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## NUCLEAR THREAT PERCEPTIONS AND NONPROLIFERATION RESPONSES: A COMPARATIVE ANALYSIS

In the wake of the failure of the 2005 NPT Review Conference, it is apparent that NPT States parties have widely divergent views about the health of the Treaty, its relevance to contemporary nuclear challenges, and the feasibility, desirability, and urgency of modifying and/or supplementing what has long been the principal legal foundation for the international nonproliferation regime. It is commonplace and largely correct to ascribe these differences in national perspectives to divergent threat perceptions. Threat perceptions, which are subjective, are often viewed as the primary factor motivating states' policy choices. There is also often an important symbolic and political linkage between perceived threats and proposed solutions. It is thus of critical importance to take stock of the proliferation threat perceptions held by those states which play a significant role in the global nonproliferation regime. This kind of analysis could be particularly useful in the aftermath of the disappointing 2005 NPT Review Conference, since it might help to identify issues on which a convergence of views, if not consensus, might be generated, as well as highlighting those issues for which it will prove difficult to gain support for collective action.

This study represents a "first cut" at such an analysis. A group of nonproliferation specialists at the Center for Nonproliferation Studies have collaborated to produce an assessment of the proliferation threat perceptions and nonproliferation strategies of 16 countries that traditionally have played a significant role in nuclear politics. The countries include several nuclear weapon states (the United States, Russia, China), a number of non-nuclear weapon states with advanced nuclear power industries (Germany, Japan, South Korea, Spain), members of the New Agenda Coalition (Brazil, Egypt, South Africa, Sweden), the Non-Aligned Movement (Indonesia, Iran)<sup>2</sup>, and the three de facto nuclear weapon states (India, Israel, Pakistan). The assessments are informed by a careful examination of both official statements and actual behavior by the 16 states under review and by extended consultations with officials, journalists, and analysts from the countries in question. Prevailing national perceptions of the intensity of a range of proliferation threats were estimated using a simple "low-moderate-high" scale. Using a similar approach, country preferences for a range of nonproliferation strategies also were estimated along a similar scale. While this index is simple and does not capture the full complexity of many proliferation challenges and nonproliferation strategies, it is nonetheless useful in producing a broad-brush picture of how countries view both proliferation threats and the means of addressing them.

Although this approach may miss many subtleties in national politics and policies, it has the virtue of making explicit and amenable to debate many assumptions that otherwise would not be apparent. It also may prove useful for getting a rough fix on which proliferation threats and nonproliferation strategies have broad support among a range of countries, and which are the subject of greater controversy. The overall picture thus produced may also help in identifying



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possible coalitions and strategies for dealing with specific proliferation challenges, which might otherwise be overlooked.

## NUCLEAR THREAT PERCEPTIONS

### National Threats

Table 1 provides a summary of CNS estimates of prevailing national nuclear threat perceptions. As might be expected, the summary table reveals that for the countries surveyed there is not complete agreement on which individual states constitute the greatest nuclear proliferation threat. Some interesting patterns, however, emerge.

Table 1. National Threats<sup>3</sup>

	<b>China</b>	<b>DPRK</b>	<b>India</b>	<b>Iran</b>	<b>Israel</b>	<b>Japan</b>	<b>Pakistan</b>
<b>Brazil</b>	Low	Low	Low	Low	Low	Low	Low
<b>China</b>	N/A	Moderate	Moderate	Moderate	Low	High	Low
<b>Egypt</b>	Low	Low	Low	High	High	Low	Moderate
<b>Germany</b>	Low	High	Low	High	Moderate	Low	Moderate
<b>India</b>	Moderate	Low	N/A	Low	Low	Low	High
<b>Indonesia</b>	Moderate	Moderate	Moderate	Moderate	Low	Low	Moderate
<b>Iran</b>	Low	Low	Low	N/A	High	Low	Low-Moderate
<b>Israel</b>	Moderate	High	Low	High	N/A	Low	High
<b>Japan</b>	Moderate	High	Low	Moderate	Low	N/A	Moderate
<b>Pakistan</b>	Low	Low	High	Low	Low	Low	N/A
<b>ROK</b>	Low-Moderate	Moderate-High	Low	Moderate	Low	Moderate	Moderate
<b>Russia</b>	High	Moderate	Low	Moderate	Moderate	Low-Moderate	High
<b>Spain</b>	Low-Moderate	High	Low-Moderate	High	Moderate-High	Low	Moderate
<b>South Africa</b>	Low	Low	Low	Low	Low	Low	Low
<b>Sweden</b>	Low	High	Low	High	Moderate	Low	Moderate
<b>United States</b>	Moderate	High	Moderate	High	Low	Low	Moderate

For almost all states there is a close correspondence between their rankings of the nuclear proliferation threats posed by Iran and North Korea. Those that saw North Korea as a low threat also tended to discount the threat posed by Iran, while those that regarded the threat of North

Korea to be moderate or high tended to ascribe a similar proliferation threat to Iran. The principal exception to this parallelism is Egypt, which perceived Iran to constitute a high nuclear threat, while attaching a much lower danger to the nuclear challenge posed by North Korea.

Also noteworthy is the fact that all of the *de jure* nuclear weapons states surveyed agree that North Korea and Iran present a moderate or high nuclear threat. On the surface, at least, this convergence of threat perceptions would appear to create the basis for these states undertaking common action to address the proliferation challenges posed by North Korea and Iran. To the extent that France and the United Kingdom also share these perspectives—a reasonable assumption although not one examined in the study—one could imagine the P-5 seeking to adopt a joint position on North Korea and Iran. However, the difficulties in achieving cooperation among the P-5 on this issue were illustrated at the 2005 NPT Review Conference (RevCon) where disagreements over disarmament issues prevented the adoption of a joint statement at the conference. Nevertheless, the P-5 appear to agree on a approach that identifies the Six Party Talks as the appropriate vehicle for resolving the North Korean nuclear challenge, an orientation shared by Japan and South Korea.

The comparative threat assessments, however, also point to the divergence of views between the NWS and key representatives of the New Agenda Coalition and NAM (as well as to disagreements within those political groupings) on the issue of country specific threats. For example, Brazil and South Africa are inclined to treat the nuclear threats posed by all of the seven countries examined in our survey as low, while fellow NAC members Sweden and Egypt perceive the threat of Iran to be high (Sweden also regards the nuclear threat of North Korea to be high, while Egypt attaches a much lower value to that threat). Similarly divergent views about the threats posed by Iran and North Korea exist among NAM stalwarts Indonesia, South Africa, Egypt, and Iran. These differences in threat perceptions within NAC and NAM and between these political groupings and the NWS contributed to the failure of the 2005 NPT Review Conference to find consensus language on issues related to North Korea and Iran.

Among the countries surveyed, there are no other individual states that attract such widespread concern as North Korea and Iran. Most other states are regarded as threats only by their regional rivals. Israel, for example, is regarded as a high-level threat by Iran and Egypt, and China is viewed as a moderate or high-level threat by Russia, India, Japan, and the United States. Given the lack of widespread convergence of views regarding these country-specific threats, it is unlikely that broad multilateral action will be undertaken to address these regional security concerns.

## Nuclear Terrorism

Despite the intense media and government focus in the United States on the dangers of nuclear terrorism, much of the rest of the world does not share this sense of urgency. For purposes of this study, nuclear terrorism is defined as having four aspects—use of radiation dispersal devices (RDDs), sabotage of or attacks on nuclear facilities, manufacture and use of improvised nuclear devices, and theft and use of an intact nuclear weapon.<sup>4</sup> The Russian Federation appears to be the only other state with a comparable level of concern about some dimensions of the nuclear terrorism challenge, and even the United States and Russia tend to be dismissive of one or more forms of nuclear terrorism involving the actual detonation of a nuclear explosive.

Surveying national perspectives on the four principal types of nuclear terrorism, very few states rate these threats as “high.” On RDDs or “dirty bombs,” as they are known in the press, only the United States and Russia regard this threat as high, while seven states rate it as low. In the sample, only Spain and Iran perceive the threat of sabotage of or attack on nuclear facilities as high, and Iran presumably has in mind attacks by the United States or Israel. The possibility of terrorists building an improvised nuclear device is rated as low by ten of the states surveyed, and is not considered “high” by any state, including the United States and Russia. Only five of the states surveyed rate the threat of theft and use of intact nuclear weapons (most likely tactical nuclear weapons) as “high” or “moderate,” although a lack of



clarity regarding the definition of the term probably accounts for the designation of the “low” ranking for several states in Asia.

*Table 2. The Threat of Nuclear Terrorism*

	<b>RDDs</b>	<b>Sabotage of Nuclear Facilities</b>	<b>Improvised Nuclear Device</b>	<b>Tactical Nuclear Weapons</b>
<b>Brazil</b>	Low	Low	Low	Low
<b>China</b>	Low	Low	Low	Low
<b>Egypt</b>	Low	Low	Low	Low
<b>Germany</b>	Moderate	Moderate	Moderate	High
<b>India</b>	Moderate	Moderate	Low	Low
<b>Indonesia</b>	Moderate	Low	Low-Moderate	Low
<b>Iran</b>	Low	High	Low	High
<b>Israel</b>	Low	Low	Low	Low
<b>Japan</b>	Moderate	Moderate	Moderate	Moderate
<b>Pakistan</b>	Low	Low	Low	Low
<b>ROK</b>	Low-Moderate	Moderate	Low	Low
<b>Russia</b>	High	Moderate-High	Low	Low
<b>Spain</b>	Moderate	High	Moderate	Moderate
<b>South Africa</b>	Low	Low	Low	Low
<b>Sweden</b>	Moderate	Moderate	Moderate-High	High
<b>United States</b>	High	Moderate	Moderate	Low

In general, the United States, some of its allies, and Russia are most worried about nuclear terrorism. The NAM countries—with the partial exception of Indonesia—are inclined to attach little concern to the threat, and only Sweden among the NAC countries surveyed identifies any of the four facets of nuclear terrorism as a high priority threat.

Probably the most counter-intuitive finding from the survey is the low priority given to the threat of theft and use of intact “non-strategic” or tactical nuclear weapons by the representatives from NAC in our sample. NAC has been in the forefront in a number of international fora, including the First Committee and the NPT Review Process, in identifying the need to take further practical steps to reduce the threats posed by non-strategic nuclear weapons, but among the four NAC states in our survey, only Sweden appears to view the threat of tactical nuclear weapons as “high.” This apparent disconnect between NAC initiatives and threat perceptions probably is due to the sample of NAC countries in our survey (in particular, the omission of New Zealand and Ireland), the exceptionally high priority attached to the issue by Sweden, and the political tradeoffs among NAC states in the formulation of NAC’s initiatives.

Notwithstanding the lack of widespread agreement on any specific form of nuclear terrorism as a high-level threat, the general issue of nuclear terrorism does not generate major political opposition as do a number of country-specific threats. Most states appear to accept the premise that non-states actors constitute an emerging threat to international peace and security even if they do not yet directly threaten their own security. As such, they tend to be willing to defer to those states, including the majority of the NWS, which emphasize the need to take immediate action in multilateral fora, including the UN Security Council, the International Atomic Energy Agency, and the NPT Review Process.

