## Preface Mohamed ElBaradei

For multilateral arms control agreements, verification by an objective, technically credible and independent body is central to building mutual trust and confidence among parties, providing each state with the ability to demonstrate compliance convincingly. Over the past five decades, a broad variety of diplomatic and political strategies has been pursued in order to achieve the twin objectives of nuclear nonproliferation and disarmament. Verification has comprised an important component of these strategies, with the International Atomic Energy Agency (IAEA) playing a key role in validating the effectiveness of some accords through its nuclear safeguards system.

The 1970 Treaty on the Non-Proliferation of Nuclear Weapons (NPT)—for which the IAEA is entrusted with verifying the nonproliferation commitments of states parties—is the closest any arms control and disarmament agreement has come to achieving universal membership. With 187 states parties, it remains the most notable accomplishment of efforts aimed at multilateral nuclear arms control. Four nuclear weapon-free zone agreements have also been concluded—covering Africa, Latin America and the Caribbean, Southeast Asia and the South Pacific—to bolster, in a regional context, nonproliferation commitments made under the NPT. In each case, the IAEA has been assigned verification responsibilities.

The Agency's verification experience, however, has not been a positive one in all respects. Discoveries made in Iraq after the 1991 Gulf War, as well as later revelations involving North Korea, undermined the assumption that threats to the nuclear nonproliferation regime were external to this group of nations. These events underscored the fact that the IAEA verification system was neither sufficiently robust nor comprehensive, because of its narrow focus on declared nuclear activities and its limited rights of access to information and sites. (The system was designed in the 1970s following the conclusion of the NPT, and was intended to generate the required nonproliferation assurances.) This reality prompted the international

community to empower the Agency with improved verification tools. Important measures were incorporated into a model protocol—additional to safeguards agreements—that was approved by the IAEA Board of Governors in 1997.

Effective implementation of the protocols based on this model will greatly enhance the Agency's capability to offer effective assurances of compliance with nonproliferation commitments. This is because the Additional Protocol is designed to provide the IAEA with the tools to verify not only declared activities, but also possible undeclared ones. Such authority is essential if the Agency is to fulfil its responsibilities under the NPT and the four nuclear weapon-free zone agreements—responsibilities that are not limited to nuclear material actually declared by each non-nuclear weapon state party, but extend to all nuclear material in each state. The Protocol provides for the submission of a broader range of information about all aspects of each state's nuclear programme and nuclear-related activities, and grants IAEA inspectors broader rights of access to nuclear-related facilities and locations. Consequently, only when a state has both a comprehensive safeguards agreement and an additional protocol in force can the IAEA implement the verification requirements contained in Article III of the NPT in a comprehensive manner.

A current priority for the IAEA is the 'integration' of traditional safeguards activities with the strengthening measures under the additional protocols. 'Integrated safeguards' promise to usher in a new era of nuclear verification—a 'smart', non-discriminatory system that is designed to draw comprehensive conclusions about a state's compliance with its nonproliferation obligations. However, the effectiveness of this approach depends on the extent to which it is implemented worldwide—it can only be fully effective if required safeguards agreements and additional protocols are brought into force by all states that have committed themselves to do so.

Key to the implementation of an efficacious nuclear verification regime, though, is the level of available financial resources. The IAEA currently safeguards over 900 facilities in 70 countries on a regular budget of approximately US\$80 million a year. While its responsibilities in this field have continued to grow, the safeguards budget has been restricted for over a decade by a 'zero real growth' policy, forcing a reliance on 'voluntary' funding for almost one-fifth of safeguards activities. Clearly, this situation must be rectified if the IAEA is to continue to provide credible verification assurances.

With regard to nuclear disarmament, meanwhile, the end of the Cold War led to good progress in the early and mid-1990s. However, the process slowed towards the end of the decade. Strategic Arms Reduction Treaty (START) I and START II—each with detailed bilateral verification provisions—introduced significant cuts in deployed strategic weapons. But START II has yet to enter into force. Efforts to end nuclear weapons development reached an important milestone with agreement on the Comprehensive Nuclear Test Ban Treaty (CTBT) in September 1996. Yet the reluctance of a number of key states to take the necessary steps to bring the CTBT into force, together with the ongoing debate on the validity of the 1974 Treaty on the Limitation of Anti-Ballistic Missile (ABM) Systems, has led to stagnation in arms control and disarmament.

This stagnation derives in large part from continuing reliance on nuclear weapons as a deterrent. Looking ahead, unless the international community is willing to tolerate a world with scores of nuclear weapon states, it must first find ways to bridge the divide between the 'haves' and the 'have-nots'. The present situation, as stated by the 1996 Canberra Commission on the Elimination of Nuclear Weapons, 'cannot be sustained, [because] the possession of nuclear weapons by any state is a constant stimulus to other states to acquire them'.

The feasibility of moving towards the elimination of current nuclear arsenals is dependent on the development of a credible alternative to nuclear deterrence—a security system that is functional and inclusive and one that all states can rely on with confidence. Ultimately, the greatest disincentive to acquiring nuclear weapons and other weapons of mass destruction will be a security system that is rooted in economic and social development, good governance, respect for human rights and an agreed process for the peaceful settlement of disputes. The existence of mechanisms for the credible and independent verification of arms control and disarmament agreements will be an essential component.

In considering existing and future means for verifying compliance with arms control agreements, a number of prerequisites and improvements must be emphasised. First, the verification organisation must have the authority to perform its tasks; all states parties to an agreement must provide it with the power to carry out its mission effectively. In the case of the NPT, this means that all parties must bring into force their safeguards agreements and additional protocols. Over the

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past few decades, many countries have been willing to assume obligations relating to an increasing array of activities with international dimensions. Some states, however, clearly still have difficulty accepting the increased transparency that results from some of these new commitments.

Second, the verification organisation must have the required resources; the complexity of a mission must be recognised and the verification organisation provided with the necessary support—state of the art technology, qualified inspectors and analytical staff and appropriate funding. Policies imposed indiscriminately to cut or cap budgets, while simultaneously requiring that tasks of increasing volume and intricacy be carried out, will lead to diminished verification assurances.

And third, the verification organisation must be backed up by enforcement. The verification organisation should be relied on for verifying compliance with the agreement in question, but must be supported by enforcement mechanisms established by the parties or, if necessary, by the United Nations Security Council.

All of these enhancements will not be achieved overnight; they will only be attained through persistent effort and continued international dialogue. Non-governmental actors, such as VERTIC, have played—and will continue to play—a significant role in the field of verification research and training, as well as in disseminating information about the importance of verification in arms control and other agreements. Only by keeping the international community and civil society engaged can sustained progress be made towards the ultimate goal of establishing a safer and more humane world.

Dr Mohamed ElBaradei is Director General of the International Atomic Energy Agency.