

## OVERVIEW OF KEY INDUSTRY SECTORS IN IRAQ

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Agriculture, petroleum, and infrastructure are the prime sectors that should provide a firm foundation for trade and investment in Iraq. Iraq has a generally well-educated and well-trained population of over 25 million. The country's natural resources are diverse. Endowed with two major rivers, Iraq has fertile soil in much of the country. Most notably, Iraq possesses 11 percent of the world's proven oil reserves, second only to Saudi Arabia.

Saddam Hussein's defiance of the international community over the past decade largely isolated Iraq's economy from the international marketplace, with consequences to all sectors.

**Agriculture:** Iraq has abundant resources of land and water, which makes agriculture one of the largest sectors of the country's economy. It constitutes 29 percent of GDP and 20 percent of employment. However, over the last 20 years the sector has collapsed. On average, agricultural production levels have been declining by 2.6 percent per year since 1990. More than 50 percent of the population is affected by food insecurity. The Oil-For-Food Program, while essential to the humanitarian situation in Iraq, was a severe disincentive to food production. Over half of Iraq's total food requirement is imported, and a large portion of the population is dependent upon government-financed food rations for survival. The water supply is currently depleted due to inefficient use and sewage contamination.

The sector holds tremendous potential for the future however. Twenty seven percent of Iraq's total land area is suitable for cultivation, over half of which is rain-fed while the balance is irrigable. The U.S. Department of Agriculture (USDA) estimates that only half of this irrigable land is currently under cultivation, leaving room for tremendous growth. This lack of resource utilization is attributed to a lack of farm machinery, equipment, water shortages, low technology uptake, and a lack of profit incentive. The cost of the annual food rations provided to Iraqis is estimated at over \$2 billion per year. Wheat, barley, and chickpeas are the primary staple crops. Iraq was once self-sufficient in agriculture and was also the world's number one exporter of dates.

The World Bank has estimated the sector recovery cost for 2004 to be \$3.6 billion. Capital expenditures in 2004 by the Iraqi budget are listed at \$2.4 billion, leaving \$1.2 billion in external funding needed.

The monetization of the UN Oil-For-Food program and the establishment of a profitable market for agricultural products are intended to provide proper growth incentives for Iraqi farmers. Currently, the food basket is distributed through the Public Distribution System under the Ministry of Trade. Retail food stores are now operational and farmers are able to choose their own production. The World

Food Program also continues to supply wheat and other goods to Iraq. Research and training activities are needed to initiate market liberalization, competitive production, and phasing out of state subsidies.

The Ministry of Agriculture is beginning to actively work with its stakeholders to improve the operating environment. For example, it recently held its first technical workshop through its Crop Technology and Management Demonstrations Program in Mosul. Twenty scientists and farmers attended the session, which aims to revitalize production and increase farmer's access to vital inputs. USAID and its contractors are also demonstrating winter crops throughout the country in order to expand the growing season. The Ministry is renovating veterinary hospitals and clinics through grants. The Baghdad University School of Agriculture recently received a \$75,000 grant to benefit its 4,509 students.

A \$5 million USAID contract for agricultural reconstruction and development, announced on October 21, 2003, was awarded to Development Alternatives, Inc. ([www.dai.com](http://www.dai.com)). The one-year program is referred to as the "Agriculture Reconstruction and Development Program for Iraq" (ARDI). The primary goals are to support Iraqi initiatives to revitalize production, stimulate income and employment through agro enterprise and market development, develop rural financial services (and rural micro finance organizations), and rehabilitate natural resources.

The first phase of ARDI focuses on the distribution of seed and fertilizer, equipment and other quick impact activities. The project will concentrate on Iraq's main agricultural sectors: cereals, horticulture, livestock, dairy, and poultry. The program also focuses on water resources development and soil reclamation, with an emphasis on restoration of the Iraqi marshlands in the south. The second phase will last eight months and focus on longer-term rehabilitation and sustainability.

**Oil:** The oil sector dominates Iraq's economy, with oil exports historically accounting for about three-quarters of gross domestic product (GDP) and more than 90 percent of foreign exchange earnings. Iraq has an estimated 112 billion barrels of proved, probable, and possible oil reserves - the world's second largest after Saudi Arabia. Many petroleum specialists believe that Iraq's undiscovered resource potential could increase the country's holdings to as much as 200 billion barrels. Iraq also has world-class natural gas reserves that are both associated with oil fields and held in separate accumulations. Iraq's natural gas reserves are pegged at 110 trillion cubic feet, but this estimate could grow much larger as more exploration occurs.

Iraq has the potential to earn between \$10 billion and \$15 billion annually over the next several years. As of May 21, 2004, estimated crude oil export revenue is \$6.2 billion for 2004. Reestablishment of Iraq's pre-1991 production capacity of

3.5 mbd is a high economic priority. Based on its existing reserves and undiscovered resources, Iraq has the potential to produce 6 mbd, although this production level likely will not be achieved until after 2010.

CPA has set a current production goal of 2 mbd (million barrels per day). For the week of May 15-21, 2004, the average total crude oil production was 1.925 mbd. The average crude oil exports for the month of May were 1.604 mbd.

Although Iraq was able to increase oil production in the 1990s, this was accomplished largely through the use of improvised maintenance techniques, scavenged spare parts, and the cannibalization of equipment, especially at the country's refineries. Iraq's upstream and downstream oil and gas infrastructure is outdated and requires a sizable investment in repair, rehabilitation, and upgrading. In addition, large-scale investment is required to develop dozens of oil fields that have been identified and appraised, but are as yet undeveloped.

The Ministry of Oil needs to improve management of the oil sector to meet international best practices. The oil industry's 70,000 workers may need to be reorganized and retrained to function efficiently.

Currently, domestic production of kerosene, gasoline, LPG, and diesel fuel does not meet domestic demand. Significant investment is needed to reach levels of self-sufficiency.

The U.S. Army Corps of Engineers ([www.hq.usace.army.mil/cepa/iraq/contracts.htm](http://www.hq.usace.army.mil/cepa/iraq/contracts.htm)) has been assigned to undertake the rehabilitation of Iraq's oil sector. To date, the Corps has contracted with Kellogg, Brown and Root (KBR), Fluor Intercontinental, Washington Group International, and Perini Corporation. Their contracts include oil field repair, logistics support services, and oil well fire damage control. The Iraqi Ministry of Oil is also beginning to publish tenders on its website at [www.uruklink.net/oil/](http://www.uruklink.net/oil/).

**Airports and International Travel:** Iraq has approximately 108 airports and airfields throughout the country. International airports exist in Baghdad and Basra while major domestic airports exist in Mosul, Kirkuk, and Irbil.

All airports in Iraq are severely outdated. Systems had gone without maintenance for years and suffer from a lack of spare parts. International commercial airlines have not operated in Iraq for thirteen years. Iraqi Airlines operated domestically during the Saddam regime but its antiquated and partially destroyed fleet is no longer in service.

Non-military arrivals and departures are being successfully processed at Baghdad International Airport (BIA). There are now an average of 24 non-military arrivals and departures per day at Baghdad. Renovations continue to

expand BIA's commercial capability. Basrah airport's commercial preparations are substantially completed while evaluations of reconstruction requirements at Mosul airport have just been completed. Basrah is now reporting an average of 2 civilian departures per day while Mosul has an average of three.

As with many areas of Iraq, these airports suffered from insufficient availability of power, water, sewage and telecommunications. These problems are being addressed by the USAID Capital Construction contract to Bechtel and include the installation of a number of communication systems necessary for safe and effective air traffic control of commercial air service.

Bechtel maintains information on all their transportation activities at [www.bechtel.com/iraq.htm](http://www.bechtel.com/iraq.htm). The PMO Transportation RFP can be found on the Program Management Office website at [www.rebuilding-iraq.net](http://www.rebuilding-iraq.net).

The CPA currently administers air traffic control and security at the Baghdad and Basra airports. The responsibility of running the airports will eventually shift to the Ministry of Transport.

