17th Meeting of the CSCAP Study Group on
Countering the Proliferation of Weapons of Mass Destruction (WMD)

The Peninsula Manila, Manila, Philippines
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Chairman's Report

The 17th meeting of the Study Group on Countering the Proliferation of Weapons of Mass Destruction (WMD SG) of the Council for Security Cooperation in the Asia Pacific (CSCAP) was held in Manila, Philippines on June 2-3, 2013, back-to-back with the 5th ASEAN Regional Forum Inter-Sessional Meeting on Non-Proliferation and Disarmament (ARF ISM/NPD). It brought together 74 participants from 18 countries from throughout the Asia Pacific and beyond, including a number of ISM/NPD participants and Pacific Forum CSIS Young Leaders. All attended in their private capacities. The meeting examined recent developments in nonproliferation and disarmament, Korean Peninsula denuclearization, missile proliferation, nuclear security and fissile material management, enrichment and reprocessing technologies and challenges, along with UNSCR 1540 implementation, and implementation of the biological and chemical weapons conventions. The report that follows reflects the views of the chair. While it has been reviewed by all participants, it is not a consensus document.

Session 1: Recent Developments in Nonproliferation and Disarmament

Manpreet Sethi (Center for Air Power Studies, India) opened the session by giving an overview of the major events that took place from 2010-2013: the conclusion of the Nuclear Nonproliferation Treaty (NPT) Review Conference (RevCon) Action Plan (May 2010), the ratification of the New Strategic Arms Reduction Treaty or New START (February 2011), and the two NPT Preparatory Committee (PrepCom) Meetings (April-May 2012 and April-May 2013). She noted that while the first PrepCom unfolded in a relatively cordial atmosphere and led to the adoption of an agenda for the following year, the second PrepCom revealed a number of controversial issues. Other key developments include the convening of the Oslo Conference on the humanitarian consequences of nuclear weapon use and rising tensions on the Korean Peninsula due to North Korea's nuclear developments and increasingly bellicose rhetoric. Notably, there was no meaningful progress on organizing a conference on the establishment of a Weapons of Mass Destruction (WMD) free zone in the Middle East

Our speaker moved on to examine the status of implementation of the 64-item NPT RevCon Action Plan. With regard to nuclear disarmament, she stressed that only two action items have been fully implemented: nuclear weapon states (NWS) remain fully committed to respecting their negative security assurances and to refraining from nuclear testing pending the entry into force of the Comprehensive Nuclear-Test-Ban Treaty (CTBT). Progress has been absent on nine action items, however: the NWS have not begun eliminating nuclear weapons and have not made any commitments to move toward this goal, they have not changed their nuclear doctrines, there is no agreement in the Conference on Disarmament (CD) to establish a subsidiary body on nuclear disarmament, no process to dismantle/convert fissile material facilities has been established, and the NWS are continuing to modernize their nuclear weapons. There has been

partial progress in other areas: the global stockpile of nuclear weapons has continued to shrink and important discussions on transparency, confidence-building measures, and verification have been taking place among the P-5.

On nonproliferation, no action item has been fully implemented. The NWS continue to refuse the application of International Atomic Energy Agency (IAEA) safeguards to peaceful nuclear facilities, the CTBT remains un-ratified, and negotiations on a fissile material cut-off treaty (FMCT) remain stalled. There has been some progress in some areas, however. For instance, the IAEA Board of Governors has endorsed the idea of a fuel bank and the International Uranium Enrichment Center at Angarsk has become operational. But these nonproliferation successes appear weak when compared to the serious compliance concerns in North Korea and Iran, the absence of consensus to reform the withdrawal provisions contained in Article X of the NPT, and the continued standoff between NWS and non-nuclear weapon states (NNWS) over a disarmament timeline.

Regarding action items on the peaceful uses of nuclear energy, Sethi stressed that significant progress has been made in key areas: assistance to transfer technology for peaceful purposes, technical cooperation, and efforts to train nuclear workforce. Progress on encouraging states to abide by nuclear safety and security conventions and share best practices has also been made. Meanwhile, the failure to host a conference on the establishment of a Middle East WMD free zone, which has the potential to threaten the entire NPT, remains a major sticking point – the Arab states had threatened to boycott the 2013 PrepCom if the conference was not convened.

Our speaker concluded by highlighting that political leadership and a clear vision were essential to implement the NPT Action Plan. While many were hopeful that US President Barack Obama's Prague agenda would produce results, there is growing cynicism that this will happen.

Natasha Barnes (Disarmament and Security Centre, New Zealand) talked about the "humanitarian approach" to nuclear disarmament. She explained that it is an attempt by a group of NNWS and civil society organizations to refocus the disarmament debate on the humanitarian consequences of nuclear weapons in an effort to create the conditions for the negotiation of a "ban treaty" outside the traditional forums. Largely a response to frustration at the stalemate in these forums, the proponents of this new approach aim to break the deadlock by replicating the successes of the Ottawa and Oslo processes, which banned land mines and cluster munitions, respectively. They argue that the main roadblocks to disarmament are political rather than strategic, and that the humanitarian approach will create public awareness and political will needed for the conclusion of a ban treaty. The most important feature of this strategy is to delegitimize nuclear weapons as a tool of statecraft by challenging states to discuss the consequences of their use.

The humanitarian approach to nuclear disarmament was developed by a civil society coalition that includes the International Campaign to Abolish Nuclear Weapons (ICAN) and the International Committee of the Red Cross/Red Crescent (ICRC). It draws on the support and leadership of a core group of NNWS, including Austria, Mexico, New Zealand, Norway, South Africa, and Switzerland.

Significantly, references to the humanitarian consequences of nuclear weapons have increased in international discussion. They are mentioned in Obama's Prague speech and in the 2010 NPT RevCon Final Document. In October 2012, a joint statement on the humanitarian dimension of nuclear disarmament presented by Switzerland at the 67th session of the UN General Assembly First Committee was also signed by 34 member states. In March 2013, the first international conference exclusively devoted to this issue was convened in Oslo: 127 states attended, including India and Pakistan, but the P-5 chose not to participate, arguing that this campaign detracts from disarmament and nonproliferation work conducted in the context of the NPT.

Barnes argued that the current movement represents an evolution in nuclear disarmament advocacy in that the campaign has taken a practical and evidence-based approach to arguments for nuclear disarmament drawing on current climate change, development, and environmental models. These models allow states to gain a greater and more realistic understanding of the global implications of a nuclear explosion and the response challenges that states face. Moreover, in viewing disarmament through the lens of human security, proponents are attempting to bridge the divide between the disarmament community and "hard" security issues.

However, our speaker also highlighted that this approach faces numerous challenges. For starters, humanitarian arguments for nuclear disarmament are not new and questions of moral action in a situation of extreme self-defense have not yet been answered conclusively. To date, arguments for disarmament have failed to provide an adequate challenge to counter the value of nuclear weapons in some circumstances. Moreover, the P-5 and others (namely the members of the Nonproliferation and Disarmament Initiative) continue to advocate action on both nonproliferation and disarmament within the NPT framework, not outside of it. Finally, even within civil society groups, the humanitarian approach, which favors the conclusion of a fast-track ban treaty, is not universally endorsed: Global Zero supports practical steps toward nuclear disarmament and Abolition 2000 supports a model nuclear weapon treaty. For all these reasons, the humanitarian approach to nuclear disarmament may prove to be yet another campaign in the boom and bust cycle of disarmament advocacy.

The ensuing discussion highlighted a deep sense of frustration that implementation of the 2010 NPT Action Plan is lagging behind in all three pillars of the treaty. Many participants suggested that there is still an important divide between NWS and NNWS and it remains unclear whether any middle ground can be found. While many viewed Obama's disarmament agenda articulated in Prague as a positive development, there is now growing skepticism that enough political leadership and clear vision can be found to follow through. Significantly, a number of participants pointed out that the lack of progress is not the responsibility of the United States alone. Russia, for instance, has made clear that it is not prepared to engage in new arms control talks, be it on strategic or tactical nuclear weapons, or even on conventional arms. This augurs badly for next year's PrepCom, where the P-5 have to report on their efforts to move toward nuclear disarmament, and for the 2015 Review Conference.

Much of the discussion focused on the humanitarian approach to nuclear disarmament, which is relatively new and thus misunderstood by many. Several participants questioned its sustainability over the long term, arguing that a focus on moral dimensions is unlikely to pay dividends. Significantly, the new abolitionist wave that has developed since the late 2000s focuses on why it

is in the *interests* of all to move toward a world free of nuclear weapons. In other words, to many, including the P-5, the humanitarian approach is a potentially counterproductive distraction to the nuclear disarmament agenda conducted within the NPT framework. Another criticism was that this approach is centered on nuclear disarmament and ignores nonproliferation.

There was some agreement, however, that the humanitarian approach to nuclear disarmament should focus on identifying the processes necessary to delegitimize the use of nuclear weapons to sustain its momentum. As several participants pointed out, delegitimizing use is the first step to delegitimizing possession. More generally, participants recognized the importance of educating the public about nuclear disarmament and discussing ways civil society organizations can to advance the disarmament agenda. There was general agreement that the role of civil society to verify disarmament is critical because the IAEA alone would not be able to do so effectively.

Session 2: The Korean Peninsula and Denuclearization

Kyudok Hong (Sookmyung Women's University, Republic of Korea) began by expressing deep concerns about North Korea's nuclear and missile developments and its "feverish" threats of pre-emptive nuclear attacks against South Korea and the United States. He characterized these developments, along with Pyongyang's decision to end the 1953 Korean Armistice Agreement and to withdraw from all nonaggression pacts with South Korea, a "game changer." He argued that North Korea's bellicose rhetoric and hostile moves (namely its missile tests, the conduct of a third nuclear test, and cyber-attacks against Seoul's banking and broadcasting companies) are unlikely to stop in the short term. Seoul expects Pyongyang's aggressiveness to continue at least until July 27, which is the anniversary of the armistice agreement and the day the North refers to as "total victory day."

Hong noted that a North Korean delegation led by Choe Yong-hae has expressed interest in opening dialogue with neighboring countries during a recent visit to China. But there is no evidence that North Korea is willing to give up its nuclear weapons and commit to denuclearization. Instead, Pyongyang has recently adopted a national strategy of simultaneously developing its economy and its nuclear forces. Significantly, it amended its constitution late last year to include an article claiming that it is a "nuclear state."

South Korea believes, our speaker explained, that North Korea has developed nuclear weapons by carrying out over 100 high explosive tests since the late 1980s. There is also a strong presumption in South Korea that the North has acquired the necessary skills to miniaturize nuclear weapons and that its third nuclear test was conducted with highly enriched uranium (HEU). From Seoul's standpoint, Pyongyang's recent moves present a strategic challenge and require the United States to strengthen extended deterrence, including the nuclear dimension. These recent moves also justify Seoul's decision to increase the range of its missile capabilities to better counter the increasing threat from the North.

Hong concluded by stating that South Korean President Park Geun-hye is in principle open to renewing dialogue with Pyongyang via the Six-Party Talks, but this would only be possible if North Korea "truly honors its commitments to denuclearization." He warned against the danger

of hastily searching for a peace mechanism, stressing that there can be no "quick fixes" and that sanctions resolutions must be implemented unless Pyongyang agrees to denuclearize.

Wang Haihan (China Institute of International Studies) stressed that there are two reasons for the current increased tensions on the Korean Peninsula: first, North Korea's use of provocative rhetoric and actions, and second, the persistent hostility of the United States, Japan, and South Korea toward the North. Washington's rebalance strategy is creating additional problems. She explained that North Korea's behavior reflects its efforts to consolidate its political regime, influence the newly (re)elected governments in the United States and South Korea, and normalize relations with the United States.

Wang argued that the situation is unlikely to improve in the short term because both sides (North Korea, and the US and its Northeast Asian allies) will remain entrenched in their positions, "under the pretext of their own absolute security." However, Pyongyang has recently made a series of diplomatic efforts (sending a special envoy to Beijing), suggesting that it wants to find a way out of the current deadlock.

While some analysts argue that China has not done enough to persuade North Korea to stop its bellicose rhetoric and actions or, worse, that it should be held responsible for the North's behavior, Wang insisted that these arguments were unfounded. North Korea is a close neighbor and friend of China, but remains an independent sovereign state responsible for its own actions. China is not willing to abandon North Korea, nor is it prepared to threaten its existence like others do. Rather, China urges all sides to remain calm and exercise restraint to relax tensions and address the issues at the negotiating table. (She argued that the Six-Party Talks remain an "irreplaceable mechanism" for settling the crisis.) Beijing is also acting as a responsible advocate for denuclearization and has been implementing sanctions resolutions as required.

Heigo Sato (Takushoku University, Japan) began by characterizing relationships in Northeast Asia as "troubling." He argued that pressure alone will not change North Korean behavior and that sanctions will likely not intimidate the leadership. It is equally questionable whether dialogue alone would pay dividends as evidenced by the lack of progress on the abduction issue and the impact this has had on Japanese policy coordination.

On this basis, Sato argued that greater coordination among all relevant parties on North Korea policy is important. Too often, there are contradictory calls for increased pressure and for constructive bilateral and multilateral dialogue on the Korean Peninsula. As a starting point, he argued that it is imperative that regional governments (including his own) keep others apprised of their efforts to advance dialogue. The June 1, 2013 trilateral dialogue between the US, Japan, and South Korea was thus a positive development because it enhanced coordination among the three countries. The three countries called on North Korea to comply with UN Security Council Resolutions 1718, 1874, 2087, and 2094, stressed their support for additional measures in the event of an additional North Korean missile or nuclear test, and affirmed their continued collaboration to deter Pyongyang's nuclear and military developments and provocations.

