

Security

today & tomorrow

by Mohamed ElBaradei



This year, in July 2007, the IAEA marks its first half century of international service as the world's "atoms for peace" organization and chief inspectorate to help brake the spread of nuclear weapons. What lies in store for the IAEA? What role should and can it play to help lay a firmer foundation for global security and development?

IAEA Director General and Nobel Laureate Mohamed ElBaradei reviews the major challenges and opportunities he sees ahead.

Not long ago, some of the world's top minds singled out the worst threats facing the world today and in the foreseeable future.

They were members of a United Nations High-Level Panel that assessed and identified five categories of threats: The first includes poverty, infectious disease, and environmental degradation. The second, organized crime. Third, terrorism. Fourth, armed conflict — both within and among States. And fifth, weapons of mass destruction.

deep sense of injustice, anger and humiliation. This in turn provides an ideal environment for breeding violence of all types, including extremism, civil strife and interstate wars. And it is in regions of longstanding conflict where countries are most frequently tempted to increase their standing or seek greater security through the pursuit of nuclear weapons and other weapons of mass destruction.

Clearly, this is a deadly combination of threats. Maintaining the status quo is not an option.

The world can build a stronger foundation for the next half century...and beyond

What struck me in reading the panel's report is that these are all, without exception, "threats without borders". They cannot be solved by any one country; by their nature, they demand global responses and multinational cooperation.

What was also quite obvious is that these threats are all interconnected. Poverty is frequently coupled with human rights abuses and a lack of good governance — which results in a

In a recent essay, four US *éminences grises* — Henry Kissinger, William Perry, George Schultz and Sam Nunn — argued strongly for the United States and the world to move towards a world free from nuclear weapons: "Unless urgent new actions are taken," they wrote, "the US soon will be compelled to enter a new nuclear era that will be more precarious, psychologically disorienting, and economically even more costly than was Cold War deterrence."

The Challenges

Let me briefly offer a more detailed picture of the key challenges we face.

First, in my view, the global community has a distorted sense of priorities, which has resulted in many inequities and insecurities.

World governments, in total, spend roughly US\$100 billion per year on foreign aid. That may sound like a lot. But compare the amount spent, for example, on pet products—US\$35 billion annually in the US alone. One-third of the amount of all foreign aid. Or contrast it with the amount that governments spend every year on weapons of war—well over 1 trillion dollars, ten times more than is spent on aid.

Yet the need for aid is staggering. Forty percent of humanity live on less than two dollars per day. 850 million people go to bed hungry every night. Experts tell us that 20 000 people — most of them children — die every day from conditions related to poverty, such as hunger and waterborne diseases. In other words, they are simply too poor to stay alive.

These numbers speak for themselves.

Another sign of distorted priorities is our inability to resolve longstanding regional conflicts like those in Middle East and the Korean Peninsula. These and other conflicts could be solved. They persist because the international community, despite intermittent efforts, has not made the necessary investments nor mustered the needed resolve to achieve solutions. It is no coincidence that such regions are often the focal points for concerns over proliferation of weapons of mass destruction.

On the nuclear front, the security challenges are no less daunting. Some refer to the “ongoing erosion” of the nuclear non-proliferation regime. I am inclined to agree. But this should come as no surprise. The Treaty on the Non-Proliferation of Nuclear Weapons (NPT) came into force more than 35 years ago. Since then, the world has undergone rapid changes on many political, technological and security fronts. The problem is that we have not made the necessary adjustments to match these new realities.

The most dramatic outcome has been the clandestine pursuit of nuclear weapons and nuclear weapon capability by a number of countries. Coupled with that has been the emergence of what I have called a ‘nuclear supermarket’ — an illicit network of trade in sensitive nuclear equipment and designs.

Sometimes we tend to forget that the goal of the NPT is a world free of nuclear weapons. But the reliance on nuclear weapons by some countries goes on unabated. We still

have 27 000 nuclear weapons in existence. Many remain on the same “hair trigger alert” status that existed during the Cold War. Nine countries are known to have these weapons — and more than 25 others are members of alliances that rely on nuclear weapons as part of their military posture. Some nuclear-weapon States are making plans to renew their stockpiles, or even to develop new, more “useable” weapons. Yet at the same time they continue to preach to other countries that nuclear weapons are not good for them.

The linkage between non-proliferation and disarmament should by now be obvious. As long as some countries rely on nuclear weapons for their security, others will be inclined to emulate them. As I have said before, we must abandon the unworkable notion that it is morally reprehensible for some countries to pursue weapons of mass destruction, yet morally acceptable for others to continue to rely on them for their own security.

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Another emerging and more complex threat is what I would call the proliferation of “nuclear capabilities.” By that I mean the spread of sensitive nuclear technologies—specifically, uranium enrichment and plutonium separation. While perfectly legal under the NPT treaty, these technologies also give the countries that have them the potential capability to make the nuclear material useable in weapons.

With growing concerns related to both climate change and energy security, nuclear power is looked at by an increasing number of countries as an attractive option. And in order to maximize energy independence, more countries are also becoming interested in mastering the entire nuclear fuel cycle.