**Seaports:** While Iraq has six separate ports, its single deep-water port is at Umm Qasr. The new port section of Umm Qasr can now accommodate 12 five-meter-draft ships. Previously, only four-meter-draft ships could enter the port due to heavy siltation. In addition to siltation, a number of shipwrecks and pieces of debris in the port waters were removed. All 21 berths are now open and available. At Umm Qasr over 40 ships per month are offloading. Over 200,000 tons of grain have been unloaded since November using the newly rehabilitated grain-receiving facility.

A ferry service operates three times a week, moving people, vehicles, and cargo between Umm Qasr and Dubai, UAE.

Umm Qasr has over 175,000 square feet of covered warehouse and 800,000 square feet of storage location. The grain facility is now capable of mechanically unloading up to 60,000 tons of grain at a time. Both road and rail lines link these storage facilities with outside transportation paths, although the rail line is still undergoing reconstruction.

There is ample land around the current port site for expansion. In addition to general restoration, the Umm Qasr port is in need of improved cargo and container moving equipment, support vessels such as tug boats and response vehicles, and an administrative overhaul. Fencing has been installed around the perimeter of the port. All power substations have been repaired and the port is entirely lit at night.

Iraq's other five ports are smaller in scale, narrowly specialized, and generally considered a lower priority in comparison with Umm Qasr. Three of these five

ports are located on the Shatt al Arab waterway that poses severe river travel challenges. The Shatt al Arab has low water levels, silting problems, security issues, and is intersected by a number of obstructive pontoon bridges that lay flat in the water.

Oil terminals are located at Al Baker and Khawr Al Amaya. The Ministry of Oil governs these two terminals, while the Ministry of Transport and Communications operates the ports.

The PMO Transportation RFP can be found on the Program Management Office website at [www.rebuilding-iraq.net](http://www.rebuilding-iraq.net). CPA and the Ministry of Transportation are currently developing long-term port management contracts for the ports of Umm Qasr and Khawr Az Zubayr.

**Railways:** Iraq has approximately 1,525 miles of rail line, though about half of it is considered to be in poor condition. A lack of signals and poorly maintained tracks cause considerable delays as train travel speeds are significantly reduced.

Five main rail lines exist: 1) Baghdad to Basra and Umm Qasr; 2) Baghdad to Mosul and Syria; 3) Baghdad to Al Ramadi to Al Qaim; 4) Al Qaim to Akashat; and 5) Kirkuk to Baiji and Haditha. Along these lines are 107 stations. Many of these stations, as well as maintenance shops and offices, were looted. Service has resumed at a moderate level, with about ten trains running per day.

Iraq's rolling stock has deteriorated severely over the past few decades. A lack of maintenance has caused an accumulation of inoperable stock. Of the stock that does function, there are roughly 150 locomotives, 150 passenger cars, and 8,000 flatbeds and cargo cars, a small number of which transport oil.

The most important priority in refurbishing and improving the rail lines is establishing a reliable line from Umm Qasr to Shuiaba Junction near Baghdad. This line will be used to transport large amounts of goods coming in from the port at Umm Qasr. The existing Umm Qasr-Baghdad line has not been upgraded since the 1950's and is being replaced by a new 72-kilometer, European-standard line built by Bechtel and Iraqi Republic Railways (IRR). This line will provide service of up to thirty trains per day and will offer affordable, high capacity transport for goods arriving at Umm Qasr. An additional sixteen kilometers of rail will be added to the already substantial rail network that exists within the port itself.

Track-laying equipment owned by IRR is being repaired and used for the construction of the new line. New signals and modern equipment will dramatically reduce the occurrence of mishaps, accidents, and derailments. Training in modern rail operations would also be provided to IRR employees.

The U.S. Trade and Development Agency held a conference on reconstruction needs in Iraq's rail sector and met with U.S. firms in one-on-one meetings in February 2004. Under the fiscal year 2004 budget, \$210 million has been allocated for the reconstruction of the Iraqi railway sector. Export opportunities for U.S. firms exist in the areas of reconstructing and upgrading rail track systems, track maintenance equipment, procuring and refurbishing rolling stock, intermodal and container handling equipment, rail control and signaling equipment, and communications and information technology.