Jang-Keun Lee (UN Panel of Experts, Resolution 1874) gave a brief update on recent developments surrounding the sanctions regime against North Korea, focusing on adoption of

UN Security Council Resolution (UNSCR) 2087 in January 2013 in response to Pyongyang's Dec. 12 satellite launch and UNSCR 2094 in March 2013 in response to its Feb. 12, 2013 nuclear test. These resolutions expand the scope of sanctions, strengthen financial sanctions, reinforce transport sanctions and interdiction, increase the need for vigilance on diplomatic personnel, and strengthen the overall sanctions implementation regime. Lee also noted that numerous states, including many in the Asia Pacific, had yet to submit their national implementation reports and that it was imperative that they do so.

During the discussion, participants expressed concerns about North Korea's recent missile and nuclear tests and urged Pyongyang to refrain from provocative rhetoric and actions. There was general skepticism about the prospects for finding an agreement that would enable a return to the Six-Party Talks any time soon, while there was agreement that full implementation of sanctions resolutions is required in the meantime. As one participant pointed out, "sanctions are not a perfect solution, but they are the best tool we've got at the moment." Participants also encouraged the DPRK to open direct dialogue on broader security issues with the ROK government to help defuse tensions and create a better atmosphere for tension-reducing measures. The possibility of a five-party dialogue (i.e., without North Korea) was also discussed. Some participants voiced concern that such a forum could lead to the prioritization of nonproliferation over denuclearization (some complain the US is already doing this). Other participants stressed that if a five-party dialogue were to convene, its focus on denuclearization should remain unchanged.

Many participants fear that Pyongyang is trying to dictate the terms of engagement. They argued that the international community should demand visible actions from Pyongyang, not just words, before resuming dialogue. In this context, there was recognition that coordination among all parties was helpful to address the current impasse between sometimes contradictory calls for increased pressure and for constructive bilateral and multilateral dialogue.

Session 3: Missile Proliferation

Collin Koh (S. Rajaratnam School of International Studies, Nanyang Technological University, Singapore) focused on the trends of missile capabilities and development in the Asia Pacific (excluding the United States and Russia). He began by describing the key missiles of interest: ballistic missiles (ground and submarine-launched) of short-range (less than 1,000 km), medium-range (1,000-3,000 km), intermediate-range (3,000-5,500 km), and intercontinental-range (over 5,500 km); cruise missiles (air, ground, shipboard, and submarine); and other capabilities such as anti-satellite missiles and satellite launch vehicles.

Koh noted that China and Pakistan are developing short-range ballistic missiles (SRBM). Over time, range and payload have improved. Moreover, improved guidance and introduction of re-entry vehicles with maneuver rockets have enabled greater accuracy. Looking to the future, the possible introduction of penetration aids as part of the payload may enhance the probability of hit. The same trend applies to medium-range ballistic missiles (MRBM), which both China and Taiwan possess. China, North Korea, and India all possess intermediate-range ballistic missiles (IRBM), and Pyongyang has made significant improvements in such capabilities; it is likely that IRBM will see enhancements in range, payload, and accuracy aided by improved guidance and

multiple independent re-entry vehicles. China possesses intercontinental-range ballistic missiles (ICBM) and improvements have been significant since the end of the Cold War, notably through a transition from liquid to solid propellant technologies. Similarly, submarine-launched ballistic missiles (SLBM), which only China possesses, have an increased range with slightly reduced payload, but significant improvements in accuracy as a result of improved guidance. Finally, there has been a proliferation of cruise missiles in Northeast Asia and South Asia since the 1990s. Over time, they have also increased in range, payload, and accuracy.

Current trends suggest that missile capabilities in the Asia Pacific will see an increase in cruise missiles, SLBM, ICBM, and to a lesser extent, IRBM. These capabilities are characterized by high mobility, wide diversity of launch platform options, ease of concealment, larger and enhanced payload for a versatile range of warheads augmented by penetration aids and maneuverable (or multiple independent) re-entry vehicles, and improved guidance systems.

Koh concluded by stressing that other capabilities will also shape the Asia-Pacific strategic landscape, namely the development of multiple-launcher rocket weapon systems, anti-ship missiles with coastal strike capability, anti-ship ballistic missiles, as well as anti-satellite capabilities and space launch vehicles.

David Santoro's (Pacific Forum CSIS) presentation focused on the missile nonproliferation regime. He began by noting that the effort to stop the spread of missiles is usually dated to November 1982, when US President Ronald Reagan signed the "National Security Decision Directive" that sought "cooperation with supplier nations in limiting the export of strategic missile-related hardware and technology." The Missile Technology Control Regime (MTCR), however, did not take shape before April 1987 and it took even longer to gain momentum. It was not until the early to mid-1990s that its membership covered most potential missile suppliers. Today, the MTCR has 34 full partners and five "unilateral adherents," i.e., states that have not formally joined the regime but have promised to follow its guidelines (Israel, Romania, Slovakia, Macedonia, and India).

Santoro explained that the MTCR is an informal, non-treaty association of governments that share common interests in preventing the proliferation of missiles, unmanned air vehicles, and related technologies. Significantly, however, MTCR partners recognize the importance of controlling the transfer of missile-related technology without disrupting legitimate trade. The regime is based on adherence to common strategic trade management guidelines that are applied to an integral common list of controlled items known as the MTCR Equipment, Software, and Technology Annex. All MTCR decisions are made by consensus, including decisions to admit new partners, and MTCR partners regularly exchange information about relevant national export licensing issues and conduct outreach activities with non-MTCR countries. The MTCR, however, does not take export licensing decisions as a group. Rather, individual partners are responsible for implementing the Guidelines and the Annex on the basis of sovereign national decisions and in accordance with their own national legislation and practices.

The MTCR Annex distinguishes between Category I and Category II items. Greatest restraint – in fact a strong presumption of transfer denial – is applied to Category I items, which include complete rocket systems (e.g., ballistic missiles) and unmanned air vehicle systems (e.g., cruise

missiles and target and reconnaissance drones) that have capabilities exceeding a 500 kg of payload and a range of 300 km. Category II items include all other items such as propulsion and propellant components, launch and ground support equipment, as well as other materials and technology for the construction of missiles. Transfer of Category II items is less restricted, but requires end-use certification or verification when it is deemed appropriate.

The MTCR is not supported by a treaty and has no international organization to verify or enforce compliance, which means "holding the line" on missile proliferation is done through supply-side activity. Nevertheless, Santoro argued that it has been at least partly successful. In the late 1980s, there were three major exporters of ballistic missiles (the Soviet Union, China, and North Korea) and by the early 1990s, Russia and China had been persuaded to accept the MTCR or similar restraint. Similarly, Argentina, Brazil, and South Africa, which were emerging exporters, were also persuaded not to enter the market, and they are now MTCR members. However, North Korea, which began exporting ballistic technology in 1987 (the year the MTCR was founded), has accepted no limitations on its exports. Similarly, Egypt, Iran, Syria, India, and Pakistan have developed or acquired missiles. The concern that missile technology is proliferating outside MTCR partners has led some to promote a treaty and build a norm to discourage missile proliferation. However, Santoro suggested that unlike nuclear, biological, and chemical weapons, missiles alone cannot be easily stigmatized. Significantly, the MTCR stresses that its goal is to control missile technology as it relates to the delivery of WMD to help justify its value.

The closest the world has come to establishing a norm against missiles is the Hague Code of Conduct against Ballistic Missile Proliferation (HCOC), which was concluded in 2002. The HCOC, whose membership is open to all states, only focuses on ballistic missiles. It does not call for their destruction, but is an agreement between states on how they should conduct trade of sensitive technology as it relates to missiles. It merely encourages states to exercise restraint in developing, testing, and deploying ballistic missiles, and to make annual declarations on their holdings and pre-launch notifications. Santoro recommended that more thought should be given to controlling missile technology because missile proliferation is increasing and it is becoming a growing problem, independent of whether it is linked to WMD proliferation.

During the discussion, several participants expressed concern about the rapid rate of missile proliferation, especially cruise missiles. These missiles have longer range and enhanced payload and accuracy. Other expressed concern regarding the increased missile defense and space capabilities in the region. The suggestion was made that the dynamic between missile proliferation and defense capabilities are intimately related and need to be addressed in tandem.

Participants recognized that the control regime for missile technology (i.e., both the MTCR and HCOC) is underdeveloped and vaguely defined as the "means of delivery" for WMD. As a result, the regime has not been very effective in responding to missile proliferation threats and is unlikely to mature to become comparable to the regimes dealing with nuclear, biological, and chemical weapons. Therefore, there was general agreement that fresh thinking is needed to control the spread of missiles and related technologies in the Asia Pacific. Also important would be discussing military doctrines as they relate to missile use.

Session 4: Nuclear Security and Fissile Material Management

Sharon Squassoni (Center for Strategic and International Studies) focused on the status of nuclear security in Asia. She began by defining nuclear security as the prevention and detection of, and response to, theft, sabotage, unauthorized access, illegal transfer, or other malicious acts involving nuclear material, other radioactive substances or their associated facilities. It is not a new topic, but one that has languished behind nuclear safety and nonproliferation in terms of funding. Since the Nuclear Security Summit process was launched in 2010, however, there has been greater political attention devoted to nuclear security.

Squassoni explained that the goals of the first summit, which took place in Washington in April 2010, were to increase global awareness of the risk of nuclear terrorism, seal an agreement to lock down all vulnerable nuclear materials in four years, and raise high-level attention from world leaders about the issue so that it could trickle down to implementing organizations. A number of specific, tangible actions were encouraged in the Work Plan that was produced following the summit and countries were urged to make individual commitments.

The 2012 Seoul Nuclear Security Summit sought to carry forward the goals set at the Washington Summit, highlight achievements in implementing the Work Plan, and explore the potential for creating a "process" for more far-reaching goals. Significantly, joint working groups on specific topics were established. A third summit is scheduled to take place in the Netherlands in 2014 and the United States recently announced it would host a fourth summit in 2016.

Questions remain about the future of the Nuclear Security Summit process after 2014 and how momentum can be sustained. Should there be more summits? Should responsibility for implementing the goals outlined in the Work Plan be transferred to the IAEA? From a substantive standpoint, should the focus move beyond the most vulnerable nuclear materials? Should the question of radiological security be addressed? Should there be more capacity building assistance? These are critical issues because the nuclear security framework is currently patchwork: there is no established mechanism to assess progress or "verification" that states are honoring the commitments being articulated at the summits.

A number of issues remain resolved. For starters, most nuclear materials (plutonium and HEU) are possessed by NWS, and half of them are held in military sectors. While the current focus is on fissile materials, radiological source materials are a bigger problem even through the consequences of use are less catastrophic. National sovereignty issues continue to plague nuclear security efforts. New areas of agreement have also emerged. Increasingly, nuclear safety, security, and nonproliferation are being integrated, facilitating implementation. The importance of developing nuclear safety and security cultures and the need to set up independent regulatory frameworks are increasingly being recognized as essential. In other words, there is agreement that "nuclear governance" is important and needs improvement.

On that basis, our speaker explored the implications of these developments for Asia. She explained that growth in nuclear energy will take place in the region, despite the Fukushima accident. This means that there will be more nuclear materials in Asia and thus more challenges

for nuclear security, safety, and nonproliferation. That is why it is essential to ensure that nuclear governance keeps pace with nuclear energy development.

Today, there is already a range of capabilities and vulnerabilities in the region. Some states such as China, Japan, and South Korea have large and growing nuclear power programs (and China and Japan have fuel cycle capabilities and fissile material stockpiles). Numerous Asian states have radiological sources for medical and industrial purposes. Finally, and significantly, insurgent and terrorist activities are not insignificant in Asia, especially in Southeast Asia.

Nuclear technology holders in Northeast Asia (China, Japan, and the ROK) face a number of challenges. China has military stocks and its fuel cycle plans may increase plutonium stocks. Japan has stocks of separated plutonium without any credible plan for "use." The ROK, for its part, aspires to develop enrichment and reprocessing (ENR) technologies while numerous safety and security questions remain unanswered. All three states are allegedly not sufficiently transparent on their activities. For aspiring technology holders, the priority is to build physical and intellectual capacity for the development of a nuclear infrastructure, which is a daunting enterprise.

Squassoni concluded that nuclear energy growth in Asia can help promote regional solutions, including front end fuel supply, training, or back end regional repository issues. Good governance in both supplier and recipient states will be essential. Good governance objectives include 1) enhancing the focus on nuclear security (through the Nuclear Security Summit of 2014, the World Institute for Nuclear Security, and the promotion of better adherence to international standards); 2) limiting the growth in the amount of weapon-usable nuclear material (by discouraging plutonium and HEU use in civil operations and, pending the conclusion of an FMCT, by expanding the moratorium on fissile material production for nuclear weapons beyond the four NWS to China, India, Israel, North Korea, and Pakistan); and 3) reducing proliferation risks in the fuel cycle both at the front and back ends. In addition, China, Japan, and the ROK have a stake in promoting nuclear security in Northeast and Southeast Asia via the Centers of Excellence, which provide excellent governance mechanisms and can help ensure regional threat awareness, track implementation of commitments, and serve as a forum for information security and exchange.

Jorshan Choi (University of California, Berkeley) gave a presentation on FMCT, which he defined as a proposed (not yet negotiated) international treaty to prohibit the production of fissile material for nuclear weapons or other nuclear explosive devices. Meant to be non-discriminatory and effectively verifiable, negotiations for an FMCT have been blocked for two decades at the CD, which makes decisions on a consensus basis, as a result of various concerns among NWS and "nuclear capable states." For instance, until 2003, Russia and China refused to open FMCT negotiations if negotiations for the conclusion of a treaty for the prevention of an arms race in the outer space were not also initiated; during the Bush administration, the United States argued that FMCT verification was impossible. Today's impasse is caused by Pakistan's objection over the "exclusion of existing stocks." Islamabad would like to see negotiations of a fissile material treaty that considers all material rather than a fissile material "cut-off" treaty.

Choi explained that there are important challenges to the opening of negotiations for the conclusion of an FMCT. One is how to define fissile material and production. Another issue is the scope of FMCT obligations. The 1995 Shannon mandate, which represents the most progress the CD has achieved on FMCT, covered production but left open the question of existing stocks. According to the International Panel on Fissile Materials there are approximately 1,380 tons of HEU and 490 tons of plutonium as of the end of 2012. As it stands today, the NWS have already stopped producing HEU and plutonium for nuclear weapons, although China has only made an informal declaration to this effect. Russia, however, announced in 2012 the resumption of limited HEU production for naval and fast reactor fuel. India is also producing HEU for naval fuel. Pakistan, for its part, is producing HEU for weapons and it is believed that North Korea may be doing so as well. Meanwhile, Israel, India, and Pakistan continue to produce plutonium for nuclear weapons and in 2013 North Korea announced that would resume plutonium production.

Verifying FMCT compliance would also be challenging. On-site inspections could compromise sensitive national security information. Choi, however, argued that verification would not be impossible with the adoption of a "focused" approach which would have a "narrow scope" on ENR facilities and a "wider scope" on downstream facilities. Yet he acknowledged that verification issues stand as a powerful roadblock to the conclusion of an FMCT. Also at issue would be funding, which would need to be considerably increased because IAEA resources are limited.

Our speaker concluded by stressing that FMCT negotiations could be initiated if the consensus rule was dropped at the CD. Acknowledging that the odds of that happening are low, he suggested that one option would be to take the process out of the CD. There is strong resistance to this, however, and important activity is taking place to support the process in the CD. Prospects for success remain uncertain for the time being.

During the discussion, participants agreed that nuclear security governance had to keep pace with the growth in nuclear energy. While the threat level is difficult to assess because, as one participant put it, "we don't know what we don't know," there was general agreement that states should invest in nuclear security and that vulnerabilities had to be addressed expeditiously. Taking stock of the general concern about the need and feasibility of sustaining high level attention to and participation in the Nuclear Security Summit process post-2014, participants stressed the importance of enhancing nuclear security governance, although there was little agreement on what it should include. (One participant referenced the Nuclear Security Governance Experts Group, or NSGEG, which has developed a comprehensive set of policy recommendations intended to facilitate the evolution and improvement of the nuclear security regime.) Participants also encouraged ARF members to prepare national reports and recommendations outlining concrete steps being taken and to develop joint baskets proposals for consideration at the 2014 Nuclear Security Summit. The ASEANTOM initiative, which was originally proposed by Thailand in 2011 and focuses on sharing information and on providing training, was highlighted as an example.

Prospects for opening negotiations on an FMCT at the CD are dim. Beyond the procedural challenge of the consensus rule, finding compromises on definitions, the scope of obligations,

and verification could be extremely challenging. Still, participants suggested that the ARF should echo CSCAP in calling for an early opening of discussion on this issue.

Session 5: Enrichment and Reprocessing Technology (ENR)

Miles Pomper (James Martin Center for Nonproliferation Studies) gave an overview of the status of ENR technology in Asia. After brief explanations on the nature of the technology, he highlighted the crux of the problem, best captured by the 1946 Acheson-Lilienthal Report, "the development of atomic energy for peaceful purposes and the development of atomic energy for bombs are in much of their course interchangeable and interdependent." He mentioned Iran's current push for its "right" to enrich and the existence of reprocessing (and possibly enrichment) technology in North Korea. He also referred to India's 1974 "peaceful" nuclear explosion as well as to A.Q. Khan's international proliferation network, which illegally traded ENR technologies throughout the world. Today, in the Asia Pacific, the question is whether the "nuclear renaissance," which has not lost momentum despite the 2011 Fukushima nuclear disaster in Japan, will lead to ENR proliferation and the potential emergence of new nuclear-armed states.

Regarding responses to this problem, Pomper explained that following India's 1974 "peaceful" nuclear explosion, the United States enacted the 1978 Nuclear Nonproliferation Act, which tightened controls on civil nuclear cooperation, including on ENR transfers. Global discussions about multilateralizing fuel supply, first discussed at the dawn of the nuclear age, were also revived. After the existence of A.Q. Khan network was revealed in the early 2000s, the Nuclear Suppliers Group also worked to amend its guidelines and enhance restrictions on ENR transfers (2011). Current concerns about Iran, North Korea, and the nuclear renaissance have also reinvigorated discussions about multilateralizing the fuel cycle to limit the availability of dual-use technology while satisfying energy needs; to date, while there have been many initiatives and proposals to deal with the front end of fuel cycle (e.g., establishment of fuel banks in Russia and soon Kazakhstan), no concrete proposals have been made to manage back-end issues. Finally, the United States has increasingly although not consistently, sought "gold standard" commitments from emerging nuclear energy states, i.e., the promise not to develop independent ENR technologies.

Pomper then described the capabilities and plans of China, India and Pakistan, Japan, South Korea, Taiwan, and Vietnam. He stressed that China, the only NWS in Asia, has 16 reactors in operation, 29 in construction, and 51 on order/planned; China possesses ENR capabilities. While India has 20 reactors in operation and 39 planned, Pakistan has 3 reactors in operation and 5 under construction or planned; both of them are nuclear-armed states with ENR technologies and are not members of the NPT. (In 2008, the United States agreed to engage in nuclear cooperation with India, and won an exemption for India within the NSG from the ban on exports to non-NPT states and Pakistan is now seeking similar treatment.) Before the Fukushima accident, Japan had 54 reactors in operation and 2 under construction. Today, 2 reactors are in operation and 2 under construction in Japan. Japan has enrichment capabilities and a reprocessing plant (Rokkasho), which should start operation soon, although this has been delayed several times. Although questions remain about Japan's nuclear future after Fukushima, Pomper suggested that Japan will continue to operate an important nuclear energy program. In South Korea, there are 23 reactors and 10 under construction or planned; Seoul would like to have ENR technologies but

faces opposition from the United States. Taiwan, for its part, possesses three nuclear plants and six reactors; its current 123 agreement with the United States is set to expire in 2014, and Taipei is expected to forego ENR. Finally, Vietnam has signed agreements with Russia and Japan to build four nuclear plants; it has not signed a 123 agreement with the United States and does not seem to have plans to develop ENR, although it is currently unclear whether Hanoi would be prepared to forego that option and make "gold standard" commitments.

Duyeon Kim (Center for Arms Control and Nonproliferation) focused on the renewal of the US-ROK Peaceful Nuclear Cooperation Agreement. She explained that US-ROK nuclear industries have been interdependent for decades. The two sides recently agreed to try to get a two-year extension of the current agreement, set to expire in March 2014, but they have not yet agreed on the most contentious issue: US consent to ROK enrichment and pyroprocessing rights, which Seoul wants. Kim explained that while the United States is not pushing the ROK to renounce ENR rights, it opposes the spread of such technology and thus has resisted Seoul's requests. Washington is not concerned about the ROK developing nuclear weapons (although some in the US have voiced concern), but simply opposes the spread of ENR technologies, both because of security concerns and because they are not economical. Washington also worries about the development of such technologies in an already unstable environment, which in addition could make it even more difficult to convince North Korea to denuclearize.

