

Analysis

THE EXPERIENCE OF GLOBAL PARTNERSHIP FOR THE MIDDLE EAST

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International cooperation on WMD nonproliferation is making first tentative steps in the Middle East. The theory of cooperation is being tested in practice by the project to destroy the Syrian chemical weapons stockpiles.

But are opportunities for cooperation limited to Syria only?

GLOBAL PARTNERSHIP AND ECONOMIC CRISIS

The Deauville Summit decided to extend the Global Partnership Against the Spread of Weapons and Materials of Mass Destruction (GP) beyond 2012 and to continue to use it as an effective mechanism with which to counteract the threat of WMD terrorism¹. At the same time, recognizing that the risk of the proliferation of weapons and materials of mass destruction is a global one, the countries that took part in this summit highlighted the need to broaden the program's geographical scope and to involve other regions, not just the post-Soviet space.

Among the main areas of cooperation under the program, they highlighted nuclear, radiological and biological security, the provision of employment for scientists working in sensitive industries, and the provision of assistance to third-party states in implementing UN Security Council Resolution 1540, adopted in 2004.

Since 2002 a colossal amount of work has been done. According to the latest figures, projects in Russia and CIS countries have accounted for the bulk of the more than \$21 billion that has been spent². At the same time, as Alexandre Gorbachev, Director of the French Alternative Energies and Atomic Energy Commission's (CEA) Global Partnership program, pointed out, those taking part in these projects have amassed a significant amount of experience that can be put to good use in other countries that have either little or no involvement in the program at present³.

At the G8 Summit in Northern Ireland on 17-18 June 2013, the main items on the agenda were the civil war in Syria, the development of trade, the international exchange of information on taxation, and transparency in public administration. The summit paid far less attention to challenges associated with ensuring nuclear security and the nonproliferation of WMD. As a result, the final documents from the meeting make no mention of any further action to develop the Global Partnership. The only reference to this issue came in the extremely modest Point 91 of the communiqué adopted by the G8 leaders, which consisted of a routine sentence stating that preventing the proliferation of WMD is a top priority⁴. So the expected breakthrough on these issues never materialized. Members of the GP need to establish some clear directions for the program's future development.

Officially, there is no general, agreed document in which GP participants have set out either a specific timeframe for future cooperation, or the specific levels of funding assigned to the program. In the meantime, countries such as the United States and

Canada have already said they intend to continue funding the GP. The United States has made a commitment to contribute \$10 billion to help fund projects delivered under the program between 2012 and 2022⁵, while Canada has already published its plans to provide \$367 million between 2013 and 2018⁶.

Other donor countries are yet to put an exact figure on their continued participation in the program. Most probably, however, this is driven by the lack of clear guidelines for the development of the Global Partnership and by the lack of available funds at a time of economic crisis, rather than by a lack of desire to continue making a contribution to combating the proliferation of weapons and materials of mass destruction.

As things stand, GP participants have made a commitment to see projects in Russia and in the post-Soviet space through to the end in the next few years. Irrespective of this, however, those countries that are actively and effectively advocating the nonproliferation of weapons of mass destruction and the materials required for their manufacture are clear in their understanding that, given its global nature, modern terrorism must be fought right around the world. In this respect, it can be said that the G8 is not only engaged in a constant search for new donors to contribute to the program, but is also examining the prospects for a further investment of effort and funding in other parts of the world that have not attracted the required attention.

In this context, it is the Middle East that stands out dramatically from the world's other regions⁷. It is a region that is never calm, and the processes taking place there can only give cause for serious concern about how to prevent potential incidents in which either WMD or the technology and materials used for their manufacture could be leaked. The WMD factor is gradually starting to play an increasingly noticeable role in events relating to the threat of terrorism in the Middle East.

NUCLEAR SECURITY IN THE REGION

In order to provide a comprehensive assessment of existing and future proliferation threats in the Middle East, we shall assess the current state of nuclear security in each individual country either currently engaged in or planning to become engaged in civilian nuclear activities.

ALGERIA

Algeria has two nuclear reactors – Nur (1MW) and Es-Salam (15MW). Both reactors use LEU. The nuclear material and the installations have been placed under IAEA safeguards. Algeria has plans to develop atomic energy. In May 2013, Algeria's energy and mining minister, Youcef Yousfi, announced that the country's government was planning to build a nuclear power plant (1,000MW) by 2025⁸. According to statements from the country's foreign minister, Mourad Medelci, the Algerian Institute of Nuclear Engineering, which was founded in 2011, will be responsible for training specialists to work at the nuclear power plant, as part of a program that will include courses in nuclear safety and security⁹. The Nuclear Regulation Agency has been authorized to monitor nuclear security. In the meantime, despite the Algerian Foreign Ministry saying that nuclear security is an extremely important priority for Algeria, the Es-Salam reactor, which is too powerful only for conducting research, is capable of producing about three kilograms of plutonium per annum. When it carried

out checks at Es-Salam in 1994, the IAEA did not find the three kilograms of enriched uranium that Algeria had declared¹⁰. Besides, Algeria has yet to sign the Additional Protocol that would have improved the effectiveness of IAEA checks. Nevertheless, aside from the Additional Protocol, the state is party to all agreements on nuclear security. Algeria is also a party to the Global Initiative to Combat Nuclear Terrorism (GICNT) and, as of 2012, to the Nuclear Smuggling Outreach Initiative (NSOI). It can be said, therefore, that Algeria has laid a solid foundation for the safe and secure development of civilian nuclear activities, a foundation that needs to be strengthened by the country taking practical measures to ensure nuclear security.