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**Roads:** Iraq has a fairly extensive network of roughly 24,000 miles of roads and highways, 85 percent of which are paved. Most of these roads were constructed in the 1970's and 1980's and have received little maintenance since. Heavy military use and overloaded trucks have compounded the problems, producing mediocre road conditions in many areas. Many miles of road will need to be repaired in the near term.

The main artery of the country is a six-lane expressway that connects the Jordanian border in the west to Baghdad, and then Baghdad with Basra in the south (near Umm Qasr). North of Basra, on this expressway, is a missing section 94 miles long that is in need of completion. Also, a number of links to the expressway could be built from cities that currently have no direct access.

Primary roads link Baghdad to various cities throughout the country. These are often four-lane roads. A network of military roads facilitated troop movement along the borders for defense purposes. Beyond these roads exist smaller, secondary roads as well as village roads, many of which are unpaved. Several of these primary and secondary roads are in need of repair. It is believed many village or town roads are also in need of expansion.

Over 1,100 bridges exist in Iraq to provide crossings over the Tigris and Euphrates rivers and their tributaries. Many of these bridges, including the main ones, require rehabilitation. Three main bridges that are currently targeted for repair are the Al Mat, Tikrit, and Khazir bridges. A handful of bridges are temporary, pontoon bridges that need permanent replacements. Many locations could benefit from the building of new bridges.

Road safety is not ideal given road conditions, missing signage, congested areas, and poor interchanges. Government road administration and maintenance is getting back on track, but will require considerable funding and work. The State Commission for Roads and Bridges (SCRB), located within the Ministry of Housing and Construction (MOHC), is responsible for the expressway and all national roads and bridges not within municipalities.

The PMO Transportation RFP can be found on the Program Management Office website at [www.rebuilding-iraq.net](http://www.rebuilding-iraq.net).

**Public and Commercial Transport:** Iraq has a comparatively small private vehicle fleet that, given its population of 25 million, will likely change as the lifting of economic sanctions permits more automobiles into the country. As a result of the small number of vehicles, buses are highly utilized. An extensive number of bus routes exist, ranging from intra-city to international. Taxi services are readily available. A number of private car owners will pick up passengers on the side to make extra income. Increasing traffic problems are anticipated as the number of cars in the country increases before road systems can be expanded.

Trucks handle much of the freight shipping services in Iraq. Main routes are: 1) Umm Qasr to Baghdad; 2) Aqaba, Jordan to Baghdad; and 3) Tartous, Syria to Baghdad. These trucks were mostly laden one way during the Hussein regime as they delivered goods to Baghdad as part of the UN's Oil-For-Food program. The trucks are often old and in fair to poor condition. Ownership of these trucks is currently at a variety of levels, many with at least partial government ownership. Private company monopolies exist through widespread leasing of individual trucks. Government involvement will most likely decrease as privatization of the trucking industry is encouraged.

The PMO Transportation RFP can be found on the Program Management Office website at [www.rebuilding-iraq.net](http://www.rebuilding-iraq.net).

**Power:** In early October 2003, Iraq's electricity production exceeded demand for the first time in years. However, to satisfy Iraq's peak demand for electricity, the country will need 50 percent more generation by summer 2004. Decades of fuel shortages and lack of regular maintenance have severely curtailed dependable electrical supply. Post-war looting and sabotage rendered seven of the country's major transmission lines inoperable. Given these needs for reconstruction, companies may have numerous and wide-ranging opportunities in the power sector.

