



CONGRESSIONAL BUDGET OFFICE
U.S. Congress
Washington, DC 20515

December 8, 2006

Honorable Kent Conrad
Ranking Member
Committee on the Budget
United States Senate
Washington, DC 20510

Dear Senator:

In response to your request, the Congressional Budget Office (CBO) has updated the analysis in its January 2004 paper *Paying for Iraq's Reconstruction*. Since 2003, the U.S. government has provided almost \$38 billion to support reconstruction efforts in Iraq. Other nations have pledged about \$15 billion in assistance. This update examines the key resource issues related to Iraq's recovery, including the country's overall fiscal position, potential oil revenues, and international obligations, as well as the status of U.S. efforts to help rebuild Iraq. In keeping with CBO's mandate to provide objective, impartial analysis, this update makes no recommendations.

The attachment to this letter describes the analysis by CBO's National Security Division. If you would like further details, we would be pleased to provide them. The analysis was prepared by Eric J. Labs, who can be reached at (202) 226-2920.

A handwritten signature in blue ink that reads "Donald B. Marron".

Donald B. Marron
Acting Director

cc: Honorable Judd Gregg
Chairman

Attachment

Paying for Iraq's Reconstruction: An Update

December 8, 2006

Note

Numbers in the text and tables may not add up to totals because of rounding.

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Summary and Introduction

This report updates the information in the Congressional Budget Office's (CBO's) January 2004 paper *Paying for Iraq's Reconstruction*. As in the original paper, this update focuses on Iraq's budget situation—including its possible future oil revenues—and on the country's need to repay existing debt, the amount of foreign aid pledged or provided for reconstruction, and the status of ongoing reconstruction projects. The update relies on published information from the International Monetary Fund (IMF), the World Bank, and the Special Inspector General for Iraq Reconstruction, as well as various reports and data from the U.S. Departments of Defense, Energy, the Treasury, and State, including the U.S. Agency for International Development.

Events over the past three years suggest the following observations about the state of reconstruction in Iraq:

- Spending on security forces and security-related measures has been far greater than U.S. and Iraqi officials anticipated at the end of 2003.
- Iraq's future fiscal situation—in particular, its ability to pay for reconstruction and other infrastructure investments—remains heavily dependent on oil prices and oil exports.
- Because of higher oil prices, Iraq's oil revenues between 2004 and 2006 have been about 50 percent higher than CBO's January 2004 report anticipated. However, the country's oil production and exports have not met the targets set by Iraqi officials.
- Iraq has negotiated substantial reductions in about half of its foreign debt. Negotiations on the other half of its debt—owed principally to Persian Gulf nations—are just beginning.
- Most of the \$38 billion in aid that the United States has provided to Iraq since 2003 has been allocated to projects, but less than one-third of the \$15 billion in aid pledged by other countries has been expended so far.

In 2003, shortly after the overthrow of Saddam Hussein's government, published reports put the cost of Iraq's reconstruction needs somewhere between \$16 billion and \$55 billion.¹ The most comprehensive report was a joint assessment by the United Nations and the World Bank, which estimated that more than \$55 billion in investment was needed to rebuild Iraq and transform it into a country with a market-oriented economy and a representative government based on the rule of law.² The Bechtel Corporation, under contract with the Agency for International Development,

1. For a detailed discussion of those reports, see Congressional Budget Office, *Paying for Iraq's Reconstruction* (January 2004), pp. 3-5, 17-23.

2. See *United Nations/World Bank Joint Iraq Needs Assessment* (October 2003).

estimated that about \$16 billion was needed for reconstruction—excluding the oil and security sectors.³ The Coalition Provisional Authority (CPA), which the United States created to administer Iraq after the fall of the Hussein government, identified spending needs of about \$20 billion for various reconstruction efforts.⁴ Before the publication of two of those reports, CPA Administrator Paul Bremer said in an interview that reconstruction could cost between \$50 billion and \$100 billion.⁵

Ambassador Bremer was not specific about what costs were included in his estimate, but the published reports identified reconstruction needs stemming from neglect of Iraq's infrastructure after the country invaded Iran in 1980 as well as from the effects of the U.S.-led invasion, looting in the aftermath of the initial conflict, and the early insurgency. As noted in CBO's previous paper, the reconstruction needs and costs included in those three reports were not comprehensive, nor were they intended to raise Iraq's infrastructure to Western standards. To CBO's knowledge, no new or revised assessments of Iraq's reconstruction needs have been published by U.S. or international agencies since 2003. (CBO does not have the capability to produce an independent estimate of exactly how Iraq's reconstruction needs have changed in the past three years.)

Since the publication of those reports, various countries and organizations have allocated a total of about \$50 billion for Iraq's reconstruction, with most of that amount coming from the United States. The distribution of U.S. assistance, however, differs considerably from the priorities originally identified by the CPA. The effects of the insurgency and other difficulties in completing aid projects have led U.S. authorities to scale back in some areas, such as water and electricity, and spend more in other areas, notably security.⁶ Thus, many of the projects first identified by the CPA and the World Bank remain unfunded. Only limited progress has been made in meeting previously identified reconstruction needs as defined in the United Nations/World Bank assessment.⁷

Like most developing countries, Iraq faces a long list of necessary or desirable investments in infrastructure and societal institutions but limited sources of funding. No substantial new U.S. or other foreign funding has been committed to Iraq, so future reconstruction may be paid for largely from domestic resources.

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3. Bechtel National, Inc., *Iraq Infrastructure Programs: Assessment Report* (June 2003).
 4. Coalition Provisional Authority, *Request to Rehabilitate and Reconstruct Iraq: Summary of the Request* (September 22, 2003).
 5. Ambassador Bremer made that comment in an interview on CNBC's *Capital Report* in the summer of 2003. See "Postwar Iraq Likely to Cost More Than War," *USAToday.com*, August 11, 2003.
 6. For the current allocation of U.S. assistance, see Department of State, *Quarterly Report to Congress: 2207 Report on Iraq Relief and Reconstruction* (July 2006).
 7. Special Inspector General for Iraq Reconstruction, *Quarterly Report to the United States Congress* (October 30, 2006), pp. 17-24, available at www.sigir.mil/reports/quarterlyreports/Oct06/Default.aspx.

As requested by the Ranking Member of the Senate Budget Committee, this update examines the amount of funding that the Iraqi government could contribute to the reconstruction effort over the next four years. It compares information about the Iraqi government's potential spending with the revenues that would be available under alternative scenarios. As in the previous paper, CBO's current analysis shows that oil—both exports and prices—is likely to play a critical role in the country's ability to continue to fund reconstruction and other infrastructure investments. This report also discusses the status of Iraq's international debt, which CBO identified as a key issue in its earlier paper. In addition, this report provides an update of the amount of international aid that has been pledged or given to Iraq and how much of that assistance has been spent.

CBO did not attempt to evaluate the effectiveness of U.S. aid to Iraq other than to report general trends and conditions in some major sectors. Detailed assessments of U.S. aid programs have been published by other organizations, such as the Special Inspector General for Iraq Reconstruction and the Government Accountability Office. (For an overview of the work of the Special Inspector General, see Box 1.)

In its 2004 paper, CBO noted that the need to provide security and the potential role of private capital for investment were two significant areas of uncertainty that CBO could not assess quantitatively in its analysis. That remains true for this report as well, although both issues are discussed in general terms below.

How Much Funding Could Iraq Devote to Reconstruction?

To assess Iraq's ability to contribute to its own reconstruction, CBO relied on data in an IMF report that projects the Iraqi government's possible annual budgets from 2006 through 2010 (see Table 1).⁸ Those data represent the IMF's best estimates of future revenues and expenditures based on information from the Iraqi government and analysis by IMF staff. The data involve many uncertainties and change substantially from year to year as the IMF updates its country report on Iraq. Even so, they represent the best information available to CBO. Overall, the amount that the Iraqi government can contribute to reconstruction will depend largely on how much revenue it receives from oil exports and how much debt and other foreign obligations it must pay.⁹

Iraq's Budget Plans

In general, the IMF projects that the Iraqi government will spend about three-fifths of its resources on the day-to-day expenses of operating the government (such as paying

8. International Monetary Fund, *Iraq: First and Second Reviews Under the Stand-By Arrangement, Financing Assurances Review, and Request for Waiver of Nonobservance and Applicability of Performance Criteria*, Country Report 06/301 (August 2006), available at www.imf.org/external/pubs/cat/longres.cfm?sk=19539.0.

9. In addition to repaying its foreign debt, the Iraqi government is required by U.N. Security Council resolution 1483 to devote 5 percent of its gross oil-export revenues to paying reparations claims that resulted from Iraq's 1990 invasion of Kuwait.

Box 1.

Reports of the Special Inspector General for Iraq Reconstruction

The Congress and the President created the office of the Special Inspector General for Iraq Reconstruction (SIGIR) in 2004 to oversee the use of U.S. resources appropriated for the reconstruction of Iraq. The office provides oversight through independent audits of projects, contracts, and procedures; field assessments of many individual projects; and criminal investigations into potential waste, fraud, and abuse. Thus far, SIGIR has produced more than 150 reports, audits, or investigations of reconstruction-related activities.

The agency's capstone document is its quarterly report to the Congress, which summarizes reconstruction efforts and describes the status of funding and activity throughout major sectors of the Iraqi state. For this update, the Congressional Budget Office (CBO) relied heavily on SIGIR's quarterly reports. Those documents contain a large amount of data about what the United States and (to a lesser degree) other countries are spending on reconstruction and the results of that spending. In particular, SIGIR's quarterly reports provide an overview of the impact of the insurgency and corruption on reconstruction efforts that is not as evident from the office's more detailed reports or audits.

In addition to the quarterly reports, CBO reviewed 53 of SIGIR's on-site project assessments. Those reports examine individual—often quite small—projects and the specific task orders associated with them to determine whether:

- The project has been adequately designed,
- Construction has met specific standards (which can vary from project to project),
- Planning has taken into account the sustainability of the project,
- Results are consistent with the project's objectives; and
- Quality-control procedures (where appropriate) are in place.

Box 1.**Continued**

The total value of the projects evaluated in those assessments was less than \$1 billion. About half of those projects (both numerically and in dollar value) were rated as having “no negative findings.” Many others had minor problems that were easily correctable or that were corrected after SIGIR shared the results of its assessment with the project’s managers. About 20 percent of the projects that SIGIR assessed either were found to have major problems that would be difficult or expensive to correct or were deemed completely unsuccessful.

Although those individual project assessments cover a wide range of reconstruction activities, CBO did not make extensive use of them in its update because they do not provide a comprehensive review of the effectiveness of U.S. assistance to Iraq. Therefore, they do not offer additional insight into the larger issue of whether Iraq has the financial resources to pay for its operating expenses and future investments once foreign assistance has come to an end.

Besides its project assessments, SIGIR has published 76 audit reports (as of October 31, 2006). Those audit reports address myriad issues: reviews of contracting rules and management procedures, compliance with U.S. laws and regulations, accounting oversight for particular sources of funding or items purchased with U.S. aid, and evaluations of individual projects. Some of the audits, which have been widely covered in the press, have reached negative conclusions, but others have reported more positive results.

In general, CBO did not make extensive use of SIGIR’s audit reports because many are not germane to the purpose of this update. Some of those reports are relevant, however. In particular, a recent audit report, *Review of Administrative Task Orders for Iraq Reconstruction Contracts*, found that relatively high overhead costs—as much as 55 percent of the contract value—were being billed to reconstruction contracts by private contractors. The greater the amount spent on overhead, the less is available for actual reconstruction. The total dollar value of the contracts audited in that report was \$1.3 billion.

Table 1.

The Iraqi Government's Budget, as Projected by the International Monetary Fund, 2006 to 2010

(Billions of dollars)

	2006	2007	2008	2009	2010	Total, 2007-2010
Revenues						
Oil exports	29	37	43	50	55	184
Other ^a	<u>3</u>	<u>5</u>	<u>7</u>	<u>9</u>	<u>11</u>	<u>32</u>
Total	32	42	50	58	66	216
Expenditures						
Operating expenses ^b	29	28	31	34	40	134
Interest payments on external debt	0	0	0	1	2	3
War reparations ^c	1	2	2	2	3	9
Investment ^d	<u>12</u>	<u>15</u>	<u>17</u>	<u>19</u>	<u>21</u>	<u>71</u>
Total	42	45	51	56	65	217
Deficit (-) or Surplus	-10	-3	-1	2	1	-1
Memorandum:						
Foreign Aid ^e						
Grants	8	1	0	0	0	2
Project financing	0	1	1	1	2	5

Source: Congressional Budget Office based on data from International Monetary Fund, *Iraq: First and Second Reviews Under the Stand-By Arrangement, Financing Assurances Review, and Request for Waiver of Nonobservance and Applicability of Performance Criteria*, Country Report 06/301 (August 2006), available at www.imf.org/external/pubs/cat/longres.cfm?sk=19539.0.

Note: The projections for 2006 and 2007 are substantially greater than the amounts estimated for those years in the 2004 Iraqi budget projection. According to the IMF, higher oil revenues than had been estimated in 2004 have enabled higher levels of spending.

- a. Other revenues come mainly from reducing the price subsidy for oil-related state-owned enterprises as well as from customs and income taxes.
 - b. CBO's term for the following spending categories in the IMF report: salaries and pensions, goods and services, transfers, and domestic interest payments.
 - c. Claims stemming from Iraq's 1990 invasion of Kuwait.
 - d. The IMF's term for expenditures to improve Iraq's physical infrastructure (analogous to "reconstruction" in this CBO report).
 - e. Grants represent money given to Iraq without the expectation of repayment. Project financing represents foreign loans to Iraq that pay for particular reconstruction efforts and are not part of the Iraqi government's expenditures.
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salaries, procuring goods and services, and making transfer payments to Iraqi citizens); another 5 percent on international debt and other foreign obligations; and the rest—about one-third—on reconstruction (“investment” in the IMF report).

The Iraqi government’s budget for 2006 envisions spending about \$42 billion, including \$12 billion for reconstruction, and collecting revenues of about \$32 billion. The difference would be made up mainly through foreign aid grants. In succeeding years, revenues (85 percent of which come from oil exports) are projected to rise steadily, totaling \$216 billion over the 2007-2010 period. The government is projected to spend about the same amount over that period, including \$71 billion for investment.¹⁰ Foreign aid in the form of grants is assumed to largely end after 2006, when most of it will have been spent or allocated. Foreign aid in the form of direct project financing is assumed to continue, but at a level that is only about 7 percent of the Iraqi government’s projected spending on reconstruction and investment.

Iraq’s actual spending and revenues are unlikely to match the IMF’s projections for several reasons. First, according to the most recent quarterly report of the Special Inspector General for Iraq Reconstruction, the Iraqi government is doing a poor job of executing its large capital-investment budget. The various government ministries that receive funding for capital projects “generally can pay salaries and execute administrative budgets, but many—in particular, the Ministry of Oil—have difficulty” in spending the money on infrastructure improvements. According to the Special Inspector General, the problem stems from “bureaucratic resistance within the Ministry of Finance,” which is slow to provide the necessary funds.¹¹

Second, IMF officials describe their projection of Iraqi budgets as a dynamic analysis that depends at least as much on the revenue that is assumed to be available as on actual needs. For example, the Iraqi government’s 2004 budget plans envisioned spending nearly \$20 billion on operating expenses, debt and reparations payments, and capital investment in 2006, whereas the IMF projects more than twice as much spending in 2006, paid for by higher-than-expected oil revenues and foreign assistance. Should revenues not match the IMF’s projections, spending adjustments could and probably would be made. However, CBO has no specific information about whether those adjustments would come from Iraq’s operating budget or its investment accounts. (Most countries typically find it easier to reduce their investment spending than their operating expenditures.)

Third, although Iraq could conceivably borrow money on the commercial market to cover future fiscal shortfalls, its success in doing so would depend on whether it could find lenders and on whether it was willing to pay the potentially high interest rates required for such lending. (Iraq will not need to borrow money this year, assuming

10. Unlike in its January 2004 report, CBO does not currently have detailed information about how that investment funding would be spent by sector.

11. Special Inspector General for Iraq Reconstruction, *Quarterly Report to the United States Congress* (October 30, 2006), p. 5.

that it executes its budget along the lines projected by the IMF, because the 2006 shortfall will be covered by a small surplus generated in 2005.) In addition, the government could receive further reductions in its foreign debt (as discussed below), but it would have to maintain sustainable fiscal and debt policies as judged by the IMF.

The Role of the Oil Sector

Iraq has some of the largest proven oil reserves in the world: a total of 115 billion barrels (compared with 262 billion in Saudi Arabia and 133 billion in Iran). The major way for Iraq to finance capital investments throughout the economy is to increase its oil exports and thus its oil revenues.

Today, the country exports about 1.6 million barrels of oil per day (mbpd), for which it receives an average price of about \$50 per barrel.¹² Total production usually exceeds exports by about 500,000 to 700,000 barrels per day, with the difference going for domestic use, including sustaining production at oil fields. The Iraqi government hopes to increase production to 2.5 mbpd as soon as possible, which would translate to exports of around 1.8 mbpd to 2.0 mbpd. By comparison, just three years ago, the government's goal was to *export* 2.5 mbpd by 2006 (see Figure 1).

Various factors account for Iraq's inability to meet its previous export target, the most important of which is the insurgency. For example, according to the U.S. Energy Information Administration, the Kirkuk oil fields in northern Iraq could contribute between 550,000 and 700,000 barrels per day to oil exports but "have been largely inoperable due to war damage and frequent sabotage." In all, between 2003 and June 2006, various parts of Iraq's energy infrastructure were attacked some 315 times.¹³

The IMF's Assumptions About Oil Exports. The IMF's budget projections assume that Iraq will be able to increase its oil exports to 1.8 mbpd by 2007 and to 2.7 mbpd by 2010.¹⁴ The average price that the Iraqi government is assumed to receive for those exports is \$55 per barrel.¹⁵ Those projections would result in total oil exports of 3.3 billion barrels between 2007 and 2010 and oil revenues of \$184 billion over that period.

12. Those numbers are monthly averages for October 2006. See Department of State, *Iraq Weekly Status Report* (November 29, 2006).

13. Department of Energy, Energy Information Administration, *Country Analysis Brief: Iraq* (June 2006). Another 56 attacks on Iraq's energy infrastructure have occurred since that report was published. See Institute for the Analysis of Global Security, "Iraq Pipeline Watch" (November 2, 2006), available at www.iags.org/iraqpipelinewatch.htm. See also Special Inspector General for Iraq Reconstruction, *Quarterly and Semiannual Report to the United States Congress* (July 30, 2006), p. 29, available at www.sigir.mil/reports/QuarterlyReports/Jul06/Default.aspx.

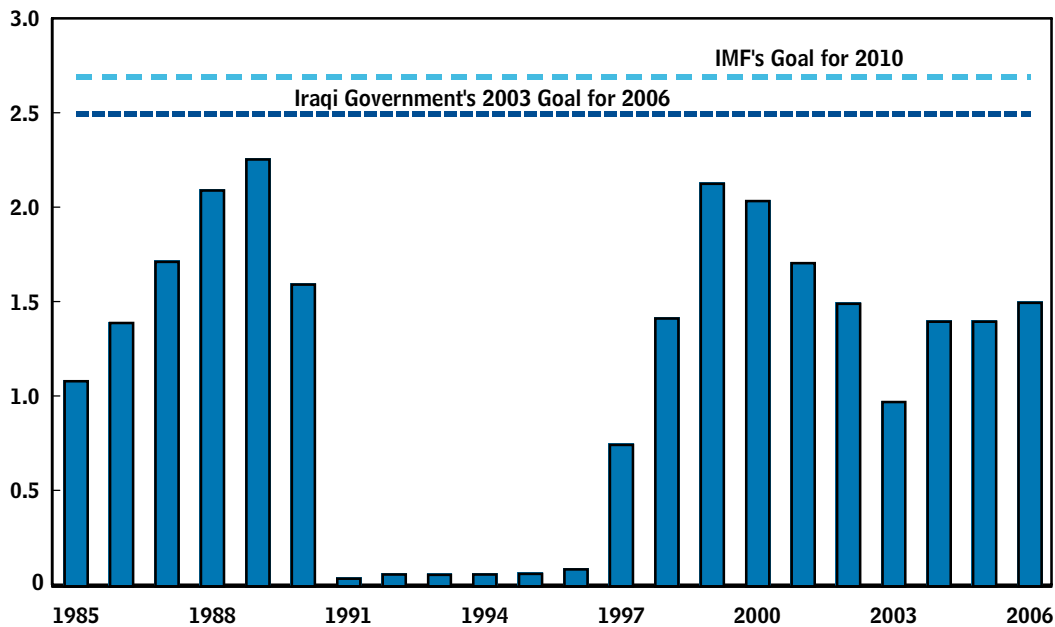
14. The Energy Information Administration estimates that Iraq's total oil exports would probably not exceed 2.3 million to 2.5 million barrels per day by 2010 even if attacks on oil infrastructure abated and the oil fields were properly managed. See Energy Information Administration, *Country Analysis Brief: Iraq*.

15. The IMF's figure of \$55 per barrel for Iraqi oil is similar to CBO's forecast of future oil prices, which (adjusted specifically for Iraq) would be about \$50 per barrel over the same period.

Figure 1.

Iraq's Oil Exports, 1985 to 2006

(Millions of barrels per day)



Source: Congressional Budget Office based on data from the Organization of Petroleum Exporting Countries, the International Monetary Fund (IMF), and the U.S. Departments of Energy and State.

Meeting the IMF's export goal of 2.7 million barrels per day could prove challenging. That figure assumes that the security situation in Iraq improves dramatically, that all pipelines for export are open and running at full capacity, and that additional production capacity is brought online. However, insurgents continue to target oil production facilities. The pipeline that runs from Iraq through Turkey is still not operating—despite nearly three years of work to keep it open—because of efforts by insurgents to damage it.

According to the IMF report, Iraq is investing in increasing its production, and thus its exports, of oil. Of the total amount allocated to capital investment between 2007 and 2010, almost one-quarter, or \$17 billion, is designated for the oil sector.

Although production and exports have fallen short of earlier goals, oil revenues have exceeded their target because of large increases in oil prices in recent years. The 2004 Iraqi budget projected that revenues from oil exports would total \$19 billion in 2006, but if current price and export trends continue, oil revenues will total around \$29 billion this year. At the same time, costs for providing security and running the Iraqi government have also proved much greater than previously anticipated. For example, the IMF's current projections of the government's operating expenses in 2006 and 2007 are more than double the projections for those years in CBO's January 2004 report. Thus, increases in revenue are being offset by increases in expenses not anticipated in 2004.

The Effects of Alternative Assumptions. To illustrate the sensitivity of available reconstruction funding to developments in Iraq's oil sector, CBO looked at four alternative scenarios for oil exports and prices (see Table 2). The first scenario assumes that the price of oil averages \$55 per barrel—as in the IMF's budget projections—but that exports do not grow from this year's projected average of about 1.5 million barrels per day. The second and third scenarios also assume that oil exports remain at the average level for 2006 but that the average price Iraq receives for that oil is either higher (\$75 per barrel) or lower (\$35 per barrel) than the IMF projects.¹⁶ In the fourth scenario, oil exports and prices continue at the monthly average levels seen in October 2006. In all of those cases, Iraq would export a total of about 2.2 billion to 2.3 billion barrels of oil between 2007 and 2010, rather than the 3.3 billion assumed by the IMF.

The scenarios' assumptions are less optimistic than those in the IMF report in terms of their effects on Iraq's budget; thus, they envision less funding for reconstruction. Under the IMF's assumptions, the Iraqi government would have about \$71 billion to invest in reconstruction efforts—including expanding production in the oil sector—over the 2007-2010 period, in addition to any money still available from foreign assistance. If the security situation prevented Iraq from expanding its oil exports, the government could have about \$49 billion for investment if oil prices rose substantially, or only \$9 billion available for investment if oil prices remained as projected. In the worst-case scenario that CBO examined—stagnant exports and lower oil prices—Iraq would have no funds available for investment over the next four years and would be \$33 billion short of the amount needed to meet its projected operating expenses and international obligations. If both oil prices and export levels remained at their October 2006 average levels through 2010, the Iraqi government would have enough to pay its projected operating expenses but only \$5 billion left over for reconstruction projects.

Three important caveats apply to those scenarios. In CBO's analysis, higher or lower oil prices affect the amount of money available to the Iraqi government by altering export revenues. But changes in oil prices could affect the government's spending in other ways, such as increasing or decreasing the cost of fuel for government vehicles. These scenarios do not capture such effects.

Second, in constructing the scenarios, CBO assumed that if the Iraqi government had less revenue, it would reduce investment or reconstruction spending before it cut operating expenditures. The IMF projection allocates about two-thirds of Iraq's revenues to operating expenditures, debt repayment, and war reparations and about one-third to reconstruction. In previous IMF projections containing less revenue, the proportion directed to capital investment was lower than in the IMF's current projection. Budget cuts could be made differently than CBO assumed in creating the scenarios.

16. The "high" price of \$75 per barrel and the "low" price of \$35 per barrel represent roughly the highest and lowest points of the range of oil prices in the past year and in forecasts conducted by both government and private entities (as provided to CBO by the Energy Information Administration). Those numbers are intended to show the effect of substantially higher or lower oil prices on Iraq's fiscal situation, not to be a prediction of future prices.

Table 2.

Effect of Oil Exports and Prices on Iraq's Total Budget for Reconstruction over the 2007-2010 Period

(Billions of dollars)

Scenario	Total Oil Exports (Billions of barrels)	Average Price per Barrel (Dollars)	Total Oil Revenues	Other Revenues	Operating Expenses and Debt Payments ^a	Funds Available for Capital Investment (Excluding foreign aid)
Under the IMF's Projection of the Iraqi Budget						
Targets and Assumptions in the Budget Projection	3.3 ^b	55	184	32	146	71
Under Alternative Scenarios for Oil Exports and Prices						
Oil Exports Remain at Projected 2006 Level, Oil Price Equals Target	2.2 ^c	55	119	32	143	9
Oil Exports Remain at Projected 2006 Level, Oil Price Exceeds Target	2.2 ^c	75	161	32	145	49
Oil Exports Remain at Projected 2006 Level, Oil Price Falls Below Target	2.2 ^c	35	75	32	140	-33
Oil Exports and Prices Stay at Current Levels	2.3 ^d	50	115	32	142	5

Source: Congressional Budget Office based on figures for Iraq's budget and oil production targets from the International Monetary Fund.

- a. Includes war reparation payments.
- b. Assumes that oil exports reach 2.7 million barrels per day by 2010.
- c. Assumes that oil exports remain at the 2006 average of 1.5 million barrels per day.
- d. Assumes that oil exports continue at the monthly average for October 2006 of about 1.6 million barrels per day.

Third, the scenarios do not include an explicit link between oil exports and investment in the oil sector. As noted above, the IMF projects that Iraq will invest around \$17 billion in the oil sector over the next four years and raise its exports to 2.7 million barrels per day by 2010. Under all four scenarios, Iraq's exports are limited to 1.5 mbpd to 1.6 mbpd. Three of the scenarios result in little or no money available for reconstruction—indeed, in one, the government would have to reduce its noninvestment spending substantially. If, however, some minimum level of investment in the oil industry was required to maintain an export level of 1.5 mbpd to 1.6 mbpd, then some or all of the amount available for investment in two of those scenarios would have to be reserved for the oil industry, and in the worst case, greater cuts in Iraq's

operating expenditures would be necessary to pay for investment in oil production. If needed investments in the oil sector were not made, production would fall and export revenues could be even lower than CBO assumed in the scenarios.

Iraq's International Obligations

In its January 2004 report, CBO indicated that Iraq's external debt, including war reparations stemming from the 1990 invasion of Kuwait, could play a significant role in the country's ability to pay for reconstruction. Since then, however, negotiations between the Iraqi government and its creditors to delay, substantially reduce, or eliminate Iraq's external obligations appear to have made enough progress that paying those obligations will consume few of Iraq's budgetary resources through 2010.

After the overthrow of Saddam Hussein's government in March 2003, both U.S. and Iraqi officials recognized that a key issue in Iraq's ability to pay for reconstruction was the international obligations inherited from the previous regime. At the time CBO published its previous report, considerable uncertainty existed about the amount of Iraq's external obligations. Today, much (though not all) of that uncertainty has been resolved.

According to information from the IMF and the U.S. Treasury, at the time of the U.S.-led invasion, Iraq owed about \$120 billion to dozens of countries and private entities:

- \$36 billion to member nations of the Paris Club,¹⁷
- About \$62 billion to countries that are not members of the Paris Club (mostly Persian Gulf states),¹⁸ and
- \$21 billion to private entities.

Since the invasion, Iraq has also incurred a small amount of debt to multilateral institutions, such as the IMF and World Bank, that is not subject to debt-reduction negotiations.

Iraq's negotiations with Paris Club members yielded an agreement to reduce the debt owed to them by about 80 percent, implemented in three stages.¹⁹ The first stage was an immediate reduction of 30 percent, effective with the signing of the Paris Club agreement in November 2004. The second stage was another 30 percent reduction of the original total once Iraq had agreed to a program of fiscal and macroeconomic

17. The Paris Club is an informal group of governments—mainly of Western industrialized countries—to whom most of the debt of developing countries is owed.

18. The precise number is uncertain because Iraq and many of the non-Paris-Club creditors do not agree on the exact amount that is owed.

19. The Iraqi government had to negotiate with each Paris Club member individually. Some countries, such as the United States, offered complete debt forgiveness.

Table 3.**Iraq's External Debt, 2006 to 2010**

(Billions of dollars)

	2006	2007	2008	2009	2010
Without Third Stage of Debt Reduction in 2008					
Paris Club Creditors	17	17	18	18	19
Non-Paris-Club Creditors	27	29	30	31	32
Private Creditors	3	3	3	3	3
Multilateral Creditors	1	2	3	4	5
Total Debt^a	48	51	53	56	59
Debt Service	0	0	1	2	3
With Third Stage of Debt Reduction in 2008					
Paris Club Creditors	17	17	9	9	10
Non-Paris-Club Creditors	27	29	15	15	16
Private Creditors	3	3	3	3	3
Multilateral Creditors	1	2	3	4	5
Total Debt^a	48	51	30	32	34
Debt Service	0	0	1	1	1
Memorandum:					
Total Unpaid War Reparations ^b	31	29	27	24	21
Reparation Payments ^b	1	2	2	3	3

Source: Congressional Budget Office based on data from the International Monetary Fund and the U.N. Compensation Commission.

Note: In November 2004, Iraq and the mainly Western industrialized nations belonging to the Paris Club of lenders agreed to a three-stage debt-reduction plan. The first two stages, which lowered Iraq's total debt to those countries by 60 percent, took effect in 2004 and 2005. The third stage, a further 20 percent reduction, is scheduled to occur in 2008. This table assumes that Iraq will negotiate the same debt-reduction terms with non-Paris-Club countries (for example, the figures for those countries for 2006 and 2007 also assume a 60 percent reduction). However, Iraq's negotiations with non-Paris-Club creditors are just beginning.

The figures shown here for private creditors reflect a reduction to about 15 percent of the original amount owed. The figures for multilateral creditors reflect new lending to Iraq by institutions such as the World Bank and the International Monetary Fund.

- a. Generally, increases in debt between 2006 and 2010 reflect accumulating interest on Iraq's remaining debt. The Paris Club agreement included a six-year grace period before repayments begin.
- b. CBO's estimate based on payments from Iraqi oil exports.

stability and met various goals set by the IMF. That stage was implemented in December 2005 (see Table 3). The third stage, a final 20 percent reduction of the original total, is scheduled to occur in 2008, assuming that Iraq continues to meet the macroeconomic and fiscal targets it agreed to with the IMF. In addition, Iraq was given a grace period until 2011 before it must begin repaying most of its remaining debt to Paris Club members.

The Iraqi government's record in reducing its private and non-Paris-Club debt is mixed. Most private creditors have agreed to let Iraq pay off or exchange its debt for about 15 cents on the dollar. But little progress has been made so far on debt reduction with nations that are not members of the Paris Club. Disagreement remains about exactly how much Iraq owes those creditors. Negotiations to agree on the amount owed are just beginning; after that, negotiations to reduce the amount owed will commence. Officials from the United States and various international institutions assume that Iraq will receive debt-reduction terms similar to those of the Paris Club agreement.²⁰

In addition to foreign debt, Iraq still owes about \$31 billion in reparations (out of \$52 billion awarded) as a result of its 1990 invasion of Kuwait, according to the U.N. Compensation Commission.²¹ Under the mandate of U.N. Security Council Resolution 1483, Iraq must set aside 5 percent of its oil export revenue to pay reparation claims. Unless the Security Council decided to waive the remaining claims, Iraq would pay approximately \$10 billion into the war reparations fund in the next four years under the IMF's projections for oil exports and prices. (Higher or lower export revenues would adjust Iraq's payments accordingly.)

Beyond 2010, Iraq's financial situation remains vulnerable to fluctuations in oil production and prices. The IMF estimates that by 2011, Iraq would be devoting about 5 percent of its gross domestic product, or \$3.2 billion, to repaying external debt. If Iraq suffered the "oil shocks" of production that was limited to 2.7 mbpd over the 2008-2011 period (lower than the IMF's projections but higher than today's 2.1 mbpd to 2.3 mbpd) or an average price that was about \$5 per barrel lower than the \$55 assumed in the IMF's projection, the country "would require significant borrowing from the international markets to close the financing gaps."²² Either stagnating oil production or lower oil prices could lead to a substantial reduction in the funds available for reconstruction—either because lower revenues could cause the government to curtail investment spending or because greater external debt could leave Iraq with higher debt payments and thus less money for investment in later years.

20. In fact, Iraq is obligated by the Paris Club agreement to not grant terms to non-Paris-Club creditors that are more generous than those with the Paris Club. If Iraq and its non-Paris-Club creditors cannot reach an agreement, Iraq is likely to remain in default with them and not make any repayments on those loans.

21. At the time of CBO's January 2004 report, considerable uncertainty existed about how much Iraq would continue to owe in reparations. That uncertainty appears to have been largely resolved by the United Nations: approximately \$350 billion in reparations were claimed, of which \$52 billion were awarded (deemed to merit payment) by the U.N. Compensation Commission. For more information, see the commission's Web site at www2.unog.ch/uncc/.

22. International Monetary Fund, *Iraq: First and Second Reviews Under the Stand-By Arrangement, Financing Assurances Review, and Request for Waiver of Nonobservance and Applicability of Performance Criteria*, p. 26.

Table 4.**U.S. Foreign Aid to Iraq, 2003 to 2007**

(Billions of dollars of budget authority)

Source of Funding	2003	2004	2005	2006	2007	Total
Iraq Relief and Reconstruction Fund 1	2.5					2.5
Iraq Relief and Reconstruction Fund 2	18.4					18.4
Iraq Security Forces Fund			5.4	3.0	1.7	10.1
Commander's Emergency Response Program			0.9	0.8	0.4	2.1
Economic Support Fund	0.1			0.1	1.5	1.5
Coalition Provisional Authority		0.9				0.9
Natural Resources Risk Remediation Fund	0.5					0.5
Other	0.5	0.1	0.2	1.4		2.2
Total	21.9	1.0	6.5	5.2	3.6	38.2

Source: Congressional Budget Office based on data from the Special Inspector General for Iraq Reconstruction.

Foreign Aid Pledged for Reconstruction

Since the removal of the Hussein government in March 2003, Iraq has received about \$53 billion in aid, or in pledges of aid, from foreign countries and multilateral institutions to help fund reconstruction efforts. The United States is by far the largest donor, having contributed about \$38 billion. That assistance has been in the form of grants, nearly all of which have already been spent or allocated to various reconstruction efforts. In contrast, aid from other sources is a mix of grants and loans, the majority of which have not yet been made available to Iraq.

U.S. Aid

U.S. assistance to Iraq comes from a variety of funding sources (see Table 4).²³ The first source was the Iraq Relief and Reconstruction Fund, which was created in April 2003 with an appropriation of \$2.5 billion, primarily to provide immediate postwar relief and restoration of services. It was followed in November 2003 by the second, much larger Iraq Relief and Reconstruction Fund (IRRF 2), which received an appropriation of \$18.4 billion for the long-term rehabilitation and reconstruction of Iraq. Under the original allocation, IRRF 2 was supposed to spend \$5.6 billion of that amount on the electricity sector; \$4.2 billion on security, police, and judicial institutions; almost \$4.1 billion on water and sanitation; \$1.7 billion on the oil sector; and about \$3.0 billion on variety of other areas (see Table 5).

The rise of the insurgency, however, and changing priorities led to the reallocation of those resources as well as to the appropriation of additional U.S. aid. As of July 2006,

23. For a detailed breakdown of the legislation that appropriated all monies for Iraq's reconstruction, see Special Inspector General for Iraq Reconstruction, *Quarterly and Semiannual Report to the United States Congress* (July 30, 2006), p. 92.

Table 5.

Changes in the Allocation of the Second Iraq Relief and Reconstruction Fund

(Millions of dollars of budget authority)

Sector	2004 Allocation	2006 Allocation	Difference
Electricity	5,560	4,220	-1,340
Water and Sanitation	4,053	2,131	-1,922
Health	793	785	-9
Refugees, Governance, and Civil Society	743	1,421	678
Transportation	605	644	39
Agriculture	279	105	-174
Private-Sector Development	214	700	486
Telecommunications	135	159	24
Education	90	99	9
Mine Clearing	61	83	22
Security, Police, and Justice	4,190	6,149	1,959
Oil	1,701	1,725	24
Human Rights	15	15	0
Administrative Expenses	n.a.	213	213
Total	18,439	18,449	10

Source: Congressional Budget Office based on data from Department of State, *Quarterly Report to Congress: 2207 Report on Iraq Relief and Reconstruction* (July 2006).

Notes: The first 10 sectors represent areas that the World Bank and United Nations surveyed independently for their 2003 assessment of Iraq's reconstruction needs. For the other four sectors, the World Bank and United Nations relied on data provided by the Coalition Provisional Authority.

n.a. = not applicable.

more of the IRRF 2 funding was being spent on security-related institutions, refugees, civil-society efforts, and private-sector development than originally allocated, and less was being spent on water, sanitation, electricity, and agriculture. (The allocation for the oil sector remained the same.) In addition, with the creation of the Iraq Security Forces Fund, the Congress and the President appropriated another \$10.1 billion for security in fiscal years 2005, 2006, and 2007. Thus, of the approximately \$38 billion that the United States has spent on Iraqi reconstruction (broadly defined), more than 40 percent—or about \$16 billion—has been allocated to security-related areas, including the new Iraqi army, national guard, police forces, and judiciary.

Other International Assistance

Donors other than the United States have pledged a total of about \$15 billion to assist Iraq's reconstruction, most of it at the October 2003 donors' conference in Madrid (see Table 6 on page 18). CBO does not have a complete breakdown of what form that aid is in, but more than half of it appears to be loans, many of which have below-

market interest rates. According to the Special Inspector General for Iraq Reconstruction, around \$4 billion of the non-U.S. aid has been expended thus far.²⁴

Some of the aid from other nations to Iraq is given bilaterally and some through international institutions, such as the World Bank and United Nations. For example, the United Kingdom has obligated nearly all of its \$920 million aid pledge and administers that money through its own aid agency, performing various projects similar to those conducted by the United States (although on a smaller scale). Most countries donate to the International Reconstruction Fund Facility for Iraq (IRFFI), which was created at the Madrid donors' conference and is managed by the World Bank and the United Nations. Some countries, such as Japan, administer their aid bilaterally as well as contribute to the IRFFI.

CBO has little specific information about the projects of non-U.S. donors. But according to the Special Inspector General for Iraq Reconstruction, international aid appears to be allocated to many of the same sectors as U.S. assistance.²⁵

The Role of Private Capital

In addition to government revenues and international aid, another possible source of funding for Iraq's reconstruction is private investment capital, whether from individuals and businesses within the country or from abroad. According to the International Monetary Fund, Iraq received a small net inflow of private capital, about \$100 million, in 2004. In the following two years, however, that net flow turned negative—indicating that more private capital was leaving Iraq than entering it—by about \$3.6 billion in 2005 and \$1.4 billion in 2006.

In its projections for the 2007-2010 period, the IMF projects that the net flow of private capital will once again turn positive, totaling about \$4.2 billion over those four years. That projection assumes an improved security situation and a more favorable climate for investment than now exist, which would be consistent with the IMF's projection of increased oil exports through 2010. If those conditions do not materialize, it is unclear how much private capital will enter or leave Iraq in the next few years.

The Status of Reconstruction Efforts in Selected Sectors

In light of the spending by the United States, the Iraqi government, and other countries, what progress is being made to reconstruct Iraq? To examine that issue, CBO compared the funding requirements and goals identified in the 2003 *United Nations/World Bank Joint Iraq Needs Assessment* with the progress made thus far in meeting those goals in selected sectors. CBO focused on the same sectors as in its January 2004

24. Special Inspector General for Iraq Reconstruction, *Quarterly and Semiannual Report to the United States Congress* (July 30, 2006), p. 93.

25. *Ibid.*, pp. 95-103.

Table 6.

Reconstruction Aid Pledged to Iraq by Countries and Institutions Other Than the United States

Donor	Amount Pledged (Thousands of dollars)
Individual Countries	
Australia	126,633
Austria	5,478
Belgium	5,890
Bulgaria	640
Canada	187,466
China	25,000
Cyprus	118
Czech Republic	14,659
Denmark	66,952
Estonia	82
Finland	5,890
France	32
Germany	10,000
Greece	3,534
Hungary	1,237
Iceland	2,500
India	10,000
Iran	10,000
Ireland	3,534
Italy	235,620
Japan	4,964,000
Jordan	75
Kuwait	565,000
Lithuania	30
Luxembourg	2,356
Malta	27
Netherlands	9,425
New Zealand	4,342
Norway	12,868
Oman	3,000
Pakistan	2,500
Qatar	100,000
Saudi Arabia	500,000
Slovenia	419
South Korea	200,000
Spain	222,380
Sri Lanka	76
Sweden	33,000
Turkey	50,000
United Arab Emirates	215,000
United Kingdom	452,326
Vietnam	700
Subtotal	8,052,791

Continued

Table 6.**Continued**

Donor	Amount Pledged (Thousands of dollars)
International Institutions	
Democratic Governance Thematic Trust Fund ^a	100
European Commission	905,300
International Monetary Fund	2,550,000 ^b
Islamic Development Bank	500,000
World Bank	3,000,000 ^b
Subtotal	6,955,400
Total	15,008,191

Source: Congressional Budget Office based on data from the Special Inspector General for Iraq Reconstruction.

- a. A fund established in 2001 through which donors can support the democracy-promotion projects of the United Nations Development Programme.
 - b. The low end of the range of funding being offered by those institutions, depending on Iraq's economic performance.
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report—electricity, oil, water and sanitation, education, and health—as well as on the security sector.

In general, according to the Special Inspector General for Iraq Reconstruction, the insurgency and endemic corruption have hindered the reconstruction process across all sectors of the Iraqi economy.²⁶ Attacks or the threat of attacks has prevented projects from being started and has damaged or destroyed projects that were under way or completed. For its part, corruption is costing Iraq about \$4 billion per year, according to the chairman of the Iraq Inspectors General Council. The country's Commissioner of Public Integrity is pursuing more than 1,400 cases of potential fraud or other criminal activity involving a total of about \$5 billion.²⁷

Security

The rise and continued activities of Iraqi insurgents have led to more spending on Iraq's security forces than was planned in 2003 but also to an increasing number of

26. Special Inspector General for Iraq Reconstruction, *Quarterly and Semiannual Report to the United States Congress* (July 30, 2006), pp. 4-5. With respect to security, also see the statement of David M. Walker, Comptroller General of the United States, before the Subcommittee on National Security, Emerging Threats, and International Relations of the House Committee on Government Reform, published as Government Accountability Office, *Stabilizing Iraq: An Assessment of the Security Situation*, GAO-06-1094T (September 11, 2006).

27. Special Inspector General for Iraq Reconstruction, *Quarterly and Semiannual Report to the United States Congress* (July 30, 2006), p. 5.

attacks against coalition and Iraqi targets. The United Nations/World Bank needs assessment, relying on data from the Coalition Provisional Authority, estimated in 2003 that the security sector would need \$5 billion between 2005 and 2007. Since then, the United States alone has allocated more than \$16 billion to the security sector.

According to information provided by various government sources, U.S. assistance to Iraq has contributed to the recruiting, training, and fielding of 323,000 military and police personnel. That figure does not include an additional 144,000 Iraqi personnel assigned to 27 ministries to protect government facilities. U.S. aid has also been used to build or refurbish some 1,200 security facilities, such as police and fire stations. According to the State Department, Iraq had 89 army or special operations battalions that were capable of operating “in the lead” or independently as of the end of September.²⁸ With 700 soldiers in an Iraqi battalion, that means 62,300 of the 323,000 military personnel are considered capable of operating independently or in the lead.

At the same time, violence in Iraq is continuing. As measured by the number of attacks on coalition and Iraqi forces, the summer of 2006 was a particularly violent period, with the largest number of attacks since the U.S. occupation began (see Figure 2). In particular, attacks on Iraqi civilians were at their highest point since 2003. As the IMF notes in its country report, “The continuing lack of security . . . remains Iraq’s biggest obstacle to its recovery and reconstruction program, and presents the greatest risk of all to its future prosperity.”²⁹

Electricity

U.S. assistance has provided a substantial increase in electricity generation in Iraq, but total generation is still short of official targets and anticipated demand. In 2003, the United Nations/World Bank assessment recommended spending \$12.1 billion between 2005 and 2007 to increase electricity generation in Iraq. The objective was to boost generating capacity from a prewar level of about 4,500 megawatts to nearly 8,800 megawatts by 2007. The United States has allocated \$4.2 billion to the electricity sector, of which \$3.5 billion had been obligated and \$2.4 billion expended as of June 2006.

U.S.-funded projects have added 2,710 megawatts to Iraq’s generating capacity. In June, power generation reached a peak of more than 5,000 megawatts. However, U.S. government reports on the electricity sector are now generally relying on the metric of average daily load served, measured by the number of megawatt-hours per day, to reveal how much power is actually getting to the Iraqi people. By that measure, the prewar level of generating capacity was about 98,000 megawatt-hours per day. The Iraqi government’s summertime goal is about 110,000 megawatt-hours per day, which

28. Department of State, *Iraq Weekly Status Report* (October 4, 2006), p. 12.

29. International Monetary Fund, *Iraq: First and Second Reviews Under the Stand-By Arrangement, Financing Assurances Review, and Request for Waiver of Nonobservance and Applicability of Performance Criteria*, p. 13.

Oil

Although higher oil prices have increased revenues by 50 percent over the past three years compared with the amount anticipated in 2003, oil production and exports have not met the targets set by Iraqi officials. The United Nations/World Bank assessment, using information from the CPA, estimated that Iraq would need to invest \$8 billion in the oil sector between 2004 and 2007 to increase production and fix and enhance distribution and storage facilities. According to the IMF, Iraq's budget plans between 2004 and 2006 called for spending about \$7 billion on oil-related investments, with an additional \$19 billion planned for 2007 to 2010. Of the amount of U.S. aid budgeted for Iraq between 2004 and 2006, \$1.7 billion was allocated to the oil sector.

Iraq is not yet able to meet its production goal of 2.5 million barrels of oil per day on a sustainable basis (see Figure 3). Average production in 2005 was 2.08 mbpd, increasing slightly in 2006 to an average of 2.12 mbpd. The summer of 2006 saw the highest average production and export of oil in the past two years, but production and exports declined again at the end of the summer. According to the U.S. Energy Information Administration, "most analysts believe that there will be no major additions to Iraqi production capacity for at least 2-3 years."³¹

Insurgent attacks and corruption have made sustained increases in oil production and exports very difficult to achieve.³² (Iraq's oil infrastructure suffered relatively little damage from the war itself.) Insurgents in particular have been able to keep the country's northern pipelines closed, eliminating at least 0.5 mbpd to 0.8 mbpd from production and exports. In addition, the profitability of refined petroleum products has provided an incentive for oil officials and workers to divert some production to the black market.³³ Approximately 10 percent of the petroleum products refined in Iraq are diverted to the black market, as are about 30 percent of the refined petroleum products imported into the country.³⁴

To meet the goals for oil revenues in the IMF's budget projections, Iraq would need to end attacks on oil production and export facilities and invest many billions of dollars to increase production. Prior to the war, Iraq's production potential was estimated to

31. Energy Information Administration, *Country Analysis Brief: Iraq*. Also see Lawrence Kumins, *Iraq Oil: Reserves, Production, and Potential Revenues*, Report for Congress RS21626 (Congressional Research Service, April 24, 2006).

32. In addition, Iraq is losing highly skilled senior managers in the oil industry, who prefer to leave the country rather than risk staying during the insurgency. See Chip Cummins, "Energy Security Is Hostage to Supply of Oil Professionals," *Wall Street Journal*, August 22, 2006, p. A1.

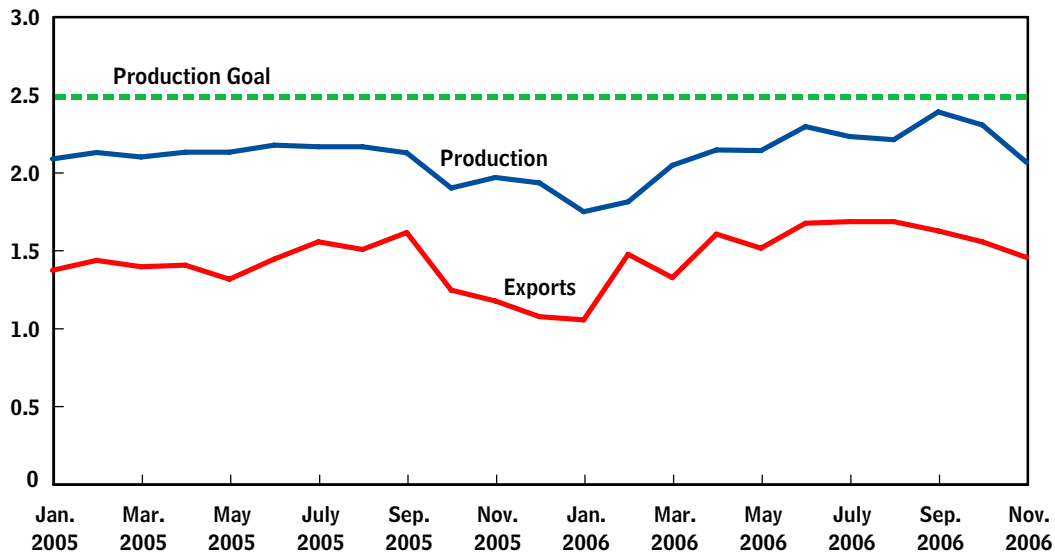
33. The Iraq Study Group reports that "150,000 to 200,000—and perhaps as many as 500,000—barrels of oil per day are being stolen." See James A. Baker III, Lee H. Hamilton, and others, *The Iraq Study Group Report* (December 6, 2006), available at www.usip.org/isg/iraq_study_group_report/report/1206/index.html