Algeria is involved in GP projects such as:

- The Export Control and Related Border Security (EXBS) Assistance Program. The United States made plans to fund this program, but no decision was reached on the timeframe for the program's implementation in the Middle East and North Africa, and so it failed to get off the ground.
- The International Nuclear Safeguards and Engagement Program (INSEP). The objective of this program was to train staff, hold seminars and transfer equipment in order to improve nuclear safeguards measures. Funding for this project was also earmarked for the period 2006-2011, but it did not materialize.

At present, Algeria is bringing its national legislation on nuclear security, on combating WMD proliferation and on export and border controls into line with the international standards laid down in the Convention on the Physical Protection of Nuclear Material (CPPNM), International Convention for the Suppression of Acts of Nuclear Terrorism (ICSANT), the Code of Conduct on the Safety and Security of Radioactive Sources and the Guidance to the Code. At the Nuclear Security Summit in Seoul, Algeria also made a voluntary commitment to set up its own nuclear security training and assistance center¹¹. In this regard, it seems necessary to make the following recommendations to address nonproliferation and nuclear security challenges in Algeria:

- Provide Algeria with expert assistance in bringing its national laws on nuclear security into line with international standards, as well as providing financial assistance for the GP projects previous planned by the United States.
- In addition, as shown by the seizing of hostages by Al-Qaeda in the Islamic Maghreb at the In Amenas gas plant in January 2013, when 38 hostages were killed along with 29 terrorists, Algeria's army and security forces do not currently possess the knowhow required to prevent terrorist attacks, even at strategic facilities. So a precondition for the construction of a nuclear power plant in Algeria must be the retraining of the agencies responsible for the physical protection of nuclear facilities.
- Improve the nonproliferation culture in Algeria by organizing training programs for nuclear industry specialists and officials.

EGYPT

Like Algeria, Egypt has a fairly advanced nuclear research program. There are two research reactors situated at Inshas, near Cairo – a Soviet ETRR-1 (2MW) and an Argentine ETRR-2 (22MW). Both reactors use LEU. Egypt also has a system of hot cells and a facility for the disposal of spent nuclear fuel. In 2013 Egypt announced it was reviving its plans to develop nuclear energy. The nuclear power plant will be situated in Dabaa, and the Egyptians are expecting the first reactor to start operating by 2020¹². The nuclear sector is regulated by the Nuclear and Radiation Control Authority. The department of nuclear and radiation engineering at Alexandria University trains specialists to work at nuclear facilities. At present, the curriculum at this department does not include the study of nuclear security¹³. Teachers working in this department need to be trained in this discipline so that they can introduce a similar course at the university.

Egypt has not signed the CPPNM or the Additional Protocol, nor has it ratified the ICSANT, but it has made commitments under the Code of Conduct on the Safety and Security of Radioactive Sources and the Guidance to the Code. Egypt's failure to engage fully in nuclear nonproliferation agreements and initiatives stems from Cairo's fundamental position that the country should not assist in nuclear nonproliferation until Israel abandons its own nuclear weapons and agrees to the Middle East becoming a WMD-free zone¹⁴. Meanwhile, Egypt recognizes the risk of possible acts of nuclear terrorism and the sabotage of nuclear facilities.

Egypt is involved in GP projects such as:

- The Export Control and Related Border Security (EXBS) Assistance Program. The United States made plans to fund this program, but no decision was reached on the timeframe for the program's implementation in the Middle East and North Africa, and so it failed to get off the ground.
- The International Nuclear Safeguards and Engagement Program (INSEP). The objective of this program was to train staff, hold seminars and transfer equipment in order to improve nuclear safeguards measures. Funding for this project was also earmarked for the period 2006-2011, but it did not materialize.
- The Second Line of Defense Program, designed to improve export and border controls over the circulation of nuclear material. The United States was scheduled to provide funds for the period 2002-2011, but the project was never implemented.

Given the instability in the country and the government's plans to develop nuclear energy, it seems necessary to make the following recommendations:

- Cooperating with Egypt under the GP is an extremely significant part of the nuclear nonproliferation agenda in the Middle East.
- Aside from the U.S. projects listed above, which ought to be implemented over the next 10-15 years, funding must be provided to help Alexandria

University add to its curriculum by introducing a course on nuclear security for students studying nuclear-related subjects.

IRAN

Iran has an energy reactor at Bushehr and a research reactor in Tehran, and is also building a heavy-water reactor at Arak. Stocks of low-enriched uranium are stored at Natanz and at Qom. At present, these stocks amount to 6,357 kilograms of uranium-235 at 5percent enrichment and 182 kilograms of uranium-235 at 19.75percent enrichment¹⁵. Iran is actively boosting its capacity to launch a complete nuclear fuel cycle. In 1988 and 1993, Iran carried out experiments to recover spent nuclear fuel, and is believed to have isolated 100 grams of plutonium-239.

Since Iran has not signed a single international document on nuclear security, from the standpoint of proliferation, the threat arising from its nuclear activities has been considered at the political level to be serious. Iran made active use of the services of the notorious A.Q. Khan network¹⁶.

Nevertheless, some positive trends have emerged since the election of a new president in Iran. These trends are opening up the prospect of Iran's full participation in international cooperation on WMD nonproliferation and nuclear security. On November 24, 2013 the Iranian delegation and representatives of the P5+1 group (the five permanent UN Security Council members plus Germany) signed an interim agreement in Geneva on resolