

# The Middle East and North Africa



## THE MIDDLE EAST AND AFRICA

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### U.S. Goals and Interests

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U.S. goals in the Middle East and Africa include securing a just, lasting, and comprehensive peace between Israel and all Arab parties; maintaining a steadfast commitment to Israel's security and well-being; building and maintaining security arrangements that assure the stability of the Gulf region and unimpeded commercial access to its petroleum reserves; combating terrorism; ensuring fair access for American business to commercial opportunities in the region; and promoting more open political and economic systems and respect for human rights and the rule of law. In this volatile region, the proliferation of NBC weapons and the means of delivering them poses a significant challenge to the ability of the United States to achieve these goals. Iran, Iraq, Libya, and Syria, which are aggressively seeking these capabilities and increased missile capabilities, constitute the most pressing threats to regional stability.

Iran is actively attempting to acquire or produce a full range of NBC weapons and missiles. The United States believes Iran is committed to acquiring nuclear weapons, either through indigenous development or by covertly acquiring enough fissile material to produce them. During the Iran-Iraq War, Tehran initiated biological and chemical weapons programs, in direct response to Iraq's use of chemical weapons. In addition, Iran is expanding its ballistic missile programs.

Iraq has long had NBC weapons and missile efforts. The challenges these weapons pose in time of conflict became clear during the Gulf War (Operation Desert Storm), when the United States and allied forces had to deal with real and potential complications posed by Iraq's arsenal of NBC weapons and missiles. When Iraq invaded Kuwait in 1990, it had a known chemical warfare capability and a demonstrated willingness to use it (Iraq used chemical weapons against Iranian troops and its Kurdish population during the 1980s) a suspected biological warfare capability, and an ongoing nuclear weapons development program that progressed despite the range of international export controls and

inspection activities undertaken by the IAEA. As a result of post-war UN inspection efforts, the true dimensions and level of development in these programs became much clearer and more evident. As efforts to renew UN inspections in Iraq continue, the international community continues to maintain sanctions on Iraq, which shows no let up in its pursuit to reconstitute its pre-war weapons and missile capabilities.

Iran and Iraq have each demonstrated their intent to dominate the Gulf and to control access to critical oil supplies. In their pursuit of regional hegemony, Iran and Iraq regard NBC weapons and missiles as critical to their defense against each other and necessary to support their overall political and military objectives. Possession of nuclear weapons would likely lead to increased intimidation of their Gulf neighbors, as well as increased willingness to confront the United States.

Libya remains a significant proliferation concern. Libyan leader Muammar Qadhafi has shown that he is willing and capable of using chemical weapons and missiles against his enemies. Libya sees the United States as its primary external threat, owing to unrelenting United States opposition to Libya's support for terrorism, NBC programs, and aggressive behavior. Although Libya's capabilities to use chemical agents and missiles are limited, Qadhafi remains undaunted in his pursuit of such capabilities and might not hesitate to provide forms of these weapons to states or terrorist groups he supports and which support him in return.

Syria possesses a substantial force of ballistic missiles capable of reaching targets throughout Israel and has an active chemical weapons program. Syria views Israel as its primary external threat and sees its chemical weapons and ballistic missiles as means to counter Israel's qualitative superiority.

The U.S. defense commitments, military presence, and demonstrated ability to defend our own and allied interests against such threats are vital to achieving our goals in the region.

## Section I

### NBC PROLIFERATION CHALLENGES

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#### Capabilities, Intentions, and Trends

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The pace of acquisition and development efforts for NBC weapons and missiles in the volatile regions of the Middle East and Africa has remained steady during the last several years. This is dangerous because of the long history of conflict that characterizes the region. Although there has been progress in the process towards a comprehensive settlement of the Arab-Israeli dispute, other dangerous trends remain. For example, some states are focused on producing their own chemical and biological agents and ballistic missiles, seeking to become independent from foreign suppliers. As these states achieve production self-sufficiency, they, in turn, may become suppliers of NBC weapons or missiles, or related technologies, decreasing opportunities to restrain proliferation and complicates nonproliferation diplomacy. There also is a trend towards developing more advanced chemical agents and longer-range missiles, increasing the risk to U.S. and allied forces deployed to the region. Iran especially has demonstrated a commitment to developing long-range ballistic missiles, which can reach deep into neighboring countries and to Israel.

Over the last few years, several states have made significant progress producing their own weapons, including Iran, a development which could result in a greater number of suppliers, and thus increase proliferation in the future. In the absence of effective UN inspections and monitoring since 1999, Iraq may have begun to reconstitute the programs it had prior to Operation Desert Storm. Meanwhile, Syria may have begun to develop the persistent nerve agent VX to add to its existing stockpile of sarin. In Africa, with the suspension of UN sanctions against Libya, Qadhafi may be intensifying procurement efforts, and Sudan has shown a growing interest in chemical warfare.

#### IRAN

##### *Objectives, Strategies, and Resources*

Iran's national security efforts are designed to increase its influence and prestige in the Middle East and throughout the Islamic world, to deter Iraq or any other regional threats as well as to limit U.S. influence

and presence in the region, especially in the Persian Gulf. Iran recognizes that it cannot match U.S. military power and therefore seeks other asymmetric means to challenge the United States. Iran's efforts include the acquisition and development of NBC weapons and missiles and use of terrorism, which it views as a means to offset its own vulnerabilities and weaknesses. With help from Russia and North Korea, it has put particular emphasis in recent years on developing medium-range missiles.

Iran is one of the countries most active in seeking to acquire NBC- and missile-related technologies. Iran's NBC and missile programs continued in the last several years notwithstanding President Khatemi's moderation of the regime's anti-Western rhetoric. To support their development, Iran has focused its acquisition efforts mainly on Russia, China, and North Korea, and these countries remain instrumental to Iran's efforts. Iran remains intent on attaining an independent production capability for all its weapons programs and has continued to make substantial progress in that regard with its chemical, biological, and ballistic missile efforts. Iran's public display of these missiles and its July and September 2000 flight tests of the Shahab-3 reflect Tehran's intent to demonstrate its ability to project military influence throughout the region.

DoD believes spending on NBC weapons and missiles has continued to receive a high priority within Iran's defense budget during the last several years. As Iran's economy is oil-based, the price of oil will influence the extent of Iran's defense spending and consequently the amount the government can spend on military programs and related NBC and missile efforts. The defense budget is believed to be almost \$6 billion for the fiscal year ending 20 March 2001. It is expected to remain at about the same level for the next several years, or about 3 percent of Iran's GDP. Demographic, social, and political factors also affect the relative priority Iran puts on its national security spending.

##### *Nuclear Program*

Although a signatory to NPT and the CTBT, Iran also is seeking fissile material and technology for weapons development through an elaborate system of military

and civilian organizations. We believe Iran also has an organized structure dedicated to developing nuclear weapons by trying to establish the capability to produce both plutonium and highly enriched uranium. Iran claims to desire the establishment of a complete nuclear fuel cycle for its civilian energy program. In that guise, it seeks to obtain whole facilities that could be used in numerous ways in support of efforts to produce fissile material for a nuclear weapon. The potential availability of black market fissile material also might provide Iran a way to acquire the fissile material necessary for a nuclear weapon.

Iran's success in achieving a nuclear capability will depend, to a large degree, on the supply policies of

Russia and China or on Iran's successful illicit acquisition of adequate quantities of weapons-usable fissile material. Russia is continuing work on a 1,000-mega-watt power reactor at Bushehr. Although Russian officials have provided assurances that Russian cooperation with Iran will be limited to the Bushehr reactor project during the period of its construction, the United States Government is aware that a number of Russian entities are engaged in cooperation with Iran that goes beyond this project. One of Iran's primary goals is the acquisition of a heavy water-moderated, natural uranium-fueled nuclear reactor and associated facilities suitable for the production of weapons-grade plutonium. Although Bushehr will fall under IAEA safeguards, Iran is using this project to

<b>Iran: NBC Weapons and Missile Programs</b>	
<b>Nuclear</b>	<p>Seeking fissile material and related nuclear technology for weapons development, especially from sources in Russia.</p> <p>Russia is completing construction of power reactor at Bushehr and recently agreed to additional nuclear cooperation; China has pledged not to sell a key facility and other nuclear technologies.</p> <p>Acceded to the NPT and signed the CTBT.</p>
<b>Biological</b>	<p>Possesses overall infrastructure and expertise to support biological warfare program.</p> <p>Pursues contacts with Russian entities and other sources to acquire dual-use equipment and technology.</p> <p>Believed to be actively pursuing offensive biological warfare capabilities; may have small quantities of usable agent now.</p> <p>Ratified the BWC.</p>
<b>Chemical</b>	<p>Began chemical warfare program during Iran-Iraq war; employed limited amounts of agent against Iraqi troops.</p> <p>Possesses weaponized stockpile of agents; capable of agent delivery; trains military forces to operate in contaminated environment.</p> <p>Seeking to improve chemical precursor production capability.</p> <p>Ratified the CWC and made declarations.</p>
<b>Ballistic Missiles</b>	<p>Has force of SCUD B, SCUD C and Chinese-made CSS-8 SRBMs; producing SCUDs.</p> <p>Main effort is to produce Shahab-3 MRBM, based on North Korean No Dong; effort involves considerable Russian and Chinese assistance.</p> <p>Flight tested Shahab-3 in July 1998, and in July and September 2000</p> <p>Seeking to develop additional longer-range missiles, such MRBMs, IRBMs and possibly an ICBM.</p> <p>Not a member of the MTCR.</p>
<b>Other Means of Delivery Available</b>	<p>Land-, sea-, and air-launched anti-ship cruise missiles; air-launched tactical missiles; none have NBC warheads.</p> <p>Aircraft: fighters.</p> <p>Ground systems: artillery, rocket launchers.</p>

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### NBC PROLIFERATION CHALLENGES

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seek access to more sensitive nuclear technologies from Russia and to develop expertise in related nuclear technologies. Any such projects will help Iran augment its nuclear technology infrastructure, which in turn would be useful in supporting nuclear weapons research and development.

In the past, Chinese companies have been major suppliers of nuclear-related facilities and technology albeit under IAEA safeguards. China pledged in 1997 that it would not undertake any new nuclear cooperation with Iran and that it would close out its two existing projects—a small research reactor and a zirconium production facility, which will produce cladding for nuclear fuel—as soon as possible. (Neither of these two projects poses a significant proliferation concern.) China also agreed to terminate cooperation on a uranium conversion project. This project would have allowed Iran to produce uranium hexafluoride or uranium dioxide, which are the feedstock materials for the manufacture of weapons grade plutonium. In addition, China announced new export controls in June 1998 that cover the sale of dual-use nuclear equipment. China appears to be living up to its 1997 commitments.

#### ***Biological Program***

Iran has a growing biotechnology industry, significant pharmaceutical experience and the overall infrastructure to support its biological warfare program. Tehran has expanded its efforts to seek considerable dual-use biotechnical materials and expertise from entities in Russia and elsewhere, ostensibly for civilian reasons. Outside assistance is important for Iran, and it is also difficult to prevent because of the dual-use nature of the materials and equipment being sought by Iran and the many legitimate end uses for these items.

Iran's biological warfare program began during the Iran-Iraq war. Iran is believed to be pursuing offensive biological warfare capabilities and its effort may have evolved beyond agent research and development to the capability to produce small quantities of agent. Iran has ratified the BWC.

#### ***Chemical Program***

Iran has acceded to the Chemical Weapons Convention (CWC) and in a May 1998 session of the CWC Conference of the States Parties, Tehran, for the first time, acknowledged the existence of a past chemical weapons program. Iran admitted developing a chemical warfare program during the latter stages of the Iran-Iraq war as a “deterrent” against Iraq's use of chemical agents against Iran. Moreover, Tehran claimed that after the 1988 cease-fire, it “terminated” its program. However, Iran has yet to acknowledge that it, too, used chemical weapons during the Iran-Iraq War.

Nevertheless, Iran has continued its efforts to seek production technology, expertise and precursor chemicals from entities in Russia and China that could be used to create a more advanced and self-sufficient chemical warfare infrastructure. As Iran's program moves closer to self-sufficiency, the potential will increase for Iran to export dual-use chemicals and related equipment and technologies to other countries of proliferation concern.

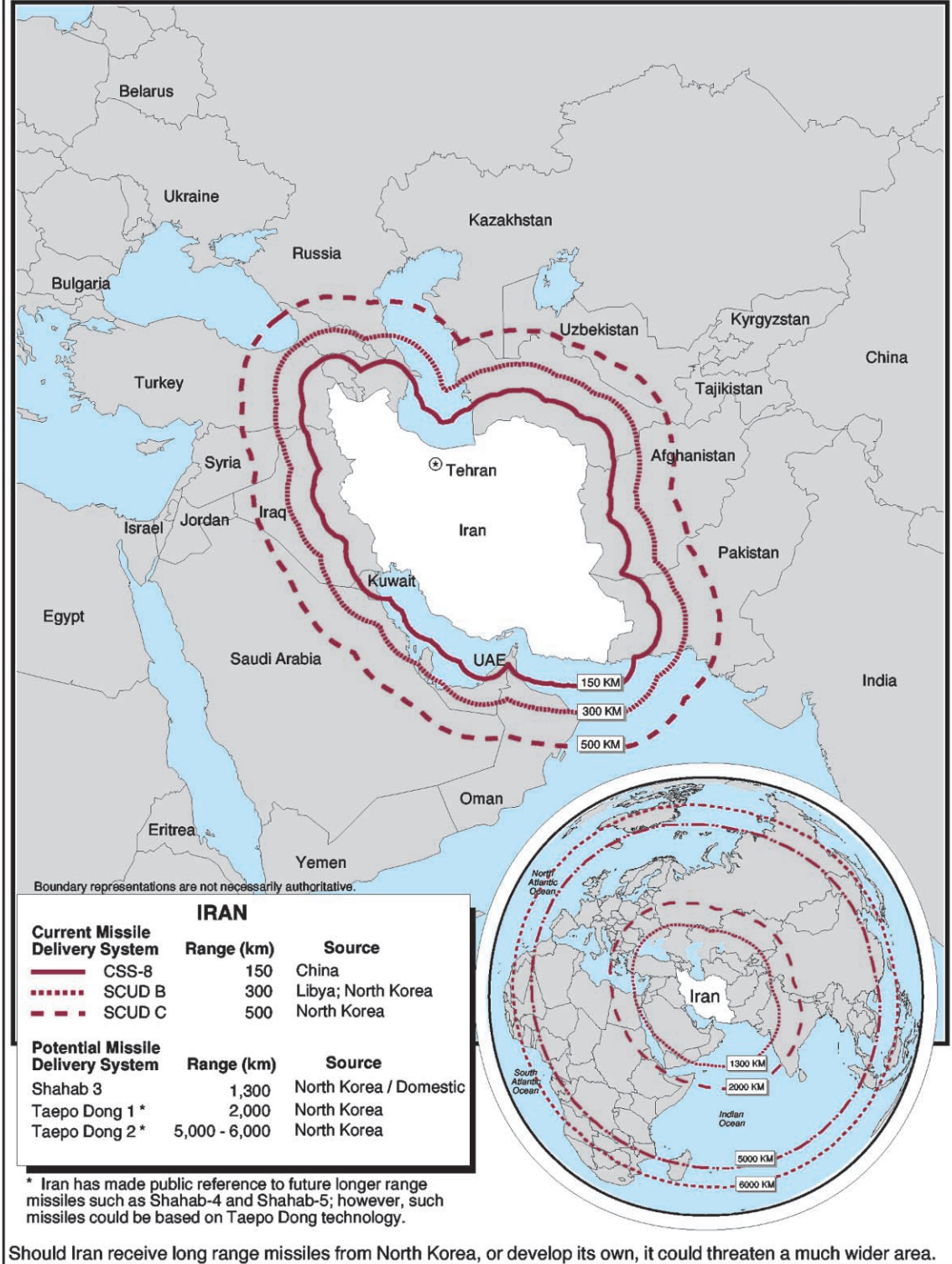
In the past, Tehran has manufactured and stockpiled blister, blood and choking chemical agents, and weaponized some of these agents into artillery shells, mortars, rockets, and aerial bombs. It also is believed to be conducting research on nerve agents. Iran could employ these agents during a future conflict in the region. Lastly, Iran's training, especially for its naval and ground forces, indicates that it is planning to operate in a contaminated environment.

#### ***Ballistic Missiles***

Iran has increased emphasis on its ballistic missile program. Currently, Iran has several hundred SCUD Bs and SCUD Cs and Chinese-made CSS-8 SRBMs. It is now producing SCUD missiles, having received production assistance from North Korea. In recent years, Russian and Chinese entities have continued to supply a wide variety of missile-related goods, technology, and expertise to Iran. Iran is striving to indigenously produce ballistic missiles and become a supplier state. Iran's recent efforts have been on the development of the 1,300-kilometer range Shahab-3



**Estimated Ranges of Current and Potential Iranian Ballistic Missiles**



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missile, which is based on the North Korean No Dong. Iran flight-tested the Shahab-3 in July 1998 and July and September 2000. At this time, Iran likely has the capability to deploy limited numbers of Shahab-3.

Iran has built and publicly displayed prototypes of this MRBM and may have achieved an emergency operational capability for it. That is, it could deploy a limited number of the missiles in an operational mode during a perceived crisis. In fact, in July 2000, just prior to the missile's second flight test, the commander of Iran's Revolutionary Guards Corps stated that Iran had formed Shahab-3 units and built launching pads for the missiles (Janes Defense Weekly). While this may overstate Iran's current capabilities, it clearly demonstrates Iran's intent.

In addition, Iran's Defense Minister publicly acknowledged the development of the Shahab-4, originally calling it a more capable ballistic missile than the Shahab-3, but later categorizing it as solely a space launch vehicle with no military applications. Iran's Defense Minister also has publicly mentioned plans for a "Shahab-5," which may be an IRBM or a space launch vehicle. Such statements, made against the backdrop of sustained cooperation with Russian, North Korean, and Chinese entities, suggest that Tehran may intend to develop and deploy a longer-range ballistic missile capability. In addition, Iran will likely continue to seek longer-range missiles and may have ICBM ambitions. It could test a space launch vehicle, which would have ICBM applications, within the next 15 years. However, if Iran purchased an ICBM from North Korea or elsewhere, further development might not be necessary.

#### ***Cruise Missiles and Other Means of Delivery***

Iran has purchased land-, sea-, and air-launched short-range cruise missiles from China; it also has a variety of foreign-made air-launched short-range tactical missiles, which are potential means of delivery for NBC weapons. Many of these systems are deployed as anti-ship weapons in or near the Persian Gulf. In the future, Iran likely will continue to focus on its anti-ship missile capabilities and may try to develop its own missiles using technology it already has as a basis for such development efforts. In addition, Tehran also could try

to purchase land attack cruise missiles to complement its ballistic missile force. However, the pace of any of these efforts will be determined by Iran's economic situation. Iran also has a variety of fighter aircraft, artillery, and rockets available as potential means of delivery for NBC weapons.

#### ***Potential as a Supplier***

Iran has put emphasis on becoming independent in the indigenous production of various military hardware, including NBC weapons and missiles. As Iran has made progress in the last few years, particularly in the areas of chemical warfare and ballistic missiles, the potential has increased for it to export some of these weapons, related technology, or expertise to other countries of proliferation concern, such as Libya or Syria.

## IRAQ

#### ***Objectives, Strategies, and Resources***

Iraq believes NBC weapons and ballistic missiles are necessary if it is to reach its goal of being the dominant power in the region. Since the end of the Gulf War, Baghdad steadfastly resisted the terms of the cease-fire agreement, which required it to cooperate with the United Nations Special Commission (UNSCOM) and the IAEA in identifying and eliminating Iraq's NBC and theater ballistic missile capabilities. Iraq's policy of deception and denial sparked numerous confrontations with UNSCOM and the IAEA over the years and culminated with the allied bombing of Iraq under Operation Desert Fox in December 1998.

Since late 1998, Baghdad has refused to allow UN inspectors into Iraq as required by UN Security Council Resolutions (UNSCRs) 687, 707, 715 and 1284. (UNSCR 1284, adopted in December 1999, established a follow-on regime to UNSCOM called the United Nations Monitoring, Verification and Inspection Commission [UNMOVIC]). As a result, there have been no UN inspections for over two years, and the automated monitoring systems installed by the UN at known and suspected Iraqi NBC and missile facilities are no longer operational. This abeyance of on-site inspections and our previous judgments about Iraqi

intentions raise concerns that Iraq may have begun such reconstitution efforts and that it will again be able to threaten its neighbors. In support of these rebuilding efforts, Iraq is known to have attempted to purchase numerous dual-use items under the guise of legitimate civil use since the end of the Gulf War.

Iraq remains largely a petroleum-based economy. Prior to the 1990 Iraqi invasion of Kuwait, Iraq's petroleum sector accounted for 61 percent of its GDP and about \$14.5 billion in exports; per capita GDP was \$2,270. UN sanctions subsequently were imposed on Iraq, and since then there has been a significant decline in Iraqi economic output. Increased illegal petroleum product exports since 1996 and crude oil exports allowed by the UN since 1997 have led to significant growth in the industrial and petroleum sectors

since 1996. However, under UNSCR 1284, Iraq can export any volume of petroleum for humanitarian needs. Nonetheless, inflation fluctuates wildly depending on supply and demand, the political situation, and regime market manipulation; inflation estimates range from 90 to almost 300 percent. While oil exports are still a dominant economic force in Iraq, Iraqi per capita GDP was reported to have dropped to \$587 by 1999. Despite these severe pressures on its economy, Saddam Hussein's government continues to devote Iraqi resources to rebuilding certain portions of its NBC weapons and missile infrastructure.

***Nuclear Program***

Iraq has ratified the NPT. Nevertheless, before the Gulf War, Iraq had a comprehensive nuclear weapons

<b>Iraq: NBC and Missile Programs</b>	
<b>Nuclear</b>	<p>Had comprehensive nuclear weapons development program prior to Operation Desert Storm. Infrastructure suffered considerable damage from Coalition bombing and IAEA dismantlement.</p> <p>Retains scientists, engineers, and nuclear weapons design information; without fissile material, would need five or more years and significant foreign assistance to rebuild program and produce nuclear devices; less time would be needed if sufficient fissile material were acquired illicitly.</p> <p>Ratified the NPT; has not signed the CTBT.</p>
<b>Biological</b>	<p>Produced and weaponized significant quantities of biological warfare agents prior to Desert Storm.</p> <p>Admitted biological warfare effort in 1995, after four years of denial; claimed to have destroyed all agents, but offered no credible proof.</p> <p>May have begun program reconstitution in absence of UN inspections and monitoring.</p> <p>Acceded to the BWC.</p>
<b>Chemical</b>	<p>Rebuilt some of its chemical production infrastructure allegedly for commercial use.</p> <p>UNSCOM discovered evidence of VX persistent nerve agent in missile warheads in 1998, despite Iraqi denials for seven years that it had not weaponized VX.</p> <p>May have begun program reconstitution in absence of UN inspections and monitoring.</p> <p>Has not signed the CWC.</p>
<b>Ballistic Missiles</b>	<p>Probably retains limited number of SCUD-variant missiles, launchers, and warheads capable of delivering biological and chemical agents. Retains significant missile production capability.</p> <p>Continues work on liquid- and solid-propellant SRBMs (150 kilometers) allowed by UNSCR 687; likely will use technical experience gained for future longer range missile development effort.</p> <p>Not a member of the MTCR.</p>
<b>Other Means of Delivery Available</b>	<p>Land-launched anti-ship cruise missiles; air-launched tactical missiles; none have NBC warheads; stockpile likely is very limited.</p> <p>Air systems: fighters, helicopters, UAVs.</p> <p>Ground systems: artillery, rockets.</p>



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development program that was focused on building an implosion-type device. The program was linked to a ballistic missile project that was the intended delivery system. From April 1991 to December 1998, Iraqi nuclear aspirations were held in check by IAEA/UNSCOM inspections and monitoring. All known weapons-grade fissile material was removed from the country. Although Iraq claims that it destroyed all of the specific equipment and facilities useful for developing nuclear weapons, it still retains sufficient skilled and experienced scientists and engineers as well as weapons design information that could allow it to restart a weapons program.