The ROK, for its part, argues that its civil nuclear program is comparable to that of EURATOM, Japan, and India. Seoul argues that it needs such technologies because it intends to increase its reliance on nuclear energy and enhance its energy security, and because it aspires to become a major nuclear exporter. Seoul also contends that it is faced with a serious spent fuel storage dilemma and that for this reason, it needs pyroprocessing technology. Seoul stresses that it is a responsible member of the international community with good nonproliferation credentials and that it should therefore be granted the right to develop ENR.

Kim concluded by surveying the possible "realistic" options for US-ROK negotiations. One possibility is that the US will give its conditional consent for ENR rights, which would be dependent on the outcomes of the ongoing study on pyroprocessing. Another possibility is that strong lobbying could be sought to seek US Congressional approval. It is also possible to envision a lapse in bilateral cooperation for a short period, which seems likely if both sides remain entrenched in their current positions. Finally, another extension of the existing agreement may happen. None of these options is ideal, however.

Discussants recognized that the development of ENR technologies by individual states poses a security problem. But more importantly, they are generally uneconomical. One participant stressed that it is a mistake to see ENR technologies as a guarantee of energy security, arguing that the concept of energy security is flawed and that states should instead focus on diversifying their energy sources; the United States, for instance, operates 104 reactors and relies heavily on foreign suppliers of uranium enrichment services.

Participants concurred that at a minimum, national development of ENR technologies should be conducted in a fully transparent manner. Several stressed that governments choosing to pursue nuclear energy should have concluded, signed, and ratified an Additional Protocol with the

IAEA. In this context, one participant briefed the group about recent developments in Myanmar, stressing that its government, which sees a nuclear future for the country (for agricultural and medical purposes) but does not intend to develop ENR technologies, agreed to greater transparency in its activities and to conclude an Additional Protocol with the IAEA.

Others noted that "gold standard" nuclear cooperation agreements (defined as not allowing any ENR) can help alleviate regional safety and security concerns, as would a commitment by nuclear energy producers to seek readily available external sources to satisfy ENR requirements. In this regard, the establishment of an ASEAN or broader Asia Pacific Reprocessing and Enrichment Free Zone (REFZ) was presented as a significant confidence building/reassurance measure, at least pending the conclusion of an FMCT (which would eliminate such need). Some, however, suggested that given the likely political resistance, it would be more realistic to envision the creation of an HEU free zone. Another suggested that compliance with the NPT should be considered as the "gold standard" rather than accepting standards included in nuclear cooperation agreements. The discussion highlighted that serious sustained multilateral dialogue on back-end fuel cycle issues is needed both at the official and track-2 level. Spent fuel management is a common problem and more efforts are needed to develop regional approaches to dealing with the challenges associated with waste disposal and ENR technologies. The ARF and CSCAP were encouraged to take the lead in these areas.

Session 6: UN Security Council Resolution 1540

Charles Mahaffey (US Department of State, but presenting his personal views) began with a reminder that UN Security Council Resolution 1540 imposes three primary obligations on all states: 1) to prohibit support to non-state actors seeking WMD and their means of delivery; 2) to adopt and enforce effective laws prohibiting activities involving WMD and their means of delivery to nonstate actors; and 3) to adopt and enforce effective measures to reduce the vulnerability of many legitimate activities in ways that would foster the proliferation of WMD and their means of delivery to nonstate actors. He then explained that the 1540 Committee's responsibilities lie in four principle areas: monitoring implementation, facilitating cooperation, providing assistance, and enhancing transparency and outreach.

A number of limitations, gaps, and obstacles exist. Greater awareness of the Resolution's requirements is needed, and these requirements need to be reconciled with national priorities. More often than not, resources and technical capacity to implement the Resolution are limited (as is the number of experts on the 1540 Committee). Finally, and significantly, a key challenge is to sustain long-term political commitment to implementation.

Mahaffey argued that regional organizations have a role to play in facilitating the Resolution's implementation. UN Security Council Resolution 1977 (April 2011), which granted a 10-year extension to the 1540 Committee's mandate, states that regional organizations can help member governments share information and best practices, enhance capacity building, and synchronize activities to avoid duplication of efforts. They can also help establish national committees in each country to oversee implementation and help review and assess national reports, as well as develop links with educational and research institutions. Finally, regional organizations can organize forums, workshops, and seminars that address specific issues pertaining to the

Resolution's implementation. In the Asia Pacific, numerous events of this nature have taken place under the auspices of the ARF, the UN Office for Disarmament Affairs, and the Asian Senior-Level Talks on Nonproliferation, among others. He concluded that it was important that additional events be held, particularly to support the ARF Work Plan on NPD. The focus should be discussions on best practices, the designation of points of contact for ARF participants and the ARF as a whole, and the promotion of national action plans.

Jesus (Gary) Domingo (Department of Foreign Affairs, Philippines, also speaking in his private capacity) began by describing the Philippines' activities related to implementation of UN Security Council Resolution 1540. The Philippines, in fact, co-sponsored the Resolution along with the United States, Spain, and France. Subsequently, the Philippines submitted its initial report through its UN Mission in New York within the six-month period required by the Resolution. This report, which has since been updated, states that the Philippines is working on a Strategic Trade Management Act, which will be submitted to the next Congress for consideration. Domingo also stressed that the Philippines joined the Global Initiative to Combat Nuclear Terrorism in 2010 and that it is now on the verge of becoming a member of the G8 Global Partnership.

There are a number of limitations, gaps, and obstacles to further implementation, however. For starters, there are only a few subject matter experts on the Resolution in the Philippines, and it often proves difficult to coordinate activity among local government agencies. That is why the designation of a national point of contact on 1540 matters is essential and there is an urgent need to enhance coordination and cooperation at the regional level to better implement the Resolution. However, it is important to find a balance between fostering trade and economic development, which the region regards as a priority, while at the same time ensuring that such enhanced trade does not result in illicit materials being transported across borders or falling into the wrong hands. Domingo noted that regional groupings whose goal is to facilitate trade, such as APEC, have a key role to play in this regard.

Our speaker concluded by stressing that international organizations such as the IAEA, the Organization for the Prohibition of Chemical Weapons, and the Biological and Toxin Weapons Convention (BTWC)'s Implementation Support Unit should assist states in implementing their 1540 obligations given their level of expertise, training, and know-how. He also pointed out that closer coordination and cooperation between the United Nations, ASEAN, the European Union, and bilateral partners were critical to better implement the Resolution.

Discussants recognized that implementation of the Resolution is progressing in the Asia Pacific. Significantly, the role of the ARF in raising awareness on this initiative was applauded. While acknowledging that numerous regional governments have not yet submitted national action plans, participants recognized that such plans are good tools to help measure progress in implementing the Resolution. Implementation of the Resolution would be considerably improved if regional governments increased information sharing (namely of best practices) and designated points of contact. Finally, there was general agreement that regional organizations should become more engaged in reviewing and assessing national reports or assisting in their preparation as required/requested. A few participants stressed that bilateral cooperation was important and should continue even as regional organizations take a greater share of the burden.

While much of the emphasis has been laid on the need for states to develop and maintain effective strategic trade controls, implementation of the Resolution will increasingly focus on other areas as well. These areas include the physical protection of WMD-related items, materials, and technology, biosecurity, as well as proliferation financing. A discussion followed on the role of other nonproliferation tools to help implement the Resolution. The role of the Proliferation Security Initiative (PSI) was discussed and participants suggested that greater understanding is needed about the PSI's role in capacity building to support the Resolution's implementation. Participants recognized the existence of sensitivities regarding PSI, but noted that concerns about the Initiative's legality and application methods are being addressed.

Finally, the discussion provided an opportunity to explain the difference between Resolution 1540 and UN sanctions resolutions, which are often misunderstood. Unlike Resolution 1540, which is comprehensive and aimed at nonstate actors, sanctions resolutions are targeted and focused *against* one state. Resolution 1540 imposes obligations on states, but does not provide penalties if they do not comply; sanctions resolutions do. It is helpful to examine sanctions resolutions in depth, however, because they identify the key technologies, materials, and related items needed to develop WMD and their means of delivery, and can therefore provide valuable information on how to implement Resolution 1540.

Session 7: BTWC and CWC Implementation

Jaime Yassif (Connecting Organizations for Regional Disease Surveillance) stressed that implementation priorities of the BTWC are multi-sectoral and cut across the public health, veterinary, and security realms. They focus on capacity building through international cooperation, including disease surveillance and containment initiatives. Reducing global threats posed by infectious disease outbreaks requires the full spectrum of threat reduction activities ranging from prevention-focused programs that minimize the likelihood of outbreaks, to capacity building activities aimed at mitigating the effects through early detection and rapid response. Her presentation focused on detection and response, namely on Regional Disease Surveillance in Southeast Asia and Global Integrated Disease Surveillance.

Disease surveillance serves both public health and biosecurity goals. It enables early detection and rapid response to outbreaks, whether naturally occurring or deliberately caused, and it can contribute to deterrence. In terms of investing in threat reduction, disease surveillance serves both the donor nation's goal (enhancing biosecurity) and the participating nation's goals (building capacity to manage public health threats. Ultimately, the goal is to integrate data at the regional and global level, i.e., develop a surveillance system that can detect infectious disease events before they evolve into an epidemic. Some of the components that could be used to assemble such a system have been developed over the past two decades. Early disease surveillance tools took the form of ProMED Mail (an Internet-based, public reporting system for rapid international dissemination of information on infectious disease outbreaks) and the Global Public Health Intelligence Network, which monitors news sources in six languages to detect early signs of potential disease outbreaks and played a role in detecting SARS in 2003.

Yassif explained that the establishment of these digital tools in the 1990s was followed by the creation of six regional disease surveillance networks in the Middle East, Africa, Southeast Asia, and Eastern Europe. She focused on three: the Mekong Basin Disease Surveillance Network, the Asia Partnership on Emerging Infectious Disease Research, and China's responses to the current H7N9 outbreak. The Mekong Basin Disease Surveillance Network is a regional consortium of health ministries which provide cross-border disease surveillance, outbreak investigation and response. Partner nations include Cambodia, China, Laos, Myanmar, Thailand, and Vietnam. The Asia Partnership on Emerging Infectious Disease Research, for its part, is a regional network of research institutes which provides disease surveillance and outbreak preparedness. It includes Cambodia, China, Indonesia, Laos, Thailand, and Vietnam. This partnership was established in 2005 to promote regional research on avian influenza and to advocate changes in agricultural and public health practices based on this research. (It has since expanded to include all emerging infectious diseases in the region.)

China's response to the recent H7N9 outbreak was portrayed as an excellent example of the power of transparency and information sharing with the international health community. China's readiness to share information about the outbreak, including DNA sequences, has allowed the global health community to rapidly organize a coordinated response, including the identification of the putative of outbreak source within live poultry markets in China, the execution of outbreak containment measures, and the sharing of H7N9 samples with designed high-containment research facilities to enable development of an H7N9 vaccine.

Discussants stressed that there are, and will continue to be, growing synergies between the BTWC and the Chemical Weapons Convention (CWC). Unlike the BTWC, however, the CWC provides for strict verification mechanisms because it is much easier to verify chemical materials and technologies than biological ones. (The third CWC Review Conference, which took place in April 2013, discussed allegations of chemical weapon use by the Syrian government, the delay by possessor states to destroy their chemical weapon stockpiles, and the need to enhance implementation of the Convention.) The process to introduce verification mechanisms in the BTWC, for which many participants continued to express support, died in the early 2000s for a variety of reasons. As became clear in the discussion, the challenge of verifying the BTWC is linked to the fact that biological materials and technologies, which are inherently dual-use, are changing at a rapid rate, making it virtually impossible to do more than develop codes of conduct for life scientists and others.

Participants recognized that priority should be given to strengthen and invest in health security. There was general agreement that this is best achieved through cross-sectoral coordination, cooperation, and transparency, both within individual states and at the regional level, notably through existing disease surveillance networks. There was recognition, however, that more efforts are needed to enhance coordination, cooperation, and transparency to build trust among states. The World Health Organization is introducing regulations to provide adequate guidelines to all member states and nudge them toward building greater cooperation.

Session 8: Wrap-Up, CSCAP Memoranda Status, and Future Plans

In the final session, *David Santoro* (Pacific Forum CSIS) presented the draft of a new memorandum, which establishes general principles and recommends measures for more effective

implementation of UN Security Council Resolution 1540. Feedback was collected from the group and a new draft will soon be produced and submitted to WMD SG members for additional comments prior to being sent to CSCAP Member Committees for approval. As with our previous memoranda on strategic trade controls, the peaceful uses of nuclear energy, the reduction and elimination of nuclear weapons, and WMD nonproliferation, this memorandum, if approved, will be published and fed directly into the ARF ISM on NPD, offering concrete and practical steps to better implement the Resolution.

A wrap-up discussion of the meeting followed, where a number of key findings for the Study Group were identified. (They can be found below.) In terms of next steps, it was suggested that the Group revisit the role of nuclear weapons, in particular by analyzing existing doctrines, and conduct work in the area of nuclear disarmament verification by examining the experiences of the INF/START treaties and the CWC. Another area of work that requires a deeper analytical dive is multinational approaches to the nuclear fuel cycle, including a discussion on the rationale for such approaches and on the experiences and lessons learnt so far. In view of the challenges (and opportunities) posed by the peaceful uses of nuclear energy, it was also urged that the CSCAP Nuclear Energy Experts Group (NEEG) continues and expands its activities, and feeds its findings into the WMD Study Group to better inform the ARF ISM on NPD. The NEEG is a sub-group of the WMD Study Group, which met last year in Ho Chi Minh City, and will meet again this fall. The focus is on the technical aspects of nuclear energy and on how nuclear energy programs can be developed in safe, secure, and proliferation-resistant manner.

The WMD Study Group is scheduled to meet again next fall and will also meet in the spring of 2014 in conjunction with the next ARF ISM on NPD, which will take place in Tokyo and focus on disarmament.

17th Meeting of the CSCAP WMD Study Group
Key Findings

The 17th meeting of the Study Group on Countering the Proliferation of Weapons of Mass Destruction (WMD SG) of the Council for Security Cooperation in the Asia-Pacific (CSCAP) was held in Manila, Philippines on June 2-3, 2013, back-to-back with the 5th ASEAN Regional Forum Inter-Sessional Meeting on Non-Proliferation and Disarmament (ARF ISM/NPD). It brought together 74 participants from 19 countries from throughout the Asia-Pacific and beyond, including a number of ISM/NPD participants and Pacific Forum CSIS Young Leaders. All attended in their private capacities. The meeting examined nuclear security and fissile material management, enrichment and reprocessing technologies and challenges, and other peaceful use issues, along with UNSCR 1540 implementation, implementation of the biological and chemical weapons conventions, missile proliferation, Korean Peninsula denuclearization, and other proliferation and disarmament issues. Key findings from this meeting include:

1. There is an important need in the Asia Pacific to ensure that nuclear security governance keeps pace with the growth in nuclear energy. The Fukushima disaster may slow but is not likely to halt the region's quest for nuclear power, despite growing safety, security, and proliferation concerns associated with its use.

2. Participants recognize that the development of enrichment and reprocessing technologies by individual states poses a security and proliferation problem, in addition to being generally uneconomical. At a minimum, national development of such technologies should be conducted in a fully transparent manner. Governments choosing to pursue nuclear energy should have signed and ratified the Additional Protocol.

3. "Gold Standard" nuclear cooperation agreements can help alleviate regional safety and security concerns as would a commitment by nuclear energy producers to seek readily available external sources to satisfy reprocessing and enrichment requirements. The WMD SG noted that the establishment of an ASEAN or broader Asia-Pacific Reprocessing and Enrichment Free Zone (REFZ) could be a significant confidence building/reassurance measure.

4. Serious sustained multilateral dialogue on back end of the fuel cycle issues is needed at both the official and track-two level. Spent fuel management is a common problem. More effort is needed to develop regional approaches to dealing with the challenges associated with waste disposal, reprocessing and enrichment; the ARF and CSCAP should take the lead in this area.

5. Questions remain about the sustainability of the Nuclear Security Summit (NSS). While planning for the third summit in the Netherlands in 2014 is proceeding, there is general concern about the need for and feasibility of maintaining high-level attention and participation. WMD SG participants acknowledged the need to enhance nuclear security governance, although there was little agreement on what it should include. ARF members were encouraged to prepare national reports and recommendations outlining concrete steps being taken and to develop joint baskets proposals for consideration at the 2014 NSS; the ASEANTOM initiative was highlighted in this regard.

6. Prospects for moving forward on opening negotiations on a fissile material cut-off treaty at the Conference on Disarmament remain dim. Beyond the procedural challenge of the consensus rule, finding compromises on definitions, scope of obligations, and verification will be challenging. The ARF should echo CSCAP in calling for an early opening of discussion on this issue.

7. Implementation of UN Security Council Resolution 1540 is progressing in the Asia Pacific and the ARF's role in raising regional awareness on this initiative was applauded. Participants noted that it would be considerably improved if governments increased information sharing (namely of best practices), designated points of contact, and developed and shared comprehensive national action plans. Regional organizations also should become more engaged in facilitating implementation of the Resolution and in reviewing and assessing national reports or assisting in their preparation as required/requested.

8. Next steps should include an examination of measures for enhancing 1540 implementation in a way that supports greater regional economic integration. (The CSCAP WMD SG is working on a Memorandum which establishes general principles and recommended measures for more effective implementation of UNSCR 1540.)

9. WMD SG participants are fully aware of the sensitivities that exist regarding the Proliferation Security Initiative (PSI) but note that concerns about its legality and application methods are being addressed. Greater examination of the PSI's role in capacity building in support of UNSCR 1540 seems warranted.

10. There is a sense of frustration that implementation of the 2010 NPT Action Plan is lagging across the board. Numerous action items related to disarmament are being ignored. This augurs badly for next year's PrepCom, where the P-5 have to report on their efforts to move toward disarmament, and for the 2015 Review Conference.

11. While many states view US President Barack Obama's disarmament agenda articulated in his Prague speech as a positive development, there is growing skepticism that enough political leadership and clear vision can be found to follow through to close the divide between nuclear weapon states and non-nuclear weapon states.

12. A new civil society movement centered on articulating the humanitarian consequences of nuclear weapons in an effort to delegitimize and eliminate them is gaining traction. However, this approach is contested, especially among the P-5 states, which have characterized it as a distraction to the nuclear disarmament agenda. There was some agreement that if the humanitarian consequences initiative were to sustain momentum, it will have to focus on identifying the processes necessary to delegitimize the use of nuclear weapons.

13. Participants expressed concerns about North Korea's recent missile and nuclear tests and urged Pyongyang to refrain from provocative rhetoric and actions. There was general skepticism about the prospects for finding an agreement that would enable a return to the Six-Party Talks in the near future, while there was general agreement that full implementation of UN sanctions is required in the meantime. Pyongyang was strongly encouraged to open direct dialogue on

broader Peninsula security issues with the ROK government to help defuse tensions and create a better atmosphere for tension reducing measures. The possibility of a five-party dialogue was also discussed.

14. There is recognition that coordination among all parties is helpful to address the sometimes contradictory calls for increased pressure and for constructive bilateral and multilateral dialogue on the Korean Peninsula. As a starting point, it is imperative that individual states keep others apprised of their efforts to advance dialogue. In the absence of Six-Party Talks, ASEAN/ARF and CSCAP can play a facilitating role.

15. Missile proliferation is a growing concern in the Asia Pacific. As part of a broader military modernization effort, several governments are developing various kinds of missile systems with longer range and enhanced payload and accuracy. The spread of cruise missiles, in particular, is progressing at a rapid rate.

16. The control regime for missile technology is underdeveloped and vaguely defined as the "means of delivery" for WMD. As a result, it is ill-suited to respond to current missile proliferation threats and unlikely to mature to become a regime comparable to the NPT, the BTWC, and CWC. Fresh thinking is needed to address the issue of controlling the spread of missiles and related technology in the Asia Pacific. A discussion of missile defense capabilities is a key component of such dialogue, along with concerns about growing offensive missile capabilities.

17. Strengthening and investing in health security is essential and urgent. It is best achieved through cross-sectoral cooperation and transparency, both within individual states and at the regional level. Participants recognized the importance of, and the need to enhance, existing disease surveillance networks in the Asia Pacific as a bio-security measure and recognize bio-security as an important component in countering WMD proliferation.

18. CSCAP WMD SG welcomes the opportunity to present its findings at ARF ISM/NPD meetings and remains committed to holding back-to-back meetings with the ISM/NPD when/as appropriate. We welcome ISM co-chair representative presentations at the WMD SC meetings as well.