

Barton Gellman, "Allied Air War Struck Broadly in Iraq; Officials Acknowledge Strategy Went Beyond Purely Military Targets," *Washington Post,* 23 June 1991;

Thomas E. Griffith, JR. Major, USAF, *Strategic Attack of National Electrical Systems* (Maxwell Air Force Base, Alabama: Air University Press, October 1994);

Steven M. Rinaldi, Major, USAF, *Beyond the Industrial Web: Economic Synergies and Targeting Methodologies* (Maxwell Air Force Base, Alabama: Air University Press, April 1995);

Kenneth R. Rizer, Bombing Dual-Use Targets: Legal, Ethical, and Doctrinal Perspectives," *Air & Space Power Chronicles* (1 May 2001); and,

Scott E. Wuesthoff, Major, USAF, *The Utility of Targeting the Petroleum-Based Sector of a Nation's Economic Infrastructure,* (Maxwell Air Force Base, Alabama: Air University Press, June 1994).

resort to aerial bombardment and indirect ground-based firepower was needed. Also, the concentration of bombing, artillery fire, and ground combat in and around cities and villages -- rather than open desert -- imposed higher material costs.

In addition to the reconstruction costs of the recent war -- that is, $15-20 billion -- at least another $2 billion will be needed in 2003 to meet humanitarian needs. As vital services, infrastructure, and shelter are restored, emergency costs will decline. Nevertheless, 2004 might require $1 billion in additional emergency funds.[9]

Although $18-23 billion should be enough to return Iraq to its 2002 condition, it is vital from a strategic perspective that the material circumstances of Iraqi citizens surpass this level as quickly as possible. This might be done by devoting $25 billion to relief and reconstruction during 2003-2006. An additional $25 billion devoted to reconstruction during the period 2006-2009 might complete the rehabilitation of Iraq.

Where will the money come from?

There are several possible sources for the required funds: frozen Iraqi assets, resources already in the UN Oil-for-Food program pipeline, future Iraqi oil income (which might be expanded), and outside relief and reconstruction assistance.[10] Subtracting from some of these sources are Iraq's outstanding debts, contracts, and reparation obligations. Together these amount to over $400 billion.

Frozen Iraqi assets may provide $1 billion for reconstruction. Regarding the resources controlled by the Oil-for-Food program: There is currently about $10.1 billion of food and supplies in the program's accounts and delivery pipeline.[11] Food stuffs account for about $2.4 billion of this total. But this food is meant to meet routine requirements over 10 months, not emergency needs. Thus, it does not reduce the new humanitarian requirement. However, some of the other $7.7 billion in the pipeline would count against Iraq's reconstruction needs. These funds cover many industrial and medical goods whose delivery has been delayed by the sanctions process. The UN office also has about $2.8 billion in unencumbered funds that might partially apply against reconstruction and rehabilitation needs. Considering the Oil-for-Food program as a whole, a feasible estimate of the value of resources that might count against repair and reconstruction needs is $4 billion. Thus, existing assets and resources barely cut into reconstruction needs.

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[9] UN launches massive $2.2 billion appeal for humanitarian relief in Iraq, *UN News Center,* 28 March 2003.

[10] John Hendren and James Gerstenzang, "US may use Iraq's oil income and frozen assets to rebuild the nation and set up democracy," *Los Angeles Times,* 12 March 2003.

[11] Transcript of press conference by Deputy Secretary-General Louise Frechette, United Nations Headquarters, 28 March 2003; and, "Funds and food are available for Iraq, UN says," *Deutsche Presse-Agentur*, 20 March 2003.

Oil, debt, and reparations

It is tempting to look to Iraq's future oil income to substantially defray the remaining reconstruction costs -- but this source cannot close the gap, for several reasons: first, most of the current income is already accounted for; second, achieving any significant increase in production levels would take considerable time and new capital; and third, creditor nations have substantial, legally enforceable claims against Iraqi income.[12]

The debt claims on Iraqi income amount to approximately $142 billion. Most of this is owed to Persian Gulf countries, although Russia is due $8 billion as well. In addition, Iraq has signed about $57 billion in contracts with other nations, notably Russia and France, and it still owes hundreds of billions of dollars in reparations to Kuwait. The forthcoming US military government in Iraq might be tempted to deal with these obligations by fiat, dumping them all. But this would precipitate a fundamental, institutional crisis in the world financial system. Thus, some arrangement must be made to deal with these obligations in accord with the laws and practices that govern international financial relations.