Iraq would need five or more years and key foreign assistance to rebuild the infrastructure to enrich enough material for a nuclear weapon. This period would be substantially shortened should Baghdad successfully acquire fissile material from a foreign source.

#### ***Biological Program***

Iraq's continued refusal to disclose fully the extent of its biological program suggests that Baghdad retains a biological warfare capability, despite its membership in the BWC. After four and one-half years of claiming that it had conducted only "defensive research" on biological weapons Iraq declared reluctantly, in 1995, that it had produced approximately 30,000 liters of bulk biological agents and/or filled munitions. Iraq admitted that it produced anthrax, botulinum toxins and aflatoxins and that it prepared biological agent-filled munitions, including missile warheads and aerial bombs. However, UNSCOM believed that Iraq had produced substantially greater amounts than it has admitted — three to four times greater.

Iraq also admitted that, during the Persian Gulf War, it had deployed biological agent-filled munitions to airfields and that these weapons were intended for use against Israel and coalition forces in Saudi Arabia. Iraq stated that it destroyed all of these agents and munitions in 1991, but it has provided insufficient credible evidence to support this claim.

The UN believes that Baghdad has the ability to reconstitute its biological warfare capabilities within a few weeks or months, and, in the absence of UNSCOM inspections and monitoring during 1999 and 2000, we are concerned that Baghdad again may have produced some biological warfare agents.

#### ***Chemical Program***

Since the Gulf War, Baghdad has rebuilt key portions of its industrial and chemical production infrastructure; it has not become a state party to the CWC. Some of Iraq's facilities could be converted fairly quickly to production of chemical warfare agents. Following Operation Desert Fox, Baghdad again instituted a rapid reconstruction effort on those facilities to include former dual-use chemical warfare-associated production facilities, destroyed by U.S. bombing. In 1999, Iraq may have begun installing or repairing dual-use equipment at these and other chemical warfare-related facilities. Previously, Iraq was known to have produced and stockpiled mustard, tabun, sarin, and VX, some of which likely remain hidden. It is likely that an additional quantity of various precursor chemicals also remains hidden.

In late 1998, UNSCOM reported to the UN Security Council that Iraq continued to withhold information related to its chemical program. UNSCOM cited an example where Baghdad seized from inspectors a document discovered by UNSCOM inspectors, which indicated that Iraq had not consumed as many chemical munitions during the Iran-Iraq War as had been declared previously by Baghdad. This document suggests that Iraq may have an additional 6,000 chemical munitions hidden. Similarly, UNSCOM discovery in 1998 of evidence of VX in Iraqi missile warheads showed that Iraq had lied to the international community for seven years when it repeatedly said that it had never weaponized VX.

Iraq retains the expertise, once a decision is made, to resume chemical agent production within a few weeks or months, depending on the type of agent. However, foreign assistance, whether commercial procurement of dual-use technology, key infrastructure, or other aid, will be necessary to completely restore Iraq's



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chemical agent production capabilities to pre-Desert Storm levels. Iraqi doctrine for the use of chemical weapons evolved during the Iran-Iraq War, and was fully incorporated into Iraqi offensive operations by the end of the war in 1988. During different stages of that war, Iraq used aerial bombs, artillery, rocket launchers, tactical rockets, and sprayers mounted in helicopters to deliver agents against Iranian forces. It also used chemical agents against Kurdish elements of its own civilian population in 1988.

#### ***Ballistic Missiles***

Iraq likely retains a limited number of launchers and SCUD-variant SRBMs capable of striking its neighbors, as well as the components and manufacturing means to assemble and produce others, anticipating the reestablishment of a long-range ballistic missile force sometime in the future. Baghdad likely also has warheads capable of delivering chemical or biological agents. While Iraq's missile production infrastructure was damaged during the December 1998 strikes, Iraq retains domestic expertise and sufficient infrastructure to support most missile component production, with the exception of a few critical subelements.

During 1999, Iraq continued to work on the two short-range ballistic missile systems that fall within the 150-kilometer range restriction imposed by the UN: the liquid-propellant Al Samoud and the solid-propellant Ababil-100. The Al-Samoud is essentially a scaled-down SCUD, and work on it allows Baghdad to develop technological capabilities that could be applied to a longer-range missile program. We believe that the Al Samoud missile, as designed by the Iraqis, has an inherent potential to exceed the 150-kilometers range restriction imposed under UNSCR 687. Iraqi personnel involved with pre-Desert Storm ballistic missile efforts are working on the Ababil-100 SRBM program. Once economic sanctions against Iraq are lifted, unless restricted by future UN monitoring, Baghdad probably will begin converting these efforts into longer-range missile systems. Despite the damage done to Iraq's missile infrastructure during the Gulf War, Desert Fox, and subsequent UNSCOM activities, Iraq may have ambitions for longer-range missiles, including an ICBM. Depending on the success of

acquisition efforts and degree of foreign support, it is possible that Iraq could develop and test an ICBM capable of reaching the United States by 2015.