34. Special Inspector General for Iraq Reconstruction, *Quarterly and Semiannual Report to the United States Congress* (July 30, 2006), p. 37.

Figure 3.

Iraq's Oil Production and Exports Since January 2005

(Millions of barrels per day)



Source: Congressional Budget Office based on data from the U.S. Department of State.

be 2.8 mbpd to 3.0 mbpd, with exports accounting for 2.3 mbpd to 2.5 mbpd. The condition of many Iraqi oil fields deteriorated under Saddam Hussein's regime because of poor management and the use of techniques generally considered substandard by the oil industry. A change in strategy for managing the oil fields, modern techniques for pumping oil, and development of new fields could improve Iraq's production capacity substantially. However, although many outside companies are interested in investing in Iraq's oil industry, few are willing to do so without a more stable security situation and better investment laws and regulations.³⁵

Water and Sanitation

U.S. efforts to increase access to clean water and good sewage systems have had some success. Before the U.S.-led invasion, 9.5 million to 14 million people in Iraq, out of a population of about 27 million, had access to potable water. Many of the country's water and sanitation systems had been in decline before the invasion because of damage from the 1990-1991 Gulf War and long-term neglect by the Hussein government. Looting after the 2003 conflict further damaged Iraq's water and sanitation systems.³⁶

The 2003 United Nations/World Bank assessment stated that \$6.8 billion in investment would be necessary to bring access to water and sanitation back to 1991 levels and then expand it further. The United States has allocated \$2.1 billion to the sector with the goal of providing potable water to an additional 8.4 million people and sewer

35. Energy Information Administration, *Country Analysis Brief: Iraq*.

36. Congressional Budget Office, *Paying for Iraq's Reconstruction*, p. 22.

systems to 5.3 million people. So far, according to the Special Inspector General for Iraq Reconstruction, U.S. projects have provided potable water to 4.2 million people and sewer systems to 5.1 million people. Although the United States expects to achieve its goal once all U.S.-funded water and sanitation projects have been completed, various U.S. government agencies, including the Government Accountability Office, have raised concerns about sustaining and managing those systems thereafter.³⁷

Education

U.S. efforts to improve education have focused on rehabilitating schools, training teachers, and providing textbooks. The United States has spent about \$100 million from the Iraq Relief and Reconstruction Fund on education, with additional funding coming from other accounts. However, the United Nations/World Bank assessment said in 2003 that the education sector needed \$4.8 billion in investment.

According to the Special Inspector General for Iraq Reconstruction, Iraq had roughly 14,000 schools in 2003. After the conflict, U.S. officials determined that about 11,000 of those schools needed repairs or refurbishment—many as a result of neglect from the Hussein era rather than damage from the recent conflict. So far, U.S. aid has repaired or rehabilitated 5,270 schools and trained more than 60,000 teachers. U.S. assistance has also purchased “hundreds of thousands of desks, chairs, and chalkboards.”³⁸

At the same time, lack of adequate security has hindered education in Iraq. According to the Special Inspector General, 191 college professors have been killed and 85 have been kidnapped in recent years. Media reports have suggested that more professors have been killed and that an additional 2,000 academics have fled the country.³⁹

Health

Unlike for other sectors, the 2003 United Nations/World Bank assessment did not conduct a detailed analysis of the needs of Iraq’s health care sector and associated infrastructure. Instead, the United Nations and World Bank (in conjunction with the World Health Organization, UNICEF, and the CPA) looked at the level of per capita health care funding in countries of a similar socioeconomic status. They determined that a spending level of \$70 per person, based on a per capita gross domestic product of \$1,000 (the projected amount for Iraq in 2004) was an appropriate funding level for the health sector. The needs assessment recommended investing \$1.6 billion in that sector, in addition to funding that would be provided from the Iraqi budget and

37. Government Accountability Office, *Rebuilding Iraq: U.S. Water and Sanitation Efforts Need Improved Measures for Assessing Impact and Sustained Resources for Maintaining Facilities*, GAO-05-872 (September 2005).

38. Special Inspector General for Iraq Reconstruction, *Quarterly Report to the United States Congress* (October 30, 2006), p. 60.

39. Charles Crain, “Approximately 300 Academics Have Been Killed,” *USAToday.com*, January 17, 2005.

the private sector. However, the assessment stated that much of that funding would probably be spent on infrastructure—given the poor condition of Iraq’s health care system after 20 years of rule by Saddam Hussein—rather than on providing ordinary health care services.⁴⁰

CBO was unable to gather the necessary data to determine whether health care spending in Iraq has reached \$70 per capita. Iraq is projected to have a per capita gross domestic product of around \$1,600 this year, an amount that would rise to almost \$2,900 in 2010 under the IMF’s projections for oil exports and revenues. If that economic growth materialized, the target for health care spending per capita could rise from \$70 to around \$150, based on the spending of countries with comparable economies.

U.S.-funded projects in the health sector have had mixed results, with problems in the construction of primary health centers on the one hand and the achievement of high vaccination rates on the other hand. The United States has directed \$783 million from the second Iraq Relief and Reconstruction Fund to the health sector (only slightly less than the original 2004 allocation of \$793 million). The goal of that U.S. assistance is to provide health care services to more of the country by moving from a centralized system based on large inpatient hospitals to a system consisting of many smaller primary health care centers.⁴¹ That effort is the largest construction program funded by IRRF 2. However, according to the Special Inspector General for Iraq Reconstruction, “progress has been significantly impeded by security and management problems.”⁴² Of the 150 primary health care centers that the United States aimed to build, only six have been completed and two are operational. Contracts for the remainder have been terminated and reawarded to Iraqi firms. Likewise, of 25 projects to rehabilitate existing hospitals, just 13 have been completed, and the rest of the contracts have been terminated and reawarded.

Nonconstruction health-related projects, such as the inoculation of Iraqi children against various diseases and the training of Iraqi medical personnel, have had more success. Most Iraqi children have received vaccinations for measles, mumps, polio, and rubella. Corresponding infection rates have dropped substantially.

40. Congressional Budget Office, *Paying for Iraq’s Reconstruction*, pp. 22-23.

41. Department of State, *Quarterly Report to Congress: 2207 Report on Iraq Relief and Reconstruction*, p. I-95.

42. Special Inspector General for Iraq Reconstruction, *Quarterly and Semiannual Report to the United States Congress* (July 30, 2006), p. 67.