Reparations are already handled as part of the existing UN Oil-for Food program. They absorb about 25 percent of official oil income. As a contribution to reconstruction, future reparations might be capped at $60 billion and paid over the next 10 years. Iraq's outstanding foreign contracts might be scaled back and traded away for a portion of the post-war reconstruction work. Regarding its debt load: one plan suggests a 66 percent write-off -- as was the case with Yugoslavia -- and a 15-year repayment schedule to retire the rest.[13] Annual payments would be $1.6 billion during the first five years and $4.8 billion, thereafter. (This write-off would essentially make Iraq's creditors the biggest contributors to the entire Iraqi Freedom enterprise).

Iraqi Oil Revenue, Old and New

In the recent past, official Iraqi oil revenue has ranged around $10 billion to $12 billion per annum. Black market production and sales might add another $2 billion. Of course, these estimates date to 2002; the recent war has undercut some of this capability. It may take an investment of $1 billion and six months time to re-achieve 2002 levels. Restoring Iraqi oil production to its 1980 peak of 3.5 million barrels per day from its current level of about 2.1 million will require a $7 billion investment and perhaps three years. Boosting it further to 5.5 million barrels, as some have suggested, might take a decade and cost $20 billion.[14] (The $7 billion investment is included in the $50 billion reconstruction estimate; the $20 billion is not.)

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[12] David Chance and Mona Megallli, "Who will pay for reconstruction?", *Reuters,* 7 April 2003; Shelley Emling, "Diplomatic Strains Complicate Rebuilding of Iraq," *Cox News Service,* 5 April 2003; and, Alan Beattie, "Saddam's ravaged economy: oil revenues wasted, crushing debts, and a decayed financial system," *Financial Times,* 28 March 2003.

[13] Beattie, *Financial Times,* 28 March 2003.

[14] Daniel Yergin, A crude view of the Crisis in Iraq, *Washington Post,* 8 December 2002.

Under the rules of the Oil-for-Food program 72 percent of oil revenue has supported the purchase of food and other necessities. Another 25 percent was devoted to paying reparations and 3 percent was used to cover UN administrative costs and arms inspections. Of the 72 percent consumed by Iraq, a portion has been devoted to recapitalization of the oil industry and some other basic services. But no more than 15 percent of current total oil revenue should be counted toward reconstruction costs -- unless the post-war administration is willing to cut living standards.

> Given oil revenues of $14 billion, we might assume an already existing contribution to recapitalization amounting to $2 billion annually from this source -- beginning as soon as 2002 levels of production are restored. Much of this covers routine recapitalization, but some of it could count against reconstruction costs.
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> Near-term debt and reparations payment might be made to fit into the 25 percent of revenue already devoted to reparations. Under the phased payment plan outlined above, repayment would rise as oil income does, consuming much of any new production income during the next six years. Still, new production might contribute $10 billion to $15 billion total to reconstruction efforts over the next six years -- with this income beginning to flow three years from now.
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> In effect, 55 to 60 percent of official Iraqi oil income has been devoted to “income support” (in the form of food) for individuals. In a post-war order, most of this portion of national income might be used to pay salaries in the government, military, health, education, and human service sectors. And it’s reasonable to assume that some portion of the labor this buys will be devoted to reconstruction tasks. A billion dollars so diverted would represent about 12 percent of the food program’s outlays.

Thus, a reasonable estimate is that oil income at 2002 production levels could provide $3 billion annually toward reconstruction, beginning six months from now. Over the next three years this might contribute $7.5 billion total to reconstruction. For 2006-2009, the contribution of oil income at 2002 levels would be another $9 billion. *New* oil production might provide an additional sum to reconstruction during the second period (2006-2009) -- say, between $8 billion and $12 billion total, assuming a production level of 3.5 million barrels a day. Much of the rest of new oil income would go to accelerated debt and reparation payments. Some would go to a modest improvement in living standards.

Where does this leave us? The Need for Outside Assistance

Against an estimated near-term (2003-2006) reconstruction requirement of $25 billion, the sources identified above might provide $12.5 billion: frozen Iraqi assets ($1 billion), relevant resources in the Oil-for-Food pipeline and account ($4 billion), and future oil income ($7.5 billion). Outstanding would be a near-term requirement of $12.5 billion.

Against a 2006-2009 reconstruction requirement of another $25 billion, the sources identified above (in this case, future Iraqi oil income) might make available between $17 billion and $21 billion total. Outstanding would be a requirement of between $4 billion and $8 billion for this period. Thus, the total outstanding requirement for 2003-2009 amounts to between $16.5 billion and 20.5 billion. This would have to be met by outside funds.

So far, the United States has pledged $2.5 billion to Iraqi relief and reconstruction, leaving another $14-18 billion to be raised. Most urgent is the outstanding near-term requirement for $10.5 billion. Apart from the US pledge, the United Nations has launched an appeal for $2.2 billion, which still falls short of near-term needs.

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