#### ***Cruise Missiles and Other Means of Delivery***

Iraq may have a very limited stockpile of land-launched short-range anti-ship cruise missiles and air-launched short-range tactical missiles that it purchased from China and France prior to the Gulf War. These are potential means of delivery for NBC weapons. Iraq also has a variety of fighter aircraft, helicopters, artillery, and rockets available as potential means of delivery for NBC weapons, although their operational status is questionable due to the cumulative effects of the UN arms embargo. However, Iraq has continued to work on its UAV program, which involves converting L-29 jet trainer aircraft originally acquired from Eastern Europe. These modified and refurbished L-29s may be intended for the delivery of chemical or biological agents. In the future, Iraq may try to use its research and development infrastructure to produce its own UAVs and cruise missiles or, should the UN arms embargo be lifted, it could try to purchase cruise missiles.

## SYRIA

#### ***Objectives, Strategies, and Resources***

Syria's national security objectives will not likely change following the death of Hafez al Asad. These objectives include preserving the new regime of Asad's son, Bashar al Asad, regaining the entire Golan Heights, protecting Syrian territory, maintaining internal stability, and protecting Syrian interests in Lebanon. Damascus also seeks to avoid regional isolation and play a leading role in the Arab world. It has long perceived itself to be surrounded by hostile neighbors, and most of Syria's armed forces are arrayed against Israel, which it perceives to be its primary external threat. Syria has sought to avoid regional isolation by maintaining strong ties with Iran and, more recently, warming relations with Iraq.

Since the loss of its Soviet sponsor a decade ago and its inability to achieve conventional parity with Israel, Syria has increasingly relied on a strategic deterrent,

based on ballistic missiles and chemical warfare capabilities, as the ultimate guarantor of regime survival against potential regional adversaries. Syria also likely sees the development of these weapons as a cheaper alternative than trying to achieve conventional parity with Israel. As a result, Damascus has continued to develop and expand its ballistic missile and chemical weapons capabilities, and, to lesser extent, biological weapons capabilities. Syria is likely to maintain and improve these capabilities over the long term.

Syria’s total defense spending has remained relatively stable at \$1 billion in constant 1997 prices since the early 1990s. This spending represents nearly 6 percent of Syria’s GDP. While Syria has spent a small percentage on the acquisition of conventional hardware, it appears to have shifted emphasis to chemical, biological, and missile programs, which offer a more affordable alternative and receive a high budget priority.

In the past, Damascus has shown itself to be a pragmatic actor and to calculate carefully the results of its

actions; this is likely to continue under the regime of Bashar al Asad. As a result, Syria would likely refrain from using chemical or biological weapons against Israel — especially given its fear of an Israeli response with NBC weapons — unless the regime’s survival is at stake. The new regime of Bashar al Asad likely will maintain and improve Syrian missile and chemical and biological warfare capabilities.

***Nuclear Program***

Syria is not pursuing the development of nuclear weapons. However, it retains an interest in nuclear technology and has a small Chinese-supplied research reactor, which is under IAEA safeguards. In addition, in May 1999, Syria signed a broad nuclear cooperation agreement with Russia, which includes the construction of a small light-water research reactor, which will be subject to IAEA safeguards. Syria currently lacks the infrastructure and trained personnel to establish a nuclear weapons program. Syria has ratified the NPT, but has not signed the CTBT.

<b>Syria: NBC Weapons and Missile Programs</b>	
<b>Nuclear</b>	Is not pursuing the development of nuclear weapons. Ratified the NPT; has not signed the CT&T.
<b>Biological</b>	Possesses adequate biotechnical infrastructure to support limited biological warfare program. Believed to be pursuing biological agent development, but no major agent production effort likely is underway. Signed but not ratified the BWC.
<b>Chemical</b>	Possesses and is capable of delivering nerve agents; may be developing more advanced VX nerve agent. Making improvements to chemical infrastructure. Has not signed the CWC.
<b>Ballistic Missiles</b>	Maintains and is capable of using force of SCUD B, SCUD C, and SS-21 missiles. Producing SCUD Cs with North Korean assistance. Making improvements to missile production infrastructure. Not a member of the MTCR.
<b>Other Means of Delivery Available</b>	Land- and sea-launched anti-ship cruise missiles; none have NBC warheads. Aircraft: fighters, helicopters. Ground systems: artillery, rockets.



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### ***Biological Program***

Syria has signed but not ratified the BWC but nonetheless is pursuing the development of biological weapons. Syria's biotechnical infrastructure is capable of supporting limited agent development. However, the Syrians are not believed to have begun any major effort to put biological agents into weapons. Without significant foreign assistance, it is unlikely that Syria could manufacture significant amounts of biological weapons for several years.

### ***Chemical Program***

Syria is not a state party to the CWC and has had a chemical warfare program for many years, although it has never used chemical agents in a conflict. Damascus already has a stockpile of the nerve agent sarin that can be delivered by aircraft or ballistic missiles. Additionally, Syria is trying to develop the more toxic and persistent nerve agent VX. In the future, Syria can be expected to continue to improve its chemical agent production and storage infrastructure. Damascus remains dependent on foreign sources for key elements of its chemical warfare program, including precursor chemicals and key production equipment. For example, during 1999, Syria sought chemical warfare-related precursors and expertise from foreign sources.

### ***Ballistic Missiles***

Syria has a combined total of several hundred SCUD B, SCUD C and SS-21 SRBMs. Syria is believed to have chemical warheads available for a portion of its SCUD missile force. Damascus continues to acquire SCUD-related equipment and materials from Iran and North Korea, including considerable North Korean help producing SCUD Cs.

During 1999, Damascus continued to work on establishing a solid-propellant rocket motor development and production capability with help from outside sources such as Iran. In addition, foreign equipment and assistance for its liquid propellant missile program, primarily from North Korean entities but also from firms in China and Russia, have been and will continue to be essential for Syria's effort. The Syrians are laying the groundwork for a future option to develop a modern, solid-propellant SRBM. All of Syria's missiles are mobile and can reach much of

Israel and large portions of Iraq, Jordan, and Turkey from launch sites well within the country.

### ***Cruise Missiles and Other Means of Delivery***

Syria has a variety of Soviet-made land- and sea-launched short-range anti-ship cruise missiles and air-launched short-range tactical missiles, which are potential means of delivery for NBC weapons. Because of higher defense priorities, Syria probably will not try to purchase additional cruise missiles for several years. Syria also has numerous fighter aircraft, helicopters, artillery, and rockets available.

## **LIBYA**

### ***Objectives, Strategies, and Resources***

The primary objectives of Libyan leader Qadhafi have been to promote Libya as a defender of Islamic ideals against Western imperialism and to promote Pan-Arabism, and more recently, Pan-Africanism. Over the years, these goals have translated into a long history of promoting regional destabilization and terrorism. In 1992, in response to suspected Libyan involvement in the bombing of Pan American flight 103, the UN imposed sanctions on Libya. (The sanctions included an arms embargo, a ban on flights to and from Libya, a one-time freeze on Libyan government financial assets abroad, and a ban on Libyan exports of nonagricultural and nonpetroleum exports.) However, in April 1999, in response to the Libyan extradition of the two suspects to The Hague for trial, the UN suspended its sanctions. Shortly thereafter, the European Union reestablished economic relationships with Libya, and, in July 1999, Britain reestablished diplomatic relations with Libya.

Nevertheless, we believe that Qadhafi remains committed to developing or acquiring NBC weapons and improved ballistic missile capabilities. With the suspension of UN sanctions, Libya likely has increased its procurement efforts in support of its NBC weapons and missile programs. For example, in January 2000, British authorities at Gatwick Airport seized missile components from a Taiwan company that were destined for Libya; the components were labeled as auto parts. Qadhafi likely believes that these weapons will advance

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his regime’s international image and serve as deterrents against the West’s more sophisticated weapons.

Libya’s programs have made little progress in the last several years, due to a weak economy and an insufficient technological infrastructure. However, even though the programs have resulted only in limited capabilities, their use cannot be discounted because of Qadhafi’s history of unpredictability. On the other hand, during 1999, Qadhafi has taken a more moderate international stance and acted as host for the Organization of African Unity (OAU) conference in September 1999. He may be hoping that his actions will result in the permanent lifting of sanctions and an overall thaw in Libya’s relations with the West.

Libya’s economy has suffered from the cumulative effects of years of socialist-oriented policies that allocate substantial resources to grandiose industrial schemes, low worker productivity, and a weak non-petroleum industrial base. Libya does not publicly disclose its annual defense budget. Subsequent to the April 1999 suspension of UN sanctions, international petroleum prices rebounded, resulting in several billion dollars more in annual export earnings for Libya.

Such factors could permit Libya to increase military spending, with a potential increased emphasis on NBC weapons and the missile program.

**Nuclear Program**

Libya has ratified the NPT, but has not signed the CTBT and has long intended to develop or acquire nuclear weapons. Libya has made little progress, however, as its nuclear program lacks well-developed plans, expertise, consistent financial support, and adequate foreign suppliers. In the face of these difficulties, nonetheless, Libya likely will continue to try to develop a supporting infrastructure. Libya has a Soviet-supplied research reactor at Tajura that is under IAEA safeguards. The Russians may become actively involved in the modernization of the Tajura nuclear research center and, in 1999, Tripoli and Moscow resumed discussions on cooperation involving the Tajura reactor as well as a potential power reactor deal. Should this civil sector work come to fruition, Libya could gain opportunities to conduct nuclear weapons-related research and development. Libya reportedly also is trying to recruit foreign scientists and technicians to aid its program.

<b>Libya: NBC Weapons And Missile Programs</b>	
<b>Nuclear</b>	Has made little progress with long-standing goal of acquiring or developing a nuclear weapon; may be trying to recruit foreign experts to assist with effort. Ratified the NPT; has not signed the CTBT. Signed the African Nuclear Weapon Free Zone Treaty.
<b>Biological</b>	Remains in research and development stage, but may be capable of producing small quantities of agent. Ratified the BWC.
<b>Chemical</b>	Produced blister and nerve agents in 1980s at Rabta; employed chemical agents against Chadian troops in 1987; attempted to construct underground chemical agent production facility at Tarhunah. Rabta and Tarhunah believed to be inactive, although chemical program not completely abandoned. Has not signed the CWC.
<b>Ballistic Missiles</b>	Maintains aging SCUD missile force of limited operational utility. Has made only limited success with over 20-year indigenous missile production effort; may renew focus on purchasing complete ballistic missile. Not a member of the MTCR.
<b>Other Means of Delivery Available</b>	Land- and sea-launched anti-ship cruise missiles; none have NBC warheads. Aircraft: fighters, bombers, helicopters, transport planes. Ground systems: artillery, rocket launcher.

### ***Biological Program***

Libya has ratified the BWC, but has continued a biological warfare program. This program has not advanced beyond the research and development stage, although it may be capable of producing small quantities of biological agent. Libya's program has been hindered by the country's poor scientific and technological base, equipment shortages, and a lack of skilled personnel, as well as by UN sanctions in place from 1992 to 1999. Without foreign assistance and technical expertise to help Libya use available dual-use materials, the Libyan biological warfare program is not likely to make significant progress beyond its current stage. On the other hand, with the suspension of UN sanctions, Libya's ability to acquire biological-related equipment and expertise will increase.

### ***Chemical Program***

Among any of its NBC programs, Libya has made the most progress with its chemical warfare effort. However, it remains heavily dependent on foreign suppliers for precursor chemicals, mechanical and technical expertise, and chemical warfare-related equipment. From 1992 to 1999, UN sanctions continued to limit the type and amount of support Tripoli receives from abroad. However, following the suspension of UN sanctions in April 1999, Libya wasted no time in reestablishing contacts with foreign sources of expertise, parts, and precursor chemicals for its program. Clearly, Tripoli has not given up its goal of reestablishing its offensive chemical warfare ability and continues to pursue an indigenous chemical warfare production capability.

Prior to 1990, Libya produced about 100 tons of chemical agents—mustard and some nerve agent—at a chemical facility at Rabta. However, it ceased production there in 1990 due to intense international media attention and the possibility of military intervention, and fabricated a fire to make the Rabta facility appear to have been seriously damaged. Libya maintains that the facility is a pharmaceutical production plant and announced in September 1995 that it was reopening the Rabta pharmaceutical facility. Although production of chemical agents has been halted, the

Rabta facility remains part of the Libyan chemical weapons program, and future agent production cannot be ruled out.

After 1990, the Libyans shifted their efforts to trying to build a large underground chemical production facility at Tarhunah. However, the pace of activity there has slowed, probably due to increased international attention. The Libyans claim that the Tarhunah tunnel site is a part of the Great Man-made River Project, a nationwide irrigation effort. Libya has not become a state party to the CWC.

### ***Ballistic Missiles***

Despite the presence of UN sanctions from 1992 to 1999, Libya continued to seek ballistic missile-related equipment, materials, technology, and expertise. However, the sanctions restricted the flow of ballistic missile goods and technology ultimately reaching Tripoli, although Libya has successfully obtained them, most notably from Serbia and from Indian companies. Such foreign assistance is critical to maintaining Libya's missile development program and, with the 1999 suspension of UN sanctions, Libya may have greater latitude to seek foreign assistance. Libya continues to maintain an aging SCUD missile force, although the missiles likely suffer from poor maintenance and their operational status is questionable.

Libya has tried, with limited success, to develop its own indigenous missile, and to extend the range of its aging SCUD force for many years under the Al Fatah and other missile programs. These indigenous programs are heavily dependent on foreign support and remain in the testing phase. Similarly, Libya's SCUD modification efforts also have shown little progress despite some foreign assistance. Tripoli also is interested in a longer-range missile, such as the North Korean No Dong MRBM, or a similarly capable system, which it may pursue in light of the suspended UN sanctions. Should Libya succeed with its effort to purchase or perhaps develop such a missile, the missile could threaten Egypt, Israel, NATO countries in southern Europe and U.S. forces in the Mediterranean region.

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### ***Cruise Missiles and Other Means of Delivery***

Libya has land- and sea-launched short-range anti-ship cruise missiles that it purchased from Soviet and European sources, which are potential means of delivery for NBC weapons. Many of the systems are old and likely are suffering from maintenance problems. In the future, while Libya likely will continue to focus on its anti-ship missile capabilities, it may try to purchase land attack cruise missiles. Libya also has a variety of fighter aircraft, some bombers, helicopters, artillery, and rockets available. Libya used transport aircraft in its attempt to deliver chemical agents against Chadian troops in 1987.

## **SUDAN**

### ***Objectives, Strategies, and Resources***

Sudan likely will remain beset with civil war, at least in the south, for the next year. Recent political and diplomatic actions in Khartoum indicate that the National Congress Party (NCP) is attempting to moderate and change its public image. Nonetheless, this has created no momentum towards peace. President Bashir had been locked in an internal struggle with former NCP ideologue Turabi, who is now the head of a second, competing political party. In December 1999, Bashir moved against Turabi, removing him as Secretary General of the NCP. Bashir is concentrating on consolidating power, while his supporters believe the course he is setting for Sudan — breaking out of regional and international isolation and undercutting the effectiveness of southern and northern armed opposition — most likely will enable the NCP to remain the dominant political force in the country.

Even with Sudan's new political direction and increasingly savvy dealings with the international community, it is unlikely that cosmetic reforms will bring an end to the country's southern rebellion. Sudan's internal conflict will continue to destabilize the region due to the resulting humanitarian crisis and to the varying degrees of support for the rebels provided by bordering states.

### ***Chemical Program***

Sudan has been interested in acquiring a chemical warfare capability since the 1980s and has sought assistance from a number of countries with chemical warfare programs. We believe that Iraq, in particular, has provided technical expertise to Khartoum. In addition, the finding of a known VX precursor chemical near a pharmaceutical facility in Khartoum suggests that Sudan may be pursuing a more advanced chemical warfare capability. Sudan acceded to the CWC in 1999, although allegations of Sudanese chemical warfare use against rebels in southern Sudan have persisted. These, and prior allegations of chemical warfare use, have not been confirmed. Further, Khartoum's desire to present a more moderate image and alleviate its international isolation will cause Sudan to proceed with its chemical warfare program with caution.

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### **Conclusion**

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Several states in the Middle East and Africa remain committed to the development or acquisition of NBC weapons and missile delivery systems. During the last few years, some of these states have made significant progress towards an independent production capability. As these states achieve production self-sufficiency, they, in turn, may become suppliers of NBC weapons or missiles, or related technologies, decreasing opportunities for effective counter-proliferation and complicating arms control diplomacy. In the Middle East, while some tensions have been reduced by progress in the peace process, the region as a whole remains volatile with a long history of conflict. This volatility increases the chances that some of these dangerous weapons will be used should a new conflict occur in the region, threatening key U.S. interests and putting U.S. and allied military forces at risk. Many, but not all, states have ratified key arms control regimes and treaties, but adherence is questionable in some cases, and some countries have denial and deception programs to conceal their efforts.

In the Middle East, we believe that Iran's actions, within the last year or so, demonstrate that it remains intent on developing or acquiring NBC weapons and missiles as part of a strategy to increase its influence in



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the region and beyond. These actions include substantial progress, especially in the areas of chemical warfare and ballistic missiles. Although Iraq remains under UN sanctions, there have been no UN inspections since 1999, and Iraq may have begun to reconstitute its NBC weapons and missiles programs, which again could become a threat to Iraq's neighbors in the region. Syria is improving its chemical warfare program and could deliver chemical agents with missiles.

In Africa, while Libya's progress had been slowed by UN sanctions in the past, now that these sanctions have been suspended, Libya may renew procurement activity to support its NBC weapons and missile programs. Further, as long as Qadhafi remains in power, we will be concerned about Libya's efforts. Lastly, Sudan's interest in chemical warfare, and Khartoum's links to Iraq and Usama Bin Laden, will remain a cause for concern.