The United Nations has several projects underway in Iraq, one of which is electricity rehabilitation. In the three northern governorates (Erbil, Dohuk, and Suleimaniya), the UN Development Program (UNDP – [www.undp.org](http://www.undp.org)) implemented the Electricity Network Rehabilitation Program (ENRP – [www.enrp.undp.org](http://www.enrp.undp.org)) to rehabilitate the electricity network across four main sectors: generation, transmission, substations, and distribution. Through ENRP, the UNDP has built up capacity to implement an operation of \$800 million. Its work has resulted in power stability for about 380,000 households (2.7 million people). Thus far, ENRP has awarded 25 contracts worth \$238 million. The ENRP provides information on current vacancies, invitations for expression of interest, and procurement notices.

At the Iraq Donors' Conference in Madrid, the Ministry of Electricity (MOE) proposed construction of combined cycle power plants, transmission line additions, completion of thermal power stations begun under the Oil for Food Program, and training of technicians. The Minister expressed concerns for environmental sensitivity and security for workers in the electricity sector. The CPA is transitioning securing forces to the MOE. Over 20 electrical facilities have been transferred.

During the week May 15 - 21, 2004, the average peak electricity production was 3,912 MWpd. Electricity production Iraq-wide since November 2003 had been relatively steady.

As of May 7, 968 MWpd of generating capacity was on forced outage and 1,308 MWpd was on scheduled outage.

Major power infrastructure projects are incorporated within the potential scope of USAID's Capital Construction contract. Information on Bechtel's work in the electricity sector, including support for CPA and UNDP efforts in Iraq, is available at [www.bechtel.com/PDF/Iraq\\_Power.pdf](http://www.bechtel.com/PDF/Iraq_Power.pdf). The PMO Electrical RFP can be found on the Program Management Office website at [www.rebuilding-iraq.net](http://www.rebuilding-iraq.net).

**Water:** The Ministry of Public Works recently announced that average daily availability of water services in Iraq is one-hour above pre-war levels. Over 90 percent of the urban population is thought to have access to water, but quantities per capita are insufficient. It is estimated that 60 percent of the overall population has access to potable water. In many neighborhoods, leaking pipes have contaminated potable water networks.

The water treatment system in Iraq consists of 218 traditional water treatment plants and 1,191 mobile compact water treatment plants that mainly serve rural areas. Baghdad's water distribution system consists of nine large dams, 18 major barrages, and 275 pump stations. The equipment used in these pumps stations is over 20 years old.

The Ministry has plans to ensure that the 90 percent of Iraqis who currently have access receive clean water by 2004, and that all Iraqis have access to clean water by 2005.

The Ministry's plan also calls for extending sewage treatment to 15 percent of the country by the end of 2004 and to 30 percent by the end of 2005. Only eleven percent of Iraqi citizens nationwide currently have proper sewage facilities. Only half of the country's sewage treatment plants are operational. In Baghdad, deteriorating sewage treatment installations are unable to handle increasing flows caused by population growth. Steps taken by the CPA and various non-government organizations (NGOs), in cooperation with the Baghdad city water authorities and the Army Corps of Engineers, averted an immediate water crisis



in Baghdad. Already there has been significant progress at the Sharkh Dijlah water treatment plant in Baghdad. The rehabilitated and expanded plant adds 225,000 cubic meters of potable water per day to the supply. This will benefit 640,000 people.

Projects aimed at improving Iraq's irrigation systems, potable water availability, and wastewater treatment facilities are included within the scope of USAID's Capital Construction contract and Parson's PMO contract. Bechtel is currently working on a project to increase water capacity on the eastern side of Baghdad, increasing flow from 580 million liters per day to 780 million. Work has also begun in Basrah, Diwaniyah, and Hillah on sewage treatment plants.

The Ministry has announced plans to hire 100,000 Iraqis in temporary positions to proceed with basic public works projects: cleaning the cities, refurbishing the gardens, and collecting garbage. Private humanitarian groups are also contributing to the treatment of damaged water facilities. Veterans for Peace, a nonprofit educational and humanitarian group, managed to raise close to \$200,000 to repair six water treatment facilities, which serve a population of more than 85,000 people. The World Bank estimates a total cost of 1.8 billion in 2004 for improvements to water sanitation and solid waste, and \$4.9 billion in years 2005 through 2007.