While understandable, this is a dangerous development. The last thing we need is more “virtual nuclear-weapon States” — countries with the capability to produce a nuclear weapon in a matter of months, should they so choose.

Finally, we face the frightening prospect of nuclear or radiological terrorism — the possibility that a nuclear weapon

or nuclear material could be stolen. Thousands of tonnes of weapons-useable nuclear material — high enriched uranium and plutonium — exist in military and civilian stocks.

There are also large, diverse quantities of radioactive material in existence — much of it being used for humanitarian purposes. The hazards of this material vary according to composition and intensity — but its sheer abundance makes it easier to acquire.

Despite tremendous advances in global agricultural production, many countries still face enormous obstacles in supplying sufficient food for their populations. Boosting agricultural production requires enhanced crop varieties, effective pest control measures, increased soil fertility and better soil and water management. The IAEA helps local scientists and farmers with nuclear techniques that support each of these goals.



on ethnicity, race or religion. Whatever the cause, it is a bleak vision of the future.

It is not too late, however, to choose the second option — working towards the establishment of a “Global Village” — a world in which all peoples and nations are viewed as neighbors on a shared planet, with shared core values, and with equal rights and opportunities.

If an extremist group managed to detonate a “dirty bomb” in an urban area — that is, a quantity of radioactive material packaged with conventional explosives — the result would not be nearly as devastating as a nuclear explosion. But it would still be sure to cause mass panic, widespread contamination and major economic disruption.

The IAEA maintains an Illicit Trafficking Database, consisting of reports of theft, smuggling, or loss of control of nuclear and radiological material. Last year alone, we had 149 such incidents reported. Fortunately, none of these incidents involved a significant quantity of nuclear material or a powerful radioactive source. But the indication is clear that this is not a hypothetical threat.

In the past five years, the international community has made great progress in securing these materials. But it is a race against time, and it is not yet certain who is winning.

These are some of the challenges we face. They are urgent and major challenges. But it is not at all clear today in which direction we will go.

In my view, there are two options. Down one road lies what some are calling a “clash of civilizations” — a clash based

The Opportunities

I would like to paint a brighter picture, focused on how to fix—or at least to begin addressing—these challenges.

First, we should pursue strategies not only to create wealth, but also to share the wealth of the planet more equitably. A recent study by the United Nations University found that, as of the year 2000, the richest one percent of the world’s population owned 40 percent of the world’s assets. By contrast, the poorest half of humanity owned barely one percent of global wealth.

Practical steps could be taken to begin redressing these inequities. I have already mentioned the need for increased aid — official development assistance.

But other needed measures would involve not simply handing out money, but leveling the playing field. Every year, the European Union, the United States and Japan in total spend US\$260 billion on agricultural subsidies — investments that, in effect, guarantee that farmers from poor countries cannot compete with their already wealthy counterparts. People from developing countries are eager to lift themselves out of poverty through trade. They should be given that chance.

A related strategy is to invest in more advanced science and technology to meet development needs. Cutting edge achievements in areas such as nanotechnology and biotechnology hold great hope for the future. But technology investments normally follow the marketplace—with the result that innovation tends to serve primarily the needs of developed countries. Developing countries often receive scant benefit. More emphasis should be placed on scientific and technological innovation that can address the problems facing the poor parts of the world. Medical remedies to combat malaria and other developing country diseases are but one example.

Capacity building in basic science and technology is a prerequisite for helping developing countries to address many basic needs — improving access to food, water, energy, healthcare, housing and education. At the IAEA, many of our activities are designed to build the capacities of our Member States in using advanced nuclear techniques for human development.

How does this work? Let me give you an example.

Food security is among the most challenging problems facing poor countries. Boosting agricultural production requires enhanced crop varieties, effective pest control measures, increased soil fertility, and better soil and water management.

Under national and regional projects, the IAEA helps local scientists and farmers with nuclear techniques that support each of these goals. The idea is not only to boost food production, but also to sustain it while preserving the environment.

In the past five years, in Africa alone, six new varieties of crops have been officially released — plants with higher yield, improved nutrition, and more hardy characteristics for harsh environments. This includes new varieties of sesame in Egypt, cassava in Ghana, wheat in Kenya, banana in Sudan, and finger millet and cotton in Zambia.

Food security is just one area of IAEA assistance. We also help countries build advanced nuclear capacity to manage groundwater resources, combat diseases, improve nutrition, boost industrial productivity, and protect the environment.

Energy is a major factor in development. Nearly every aspect of human development — whether in the health, agricultural, educational, or industrial sector — depends heavily on reliable access to modern energy services.

And the current picture, once again, is one of imbalance. Roughly 1.6 billion people — one quarter of the world's population — have no access to electricity whatsoever. About 2.4 billion still use biomass for cooking and heating.

To give a comparison: in energy-poor countries like Ethiopia and Eritrea, the per capita electricity consumption is about 50 kilowatt-hours per year. That translates to an average availability of about 6 watts for each citizen — less than enough to power a personal computer. By contrast, the developed countries that make up the Organisation for Economic Cooperation and Development (OECD), on average, consume electricity at a rate per capita of 8600 kilowatt-hours per year — roughly 100 times higher.

On the nuclear front, a high percentage of the 442 nuclear power reactors currently in operation are in industrialized countries. However, of the 29 new reactors under construction, 16 are in developing countries.

More and more developing countries are expressing an interest in nuclear power. But the infrastructure requirements are intimidating — not only the industrial manufacturing facilities, but also the complex legal frameworks and the human and financial resources required. Acquiring such a sophisticated technology calls for careful long-term planning, preparation and investment.

The IAEA helps its Member States to build capacity in managing their development of the energy sector. The goal is not to promote nuclear power; in fact, in many cases, nuclear is not the preferred option. Rather, we seek to promote the sustainable use of natural resources and to increase access to affordable energy services.

A key aspect of this effort is our energy assessment services. Through these services, we develop energy planning models tailored to each country's special circumstances. We train local experts to forecast energy demand, to identify least-cost options, and to bring these and other factors together into a national decision making process. IAEA energy planning tools are now used in more than 100 countries around the world.

But advanced science and technology must also be guarded against misuse. In the nuclear arena, there are a number of aspects that must be strengthened.

On the nuclear security front, we must make it our highest priority to stem the illicit trade in nuclear and radiological materials. This means finishing the effort to secure facilities at risk, where such materials are used or stored. It means improving the ability of police forces and border guards to detect smuggling efforts. It means limiting the use of nuclear energy in the civilian sector to low enriched uranium fuel, which cannot as readily be used in weapons.

We should also create a mechanism to assure the supply of nuclear fuel for bona fide users. This would remove the motivation — and the justification — for each country to have its own uranium enrichment or plutonium separation

capability. At the IAEA, we are working on developing such a mechanism, through the establishment of an international fuel reserve bank. In the longer term, the goal would be to bring all such operations under multinational control.

The IAEA itself should be strengthened. We play a central role in verifying that nuclear activities are exclusively for peaceful purposes. But our verification authority varies from country to country. The so-called additional protocol — developed in the mid-1990s after the discovery of Iraq's clandestine nuclear programme — gives Agency inspec-

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tors better access to look for undeclared nuclear materials and activities. But more than 100 countries still don't have it in force. We should make it universal.

Our financial resources are also extremely stretched. The IAEA verification budget — the funds with which we are supposed to inspect nuclear activities around the world — amounts to about US\$130 million. That falls well short of our increasing responsibilities and needs.

With more funds, we could purchase a lot more satellite imagery. We could beef up our laboratories with state-of-the-art capabilities, like fission track particle analysis — to help us track down and pinpoint the nature of undeclared nuclear activities, even long after the fact. We could bring on more inspectors, purchase improved instrumentation, and be more confident about staying ahead of the game technologically.

The political realities of recent years have made clear that IAEA inspections can be a critical component of decisions on war and peace. In that light, making the Agency more effective would be a very wise investment.

The international community is also in critical need of accelerated efforts on nuclear disarmament. For many of the nuclear weapons currently stockpiled, a single warhead is equivalent to hundreds of Hiroshimas waiting to happen. There is no rational justification — short of anticipating an attack by aliens — for maintaining the current global inventory, nor for maintaining the Cold War “hair trigger alert” status of many such weapons.

I am reminded of a quote by former US President Ronald Reagan, who was firmly of the opinion that all nuclear weapons should be abolished. Nuclear weapons, he said, are “totally irrational, totally inhumane, good for nothing but killing, possibly destructive of life on earth and civilization.”

Each of the strategies I have outlined so far will contribute to reducing the insecurities and inequities that now exist. Each is a much-needed step to contributing to global peace.

But in the broadest sense, we will only succeed in building a “Global Village” if we begin to develop an alternative system of collective security. A system in which no country, or group of countries, needs to rely on nuclear weapons for its security. A system with effective global mechanisms for conflict resolution. A system in which longstanding regional tensions, like those in the Middle East and the Korean Peninsula, are given the priority and attention they deserve. A system that is equitable, inclusive and effective.

And above all, a system that is people centred. Because I am convinced that, to achieve peace, the system must be based on achieving “human security”. The international community must be ready to defend the life, freedom and dignity of every individual — anytime, anywhere — whether the aggressor is an occupying force or a ruthless dictator.

This is not simply a moral imperative, but a prerequisite for our own security. With globalization, it is abundantly clear that insecurity anywhere is insecurity everywhere.

If we view conflict through the lens of human security, we will quickly see the advantage of finding solutions through dialogue rather than through military force. It is time to move away from thinking of dialogue as a reward for good behaviour—and to recognize it instead as an essential tool for effecting such behaviour. My enemy today could very well be my partner tomorrow. We will have to share resources, combat common environmental and health issues, and interact with each other on many levels.

By reconciling our differences, we can and must create the environment necessary for building and sustaining a stronger framework for international peace and security.

*Mohamed ElBaradei is Director General of the International Atomic Energy Agency and co-recipient of the 2005 Nobel Peace Prize along with the IAEA.
E-mail: official.mail@iaea.org*