An objective observer might argue that the greatest nuclear terrorist threats pertain to the possible acquisition and use by non-state actors of improvised or intact nuclear weapons. The more widespread dissemination of radioactive sources and nuclear power facilities, however, probably makes it easier to forge broad collective action to counter the dangers of RDDs and nuclear sabotage. The most difficult nuclear threat to tackle is apt to be that of tactical nuclear weapons since the two countries possessing most of the global stocks of these weapons—Russia and the United States—not only discount their danger but are actively opposed to most initiatives designed to reduce their threat.

### **Nuclear Leakage from the NIS**

Interestingly, nuclear leakage from the Newly Independent States (NIS) appears to attract more concern from a broader group of states than nuclear terrorism. Nuclear material trafficking, for example, is cited as a high or moderate concern by 11 countries, with five of those rating it as “high.” Braindrain is viewed as a moderate or high concern by 10 states. Russia itself also recognizes that nuclear leakage is a threat, although it generally tends to downplay its significance in public. It is noteworthy that a number of regional powers, such as Germany, Egypt, Israel, South Korea, and Japan, view the threat of braindrain from the NIS as at least “moderate.” These countries all fear that black-market Russian nuclear expertise will foster proliferation in their neighborhoods. For reasons that are unclear, these states tend to see nuclear material leakage as a similar, but lesser threat.

The countries that share a common threat perception on the issue of nuclear leakage tend to be the allies of the United States. A number of non-aligned countries (e.g., Indonesia and Iran) and some members of the New Agenda Coalition (South Africa and Brazil), do not view this threat as a high priority. While some countries, such as Iran, cynically may hope to benefit from nuclear leakage, most others appear sincere in their belief that this threat is not a top priority. As a result, it may be difficult to generate strong collective action in the context of the NPT on these issues. But a robust coalition of the willing seems achievable, particularly on braindrain, which many countries see as a threat not only in terms of nuclear proliferation, but also in terms of spreading CBW and missile know-how.

### **Other Perceived Threats**

Islamic fundamentalism stands out as a threat recognized as serious by almost all the countries surveyed. Only Brazil and Iran did not consider it to constitute either a moderate or high priority threat (and even Iran was concerned with the threat from al Qa’ida). Nine states (China, Egypt, Germany, Israel, Japan, Russia, Spain, Sweden, and the United States) were identified as placing the threat at a high level.

However, many states do not appear to link Islamic fundamentalism with nuclear terrorism or perhaps even with nuclear proliferation more broadly. Many of the states that view Islamic fundamentalism as a moderate threat, such as Indonesia, South Africa, and India, probably perceive the threat in terms of conventional terrorism and insurgency, rather than as a nuclear-related issue. As a result, while many states may view Islamic fundamentalism as a significant threat, there appears to be much less agreement on the nature of that threat and its relationship to nuclear terrorism or proliferation.



Table 3. Other Perceived Threats

	Vertical Proliferation	Linkage to BW and CW Threats	Defections from the NPT	Failure to Implement INPT Obligations	Failed States	Islamic Fundamentalism
<b>Brazil</b>	Moderate	Moderate	Moderate	Moderate	Low	Low
<b>China</b>	High	Moderate	High	Moderate	Moderate	High
<b>Egypt</b>	High	Low-Moderate	Moderate	High	High	High
<b>Germany</b>	High	Moderate	Moderate	High	Moderate	High
<b>India</b>	Moderate	Moderate	Moderate	High	Moderate	Moderate
<b>Indonesia</b>	High	Moderate	Moderate	Moderate-High	Low	Moderate
<b>Iran</b>	High	High	Moderate	Moderate	High	Low (except al-Qa`ida)
<b>Israel</b>	High	Moderate-High	High	High	High	High
<b>Japan</b>	High	Moderate	High	High	Moderate	High
<b>Pakistan</b>	High	Low	Low	High	Low	Moderate
<b>ROK</b>	Low-Moderate	Moderate	Low-Moderate	Low	Moderate-High	Low-Moderate
<b>Russia</b>	Moderate	Low	Low-Moderate	Low-Moderate	Moderate	High
<b>Spain</b>	Moderate	Moderate	Moderate	Moderate-High	Moderate	High
<b>South Africa</b>	Moderate	Moderate	Moderate	Moderate	Low	Moderate
<b>Sweden</b>	High	Moderate	Moderate	High	Moderate	High
<b>United States</b>	Low	Low	Low-Moderate	High	Moderate	High

Vertical proliferation is another threat that is viewed by almost all the states surveyed as of either moderate or high concern. In fact, 10 states (China, Egypt, Germany, Indonesia, Iran, Israel, Japan, Pakistan, Spain, and Sweden) rate vertical proliferation as a high priority threat. It is particularly noteworthy that the United States stands alone among the countries surveyed in attaching little importance to vertical proliferation (South Korea was judged to have a low-moderate level of concern with this issue). Of all the threats surveyed in this analysis, this is the one on which the United States is most isolated. Even many close U.S. allies, such as Germany and Japan, view vertical proliferation as a serious danger. The two other *de jure* nuclear weapon states surveyed, China and Russia, also view it as an issue of high and moderate concern respectively, and therefore are unlikely to side with the United States when this topic is addressed in the context of the NPT. In contrast to many of the threats analyzed above, it is also an issue on which the views of the NAC and NAM countries converge, although not per-

fectly. Given the widespread consensus on the issue, it is an obvious one on which to seek collective action in the framework of the NPT notwithstanding the dissenting U.S. position.

An unusual grouping of states express concern about “failed states”—that is those states which lack the capacity to adequately control their national territory and resources, making them sources of instability, terrorism, and possible collapse. On the one hand, the threat is perceived to be moderate to high by the United States and its allies, the other NWS, as well as by Egypt and India. Although many of the non-aligned and New Agenda Coalition countries view this threat as low, several states in both political groupings have contrary perspectives, apparently driven principally by regional security considerations. Given the substantial divergence of views on the generic threat posed by failed states, it is not apparent that collective remedial action will be easy to achieve. The prospect, however, may be more promising with respect to specific states.

There is concern among most of the countries surveyed about defections from the NPT. Only Pakistan (a non NPT-party), rates this threat as “low,” while the two other NPT outliers—India and Israel, view the threat of defections as “moderate” and “high,” respectively. Significantly, however, neither the United States nor Russia currently appear to regard the threat of NPT defections to be of major concern, which in the case of the United States may be a commentary on the diminished nonproliferation value the current administration attaches to the NPT. Most other countries rate the threat as moderate, the exceptions being some states in Northeast Asia (Japan, China) which fear the proliferation consequences of North Korea’s announced withdrawal from the NPT, and the Middle East where countries such as Egypt and Israel worry about the proliferation consequences of Iran’s possible withdrawal from the treaty.

The considerable degree of shared threat perceptions related to NPT defections led some observers to suggest that the NPT states parties would take collective action on this issue at the 2005 NPT Review Conference. That prediction proved incorrect. Although there was considerable discussion at the RevCon about how to interpret and implement Article X of the Treaty, which deals with the withdrawal provisions, no agreement was reached, and states parties remained very divided on the best means to tackle the problem. Many states are opposed to reinterpreting the Treaty so as to restrict further their right to withdraw or to penalize them for withdrawal. Nevertheless, further discussions on the subject may lead to a narrowing of differences about how to reduce the incentives for states to exploit Article IV of the NPT on peaceful use of nuclear energy to achieve a near-nuclear weapon status before declaring their intention to withdraw.

There is widespread concern among the states surveyed about the failure of states parties to implement their NPT obligations, although states vary widely in their assessment of which obligations are not being implemented. For example, those states which are most concerned about the nuclear threats posed by North Korea and Iran also are particularly worried about the failure of those two states to comply with their safeguards obligations. A number of other countries, however, are equally if not more concerned by what they regard to be the failure of the NWS to honor their Article VI disarmament commitments. For these states, concern about NPT compliance tends to correlate highly with threat perceptions about vertical proliferation. Germany, Japan, and Sweden are unusual among the countries in the survey in sharing especially high perceptions of threat related to both the failure of NNWS states to implement their nonproliferation obligations and NWS to honor their disarmament commitments. Not surprisingly, these divisions were again on display during the 2005 NPT RevCon, although they tended to be overshadowed by divisions and discord within the traditional political groupings.<sup>5</sup>

## PREFERRED STRATEGIES FOR ADDRESSING PROLIFERATION CHALLENGES

Just as national perspectives on nuclear proliferation threats vary, so do national views on preferred means to counter proliferation challenges.

Support for the NPT, especially at the rhetorical level, remains very high among the countries surveyed. Only Pakistan and India, non-signatories, attached a low priority to the NPT.



**Table 4. Preferred Nonproliferation Strategies: Arms Control/Disarmament**

	NPT	13 Practical Steps	CTBT	NSG	IAEA Safeguards	Additional Protocol	FMCT	UNSCR 1540	PSI	Sanctions	Export Controls	Counter-proliferation	Arms Transfers	Time-bound Nuclear Disarmament
<b>Brazil</b>	High	High	Moderate	Moderate	High	Low-Moderate	Moderate	Moderate	Low	Moderate	Moderate	Low	Low	Moderate-High
<b>China</b>	High	High	Moderate	Moderate	High	High	Moderate	Moderate-High	Low	Low	High	Low	Low	Low
<b>Egypt</b>	High	High	Moderate	Low	High	Moderate	Moderate	Low	Low	Low	Low	Low	High	High
<b>Germany</b>	High	High	High	High	High	High	High	High	Moderate	Low	High	Low	Low	Low
<b>India</b>	Low	?	Low	Moderate	Moderate	Moderate	Low	High	Moderate	Low	Moderate	Low	Moderate	Moderate-High
<b>Indonesia</b>	High	High	Moderate	Low	High	Moderate	High	Low	Low	Moderate	Low	Low	Low	High
<b>Iran</b>	High	High	Moderate	Low	Moderate	Moderate	Moderate	Low	Low	Low	Low	Low	Moderate	Moderate-High
<b>Israel</b>	Moderate	Low	Low	Low	Low-Moderate	Low-Moderate	Low	High	High	High	High	High	Moderate	Moderate-Low
<b>Japan</b>	High	High	High	High	High	High	High	High	Moderate	Low	High	Low	Low	Moderate
<b>Pakistan</b>	Low	?	High	Low	High	Low	Moderate	Low	Low	Low	Moderate	Low	High	High
<b>ROK</b>	High	Moderate-High	Moderate-High	Moderate-High	High	High	Moderate	Moderate	Low-Moderate	Low	Moderate-High	Moderate-Low-Moderate	N/A	Low
<b>Russia</b>	High	Low	Moderate	Low-Moderate	High	Moderate-High	Moderate	Moderate	Moderate	Low	Moderate	Low	Low	Low
<b>Spain</b>	High	High	High	High	High	High	High	High	Moderate	Low	High	Low	Low	Low
<b>South Africa</b>	Moderate	High	Moderate	Moderate	High	High	High	Moderate	Low	Moderate	High	Low	Low	Moderate
<b>Sweden</b>	High	High	High	High	High	High	High	High	Moderate	Low	High	Low	Low	Moderate
<b>United States</b>	High	Low	Low	High	High	High	Low-Moderate	Moderate	High	High	High	High	Moderate	Moderate-Low



However, there is little agreement about what elements of the treaty need strengthening (disarmament or nonproliferation, for example), and little consensus about what concrete steps should be taken to strengthen it.

As indicated in Table 4, there is a great deal of divergence in the views of the various states on most nonproliferation measures. One of the most significant new nonproliferation initiatives is UN Security Council Resolution 1540, which directs all states to adopt and enforce effective laws to prohibit any non-state actor to manufacture, acquire, possess, develop, transport, transfer or use nuclear, chemical, or biological weapons and means of delivery. The resolution further directs all states to develop and maintain appropriate physical protection and accounting measures over these weapons of mass destruction and related materials, as well as appropriate effective border controls to detect, deter, prevent, and combat illicit trafficking in such items. While Resolution 1540 demonstrates that consensus—at least in the Security Council—can be achieved for new proliferation initiatives when there is strong political will on the part of the P-5, the extent to which 1540 will be implemented remains unclear, given the lack of priority attached to the issue by some states, the lack of resources readily available for implementation by many others, and reservations by a number of states, including some close allies of the United States, about the appropriate role for the Security Council in “legislating” nonproliferation measures. In this survey, seven states attach high priority to 1540, five view it as a moderate priority, and three members of NAM (Egypt, Indonesia, and Iran) regard it as a low-and-inappropriate-approach. Although Pakistan did not block consensus on the resolution during the Security Council debate, it also expressed major reservations about the measure and initially was not enthusiastic about its implementation. More recently, however, most states, including Pakistan, appear to have accommodated themselves to the resolution and even to the idea of extending the duration of the UN committee established by the resolution to monitor its implementation.



*Table 5. The Role of Nuclear-Weapon-Free Zones*

	<b>NWFZ</b>
<b>Brazil</b>	Moderate
<b>China</b>	High
<b>Egypt</b>	High
<b>Germany</b>	High
<b>India</b>	Low
<b>Indonesia</b>	Moderate
<b>Iran</b>	High
<b>Israel</b>	Low
<b>Japan</b>	High
<b>Pakistan</b>	Moderate
<b>ROK</b>	Moderate
<b>Russia</b>	Low-Moderate
<b>Spain</b>	High
<b>South Africa</b>	Moderate
<b>Sweden</b>	High
<b>United States</b>	Moderate

The signing on September 8, 2006 by the Central Asian states (Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan, and Uzbekistan) of a treaty establishing a nuclear-weapon-free zone (NWFZ) in Central Asia is indicative of the disarmament and nonproliferation potential of NWFZ. In general, there is strong support for the NWFZ concept among the states surveyed and across most of the political groupings. Seven states were identified as attaching a high priority to NWFZ, and another six were viewed as regarding the creation of NWFZ as a moderate priority. Although all NWS profess to support the concept of NWFZ at the declaratory level, in practice they have great difficulty in finding a NWFZ they like. A key question, for which the survey does not provide a clear answer, is the extent to which the generally high level of support for the NWFZ concept can be translated into concrete action, such as the creation of additional NWFZ and the conclusion of their protocols by the NWS. The behavior of the NWS with respect to the recently concluded Central Asian NWFZ is likely to prove to be an important test case.

Security assurances represent another related but more divisive issue. A long standing divide has split the non-nuclear weapon states, which want legally binding negative security assurances, from most of the nuclear weapon states, which generally are unwilling to give them other than in the context of protocols to NWFZ. The United States, for example, regards negative security assurances as a low priority, although many of its non-nuclear allies, such as Germany, Japan, and Spain regard them as important.

Most of the New Agenda Coalition countries in our sample (Egypt, Sweden, and South Africa) also regard negative security assurances as an important nonproliferation approach, as does most of the NAM, exemplified in this study by Indonesia. China, interestingly, still maintains a public posture in which negative security assurances are a pillar of its nonproliferation policy. There are some indications, however, of significant internal debate about this issue and there is increasing public criticism of the policy under circumstances in which Taiwan might initiate a strike at targets on the Chinese mainland. Although a number of states, including South Africa, are apt to emphasize tough language on negatives security assurances in the context of the NPT review process, they have traditionally met with strong opposition from the NWS. Reflecting this division, no progress was made on this issue at the 2005 NPT RevCon. The issue of positive security assurances tends to be less contentious, although there is no convergence of views among the states surveyed. It is likely that some NWS, such as the United States, will continue to offer positive security assurances to its close allies whether or not the approach is blessed by other states.

Recent revelations about the Iranian, Libyan and North Korean nuclear programs have led to renewed calls to find technical fixes to proliferation challenges, such as alternative fuel cycles, conversion of research reactors to low-enriched uranium (LEU); consolidation and/or elimination of highly-enriched uranium (HEU), and long-term disposition of plutonium. Although several states surveyed are enthusiastic about the potential for technical approaches to solve major proliferation problems, they represent a clear minority perspective. Alternative fuel cycles and the introduction of new proliferation-resistant reactors, for example, are a high priority mainly for Russia. Other countries, although not typically opposing the concept, either tend not to attach much importance to the approach or to regard it as not particularly promising. As a consequence, although there has been considerable interest in and activity at the IAEA championed by Russia, steps forward are likely to be taken mainly by individual countries or small groupings of them.

Because few states actively oppose the initiative to eliminate HEU—mainly those outside of the survey which regard their HEU stocks as bargaining chips on a variety of other issues—it may be possible to create relatively broad coalitions in support of this initiative as long as the United States or another country provides political leadership and most of the resources needed for conversion and consolidation/elimination. This potential was illustrated at the 2005 NPT RevCon where broad support was generated for an initiative to combat nuclear terrorism by eliminating HEU in the civilian nuclear sector. This initiative, conceived by Kyrgyzstan and Norway, and with useful input from Austria, Canada, Germany, Greece, Japan, Sweden, and the United States, identifies HEU as the likely material of choice for a non-state actor intent

upon constructing a crude nuclear explosive device, and encourages all countries to minimize the use of and commerce in HEU for civilian purposes with the goal of total elimination of HEU in the civilian sector as soon as technically feasible.<sup>6</sup>

*Table 6. Preferred Nonproliferation Strategies: Technical Fixes*

	<b>Alternative Fuel Cycles</b>	<b>Research Reactor Conversion</b>	<b>Plutonium Disposition</b>	<b>HEU Consolidation/ Elimination/GTRI</b>
<b>Brazil</b>	Low	Low	Low	Low
<b>China</b>	Low	Low	Low	Low
<b>Egypt</b>	Low	Low	Low	Low
<b>Germany</b>	Moderate	Moderate-High (as long as not domestic reactor)	High	Moderate
<b>India</b>	Low	Low	Low	Low
<b>Indonesia</b>	Low	Moderate	Low	Low-Moderate
<b>Iran</b>	Low	Low	Low	Low
<b>Israel</b>	Low	Low	Low	Low
<b>Japan</b>	Moderate	Moderate	High	Moderate
<b>Pakistan</b>	Low	Low	Low	Low
<b>ROK</b>	Moderate	Moderate	Moderate	Moderate
<b>Russia</b>	High	Moderate	High	Low-Moderate
<b>Spain</b>	Moderate	Moderate	Moderate	Moderate
<b>South Africa</b>	Low	Low	Low	Low
<b>Sweden</b>	Moderate	Moderate	Moderate	High
<b>United States</b>	Moderate	Moderate	Moderate	High

Plutonium disposition likewise is primarily a concern for a small group of countries that have significant stocks of plutonium, such as Russia, Germany, and Japan. The United States currently displays only moderate interest in this issue, while most other states surveyed regard it as a low priority with little direct impact on them.

The establishment of multinational fuel centers is an example of an old approach that has been revived as a possible solution to the potential abuse of Article IV for the purpose of developing nuclear weapons. This idea, which first gained considerable currency during the International Nuclear Fuel Cycle Evaluation deliberations in the late 1970s, is supported by a number of countries—including Russia—that presumably would be the suppliers of fuel to such centers.<sup>7</sup> But many countries that would be potential customers for fuel supplied by such centers, for example, Brazil, Egypt, Indonesia, Iran, and Japan, regard the approach with little interest.



**Table 7. Preferred Nonproliferation Strategies: Other Policy Initiatives**

	CTR and Associated Programs MPC&A	G8 Global Partnership	Strengthened Norms	Security Alliances	Regional Security/Stability	Peaceful Use (Article IV)	Education	Intelligence Sharing	Assurances of Energy/Fuel Supply	Multinational Nuclear Fuel Centers	Economic/Technology Incentives
<b>Brazil</b>	Low	Low	High	Low	High	High	Moderate	High	Low	Low	Low
<b>China</b>	Moderate	Moderate	High	Low	High	High	Moderate	Moderate	Low	Low	Low-
<b>Egypt</b>	Low	Low	High	Low	High	High	Moderate-High	Moderate-High	High	Low	Low-
<b>Egypt</b>	High	Low	High	Low	High	High	Moderate-High	Moderate-High	High	Low	Low-
<b>Germany</b>	High	High	High	High	High	Moderate	Moderate	High	High	?	High
<b>India</b>	Low	Low	Moderate	Moderate	High	High	Moderate	Moderate	Moderate	Moderate	High
<b>Indonesia</b>	Low	Low	High	Low	High	High	Moderate	High	Low	Low	Low
<b>Iran</b>	Low	Low	High	Low	High	High	High	Low	High	Low	High
<b>Israel</b>	High	Low	Low	High	Varies	Low	Low	High	Low	High	Low
<b>Japan</b>	High	High	High	High	High	High	High	High	Moderate	Low	Moderate
<b>Pakistan</b>	Low	Low	Low	Moderate	Moderate	Moderate	Low	Moderate	Low	Low-Moderate	Moderate
<b>ROK</b>	Moderate-High	Moderate-High	Moderate-High	High	High	High	High	High	Moderate	Moderate	Moderate
<b>Russia</b>	Moderate	High	Low	High	High	High	Low	Moderate	Moderate	High	Moderate
<b>Spain</b>	Moderate	Moderate	High	High	High	Moderate	Low	Moderate-High	Low	Low-	High
<b>South Africa</b>	Low	Moderate	High	Low	High	High	Moderate	High	Low-Moderate	Low	Low
<b>Sweden</b>	High	High	High	Low	High	Moderate	High	Moderate	Moderate	Moderate	Moderate
<b>United States</b>	High	High	Low	High	High	Low	Low-Moderate	Moderate-High	Moderate	Moderate-High	High

They regard it either as undermining their right to develop a national fuel cycle capability, or as presenting a serious threat to their energy independence. Japan, in particular, has even implied that multinational nuclear fuel centers might stimulate proliferation. Although it is possible that further discussions among experts will identify some useful ideas about which there is a convergence of views—most likely with respect to the back-end of the fuel cycle—the multinational nuclear fuel center approach is unlikely to garner sufficient support from a broad coalition of states to move forward in the short term. States parties, for example, expressed widely different views on the subject at the 2005 NPT Review Conference. As with many solutions that appear at first blush to be “technical,” in nature, those dealing with the fuel cycle have a very political dimension which must be addressed if progress is to be made on the technical front.