The PMO Water and Wastewater RFPs can be found on the Program Management Office website at [www.rebuilding-iraq.net](http://www.rebuilding-iraq.net).

**Telecommunications:** U.S. companies will find opportunities in resuscitating Iraq's telecommunications ("telecom") sector. There were as of April 2003 less than three phones for every 100 people. The state-owned Iraq Telecommunications and Posts Company is the sole provider of both landline telecom and postal services in Iraq. Given the current state of Iraq's telecommunications infrastructure, quickly establishing a functioning telecom system in Iraq is an economic development priority. The World Bank estimates that in 2004, telecom rebuilding will need \$1.04 billion, and from 2005 through 2007, the sector will need \$2.3 billion. At the Madrid Donors' conference on Iraq, a goal of increased teledensity to 10 percent was set for 2007. To reach it, private investment will be required.

Since the fall of the Hussein regime, sales of satellite receivers and other digital equipment has been explosive. Anecdotal evidence points to thousands of DVDs, CDs, Digital Video Broadcast equipment, and media players making their way to Iraq. Harris Corporation recently won a \$96 million contract through the Department of Defense to restore Iraq's media outlets, including its television networks.

CPA Order # 11 provides for the Iraqi Ministry of Transportation and Communications to be the licensing and regulatory body for all commercial

telecommunication services in Iraq. More recently, a Communications and Media Commission, separate from the Ministry, has been established to act as the sector regulator. This new body is described under CPA Order #65. The PMO Communications RFP can be found on the Program Management Office website at [www.rebuilding-iraq.net](http://www.rebuilding-iraq.net).

Since May 2003, CPA has reinstated telephone service for 194,975 subscribers, and continues to make progress in restoring service to customers, especially in Baghdad. There are now 1,192,175 active telephone subscribers in Iraq. This includes 315,000 cell phone subscribers. CPA has repaired 18 telephone switches since May 2003. Four switches out of 203 are still inoperable. ITPC is now fully crewed and equipped at all of these switches and is able to connect as many as 2000 lines per day per switch. The satellite gateway for international calling is fully operational, however ITPC continues to block outgoing calls. Inbound calls are being received.

The Communications Minister announced the winners of the competition for mobile licenses in late 2003. The northern region license was awarded to Asia-Cell, a Kurdish Iraqi company. An Egyptian company, Orascom, won the central region license. A Kuwaiti company, Atheer, won the license for the South. Cell phones are now being distributed and the network, although now small, has begun to function.

Two hundred sixty-three post offices have been restored and are now functioning. Estimated daily mail volume at the Central Post Office is 1,000 pieces per day. The Ministry of Communications will soon activate the Iraq Post International Service Center at Baghdad International Airport that will connect Iraq Post services internationally.

There are opportunities for U.S. firms to establish Internet access in Iraq. Since the previous Iraqi regime considered the Internet a direct threat to the status quo, it was scarcely available. The State Company for Internet Services has 60,000 subscribers, of which only half were operating before the war. Internet centers charged a \$55 annual membership fee and Iraqi companies had to pay between \$2,500 and \$8,000 per year to install the Internet in their offices. Computer equipment was also restricted, with only 15 percent of the population thought to be able to use a computer. Dramatically increasing the number of computers in Iraq and accelerating Internet access throughout the country will facilitate economic development in Iraq.

**Healthcare:** The Iraqi health care system suffers from a lack of equipment, depletion of trained professionals (many of whom left the country), and poor standards. Some of the areas that are particularly lacking are cardiovascular treatment capability, general hygiene products, dialysis, and a lack of functional laboratories.

The health system that Saddam Hussein supported was corrupt and the quality of healthcare varied according to ethnic region. Shiites in the south have higher infant death rates than Baghdad, and in Kirkuk, health standards were manipulated. Any company wanting to sell drugs to the Ministry of Health had to pay a 10 percent service charge, which would eventually end up in a Baathist treasury account in Amman. In 2002, doctors were paid \$20 a month while pharmacists were making only \$1 a month.

There are approximately 240 hospitals and 1,200 primary health care clinics operating in Iraq. Most equipment is broken, outdated or inadequate. Services and quality of the healthcare system vary by region, with better services available in and around Baghdad and the northern areas. The Ministry of Health has around 100,000 healthcare professionals and staff, of which over 80 percent are women. Iraq tends to have a relatively high number of specialists but lacks an adequate number of primary health care workers. The country has very few first-tier pharmaceuticals available.

Through quick action by the Coalition, Iraqis, USAID, and international relief organizations, a public health crisis in the wake of the war was avoided. The healthcare system is up and running at pre-war levels. Over \$40 million has been spent on 128 generators for healthcare sites. More than 13,000 tons of pharmaceuticals and supplies have been delivered since late May 2003. Medical equipment is being surveyed and repairs made where possible. The Ministry has begun an "Adopt a Hospital Program" to foster international assistance. Three million children have been vaccinated under the "Monthly National Immunization Day" program. From January 18-21, DOC and the U.K. Government jointly hosted a delegation of ten Iraqi health delegates to meet with U.S. and U.K. exhibitors at Arab Health in Dubai. Discussions are underway for continued joint U.S./U.K. initiatives in this sector.

Abt Associates ([www.abtassoc.com](http://www.abtassoc.com)) was awarded a \$40 million contract to assist in stabilizing and strengthening the health system. Abt is responsible for helping to rebuild almost all sub-sectors of the healthcare system. The company is assessing and implementing emergency relief, planning, process improvements, health economics, and data collection and information systems.

The PMO Public Buildings, Housing, and Health RFP can be found on the Program Management Office website at [www.rebuilding-iraq.net](http://www.rebuilding-iraq.net). In addition, the Iraqi Ministry of Health website can be found at <http://www.mohiraq.org/>.

UNICEF has been active in delivering basic vaccines, and the Ministry of Health currently promotes a monthly "Vaccine Day," delivering over 1.4 million doses of vaccinations since July 2003, with another 30 million procured with the help of USAID and UNICEF. Almost one-third of children in the south and central regions suffer from malnutrition. Women suffer from high rates of anemia (estimated to be as high as 60-70 percent). Low breastfeeding levels, low birth

weights, diarrhea, and acute respiratory infections all contribute to high child mortality rates (125 per 1,000). Over 8,000 Iraqi workers have begun training to screen and manage malnourished children. (The World Health Organization contributed \$10 million.)

Prior to 2003, the highly centralized Iraqi health system tended to concentrate more on curing illnesses rather than prevention. The Ministry of Health is placing decentralization of the management structure as one of its highest priorities in the coming year. Currently, there is a great need for the development of a system of standards, and the need to license health care professionals to ensure that these standards are enforced. There is little existing health legislation in Iraq, and the legislation that does exist needs to be strengthened. Also, up-to-date training and education programs are needed, along with new professionals in the fields of healthcare management, planning, and finance.

**Housing and Construction:** The lack of housing and the existing low quality housing create one of the largest potential markets in Iraq. Unfortunately, it only recently started getting significant media coverage and funding. The current housing shortage is estimated at 1.4 million units. In addition, prison and school construction is desperately needed. Like much of the Arab world, deeds and titles are unclear or non-existent making ownership of land and other property unclear. This also affects financing, mortgages and other banking functions.

The 2004 budget funds two new projects of 504 apartments each. Three low-income projects (1,320 apartments) are underway with 2003 budget funds. In addition, CPA made a special allocation of \$100 million for 13 additional projects of 504 apartments each. Bids on these contracts opened on January 10. Construction should begin by the end of February. Access to housing is also essential. CPA has completed 23 road and bridge projects with 112 projects underway in addition to the road projects falling under USAID and Bechtel.

**Other Sectors:** The non-oil industrial sector also includes such industries as petrochemicals, phosphate, sulfur, fertilizers, minerals, cement, paper, consumer goods, light manufacturing, electronics, machinery and transport equipment, textiles, leather and shoes, and food processing and packaging. Most major industrial enterprises were state-owned.