There are, in addition, a variety of other non-technical approaches to nonproliferation challenges. The Nunn-Lugar Cooperative Threat Reduction program and associated nonproliferation assistance initiatives, as well as the G8 Global Partnership Against the Spread of Weapons and Materials of Mass Destruction, are viewed as a priority only by a relatively small but affluent group of countries in the survey. Intelligence sharing, by contrast, is seen as a key nonproliferation tool by almost all of the states surveyed (with the exception of Iran). However, intelligence sharing has proved difficult to implement in practice. Strengthening nonproliferation norms is another approach viewed as a high priority by almost all states. The United States and Russia stand out as exceptions among NPT states parties who give this approach low priority, in part because of the logical contradiction between the maintenance of their own robust nuclear arsenals and efforts to prevent other states from following their examples. Although the remaining NPT states parties in the survey, including U.S. allies, the NAM, and the NAC all believe that nonproliferation norms should be given a high priority, prospects for progress in building a consensus on this issue are not encouraging as long as the NWS continue to attach high value to their own nuclear arsenals.

Education is a very new and underutilized approach to promoting nonproliferation and disarmament. It only has emerged as an issue internationally in 2000 when a UN General Assembly resolution created a group of government experts to make recommendations on the subject. The approach, however, has been seized upon by a number of states as a relatively non-contentious issue with the potential to have important long-term impact on global nonproliferation norms, as well as more immediate practical applications to meeting proliferation challenges. Among the countries surveyed, Japan and Sweden view the approach as especially important and have taken the lead in international fora such as the First Committee and the NPT review process to promote implementation of the Expert Group’s recommendations. A number of other states, including Brazil, China, Egypt, India, Indonesia, South Africa, and Russia also have expressed support for the general approach, and co-sponsored a resolution on the subject at the fall 2004 session of the UN General Assembly. The diverse and growing support for education and training as a tool for encouraging disarmament and nonproliferation indicates that there is good reason to expect future multilateral action in this area.<sup>8</sup>

Fostering regional security and stability is viewed as a high priority by almost all countries surveyed. The key difficulty pertains to the fact that countries define regional security and stability very differently, and prefer widely divergent strategies to achieve their goals. These differences are manifest when one examines the perceived utility of alliances as an approach to enhance regional security. For example, although the members of NATO regard that alliance as an important means to enhance their collective security, to promote stability in the region, and to prevent proliferation, it is perceived very differently in Moscow. By the same token, Russian efforts to enhance regional security in Central Asia by means of the Tashkent Treaty on Collective Security are viewed in Washington with some apprehension as it is seen as a means by which Russian may extend the deployment of its nuclear forces under certain circumstances. More generally, security alliances and guarantees tend to be regarded by their members/recipients as important instruments for promoting regional security and nonproliferation, although they are likely to be viewed with indifference from states outside of the region and by states in the region which are outside of the alliance.



## CHALLENGES AND OPPORTUNITIES

What are the challenges and opportunities for nonproliferation cooperation based on the preceding review of national threat perspectives and preferred nonproliferation strategies? Is there sufficient convergence of threat assessments and preferred strategies for control to fashion a broad-based, multilateral approach to combat new and evolving nuclear challenges or must one rely increasingly upon ad hoc “coalitions of the willing” or even unilateral action? To the extent that one can discern convergent threat perceptions, do they lend themselves to enduring nonproliferation partnerships founded in negotiated legal regimes and organizations or should one be content with less formal mechanisms tailored to specific exigencies?

On the one hand, it is relatively easy to point to the results of the survey and the accompanying analysis in support of a conclusion that divergences are so great on so many issues that a broad-based multilateral approach to combating new proliferation threats is no longer possible. According to this interpretation, divisions over old issues like the pace of nuclear disarmament and the failure of the Comprehensive Test Ban Treaty to enter into force persist at the same time that the international community finds it difficult to make headway in a collective fashion in addressing new threats such as non-state actors and nuclear weapons. The inability of the 2005 NPT RevCon to adopt any substantive final document is consistent with this analysis. This view resonates among some key U.S. policy-makers, who suggest that ad-hoc coalitions of the willing are better suited to acting quickly and effectively to counter the proliferation challenges posed by state-sponsors of terrorism and terrorists themselves. The U.S.-led PSI is often held up as the prototype for a new, less universal, but more flexible and efficient nonproliferation strategy.

The results of the CNS survey suggest that there are only a few key proliferation threats and nonproliferation strategies on which there is broad-based agreement. For example, while Iran and North Korea are widely viewed as the most urgent state-level proliferation threats, there are major differences among states regarding the urgency of the threat and the best methods for addressing it. And while the overwhelming majority of the countries surveyed support the NPT, they do not necessarily support a common agenda of concrete, practical steps to help the treaty better cope with contemporary challenges. This problem is well illustrated by the difficulty states parties are having in finding common ground to remedy even those aspects of treaty shortcomings for which there is considerable agreement (e.g., the lack of attention to non-state actors and the abuse by a small number of states of Article IV and Article X). More often than not, states parties in the NPT review process appear unwilling or unable to tackle the hard proliferation issues, preferring either to put aside the most difficult and pressing problems or settling on a lowest common denominator approach. Such an approach to the North Korean issue was again evident at the 2005 NPT RevCon where the only agreement that could be reached entailed entrusting the name place for the DPRK to the conference secretariat. Although this strategy may appear to “buy time” and protect the treaty from a fractious debate, in fact, it contributes to the weakening of the NPT and the review process and gives credibility to charges by its critics about the declining relevance of the treaty.

Nevertheless, it would be premature to conclude from the survey or the failure of the 2005 NPT RevCon that an enduring multilateral nonproliferation regime is obsolete. While it is correct to assert that broad-based, traditional multilateral approaches may not be tenable for some of the most pressing proliferation problems, there are several important areas where progress would appear to be possible, both within and outside of the formal NPT review process.

The survey indicated a high level of support for and little opposition to the Additional Protocol. To the extent that this support among the study’s sample is reflected in the broader universe of NPT states parties, it may be possible to make the Additional Protocol the safeguards standard under the NPT, a step which could significantly increase confidence that peaceful nuclear technology was not being abused. Although it proved impossible to make headway in this regard at the 2005 Review Conference it remains a viable future objective that would demonstrate the continued relevance and adaptability of the NPT to new and evolving nuclear proliferation challenges.

Based upon the survey findings regarding the dangers of defections from the NPT, it is conceivable that in the future states parties may reinterpret the process by which states can withdraw from the treaty and the consequences of such action. Although the 2005 NPT Review Conference failed to forge consensus on how to deal with this problem, there was a constructive debate on the issue and some useful ideas were broached for reducing the incentives for and increasing the costs of exploiting the treaty for the purpose of achieving a near nuclear-weapons status.

Much of the preceding analysis has sought to interpret the survey's findings with respect to the 2005 NPT Review Conference. Considering the failure of the RevCon, it is important to emphasize that the NPT review process is only one of a number of important multilateral fora in which to develop practical responses to nuclear proliferation challenges. UN Security Council Resolution 1540 is illustrative of the potential (and limitations) afforded by Security Council action in the nonproliferation sphere. If Security Council Resolution 1540 is implemented in an effective manner, which will require that most states genuinely believe that it enhances their national security, it could serve as a model for further Security Council action on nonproliferation issues. Both conditions, however, must prevail if 1540 is to be emulated. In this regard, nonproliferation education and training may prove to be an important tool, helping to change mindsets and to foster critical thinking skills.

The CNS survey of national threat perceptions and preferred nonproliferation strategies suggests that while significant, if limited, opportunities remain for broad-based multilateral action, it will prove very difficult to gain support for collective action to address other nuclear challenges that many but not all states perceive to be acute. Timely and effective action on these issues may require alternative responses involving more limited coalitions. Efforts to secure, consolidate, and reduce stocks of fissile material in the former Soviet Union, for example, may best be accomplished by collaboration among like-minded states for which the issue is a high priority. The same is true with respect to issues such as creating new NWFZs, where the driving force for action emanates from the states in the region concerned. In these instances, where there is little opposition to the initiative even if support is not widespread, coalitions of the willing serve as a useful supplement to rather than substitute for more widespread, collective action.

Regrettably, the survey indicates that states are deeply divided about what constitute some of the most pressing proliferation challenges and also how best to tackle them. On these issues, action by small coalitions may be the only way in which timely steps can be taken, but at the risk of jeopardizing the larger legal and normative underpinnings of the NPT and its associated multilateral institutions. This tension is perhaps most acute with respect to country-specific proliferation threats involving noncompliance—an issue of great importance to some NPT states parties, but for which others are unlikely to sanction tough, collective action.

It was not the intent of this study to offer a solution to the extraordinarily complex problem of devising nonproliferation approaches to meet new and continuing nuclear threats that have the promise to be both effective and to enjoy widespread support. At best, the fault lines may be somewhat clearer as well as the opportunities for bridging a few of the divides. That information may not be encouraging, but it is a necessary condition for estimating where nonproliferation progress is likely, possible, and improbable. 🐘

## Notes

<sup>1</sup> An earlier version of this study was prepared for the Weapons of Mass Destruction (Blix) Commission. Additional contributors to this study include Jean DuPreez, Gaurav Kampani, Daniel Pinkston, Sammy Salama, Lawrence Scheinman, Maria Lorenzo Sobrado, and Jing-Dong Yuan. The authors also wish to express their thanks to Morten Bremer Maerli and Alexander I. Nikitin for their comments on an earlier draft of this article. This research was made possible through the support of the MacArthur Foundation.

<sup>2</sup> Egypt and South Africa are also members of the NAM, and Brazil is a NAM observer.



<sup>3</sup> This table measures the perceptions of threat posed by those states in the top row to policy makers from states in the vertical column on the left.

<sup>4</sup> See Charles Ferguson and William C. Potter with Amy Sands, Leonard S. Spector, and Fred L. Wehling, *The Four Faces of Nuclear Terrorism* (New York: Routledge, 2005).

<sup>5</sup> See William C. Potter, "The NPT Review Conference: 188 States in Search of Consensus," *The International Spectator* (3/2005), pp. 19-31.

<sup>6</sup> See "Combating the Risk of Nuclear Terrorism by Reducing the Civilian Use of Highly Enriched Uranium." Working Paper submitted by Iceland, Lithuania, Norway, and Sweden, 2005 Review Conference on the Parties to the Treaty on the Non-Proliferation of Nuclear Weapons, May 20, 2005 (NPT/CONF.2005/MCIII/WP.5). See also William Potter, "Nuclear Pact's Parties Must Unite on Terror." *San Jose Mercury News*, (May 6, 2005), p. 9c.

<sup>7</sup> For an analysis of Russian President Vladimir Putin's 2006 proposal to establish international fuel service centers, see Ekaterina Rykovanova, "International Fuel Service Centers: Russian Proposal," *Yaderny Kontrol (Nuclear Control) Digest*, No. 3-4, Summer/Fall 2005, pp. 32-40.

<sup>8</sup> The Chairman's draft report for Main Committee One of the 2005 NPT Review Conference, which was transmitted to the Plenary, contained two paragraphs on disarmament and nonproliferation education. See "Report of Main Committee I," 2005 Review Conference of the Parties to the Treaty on the Non-Proliferation of Nuclear Weapons, NPT/CONF.2005/MC.I/1 (May 25, 2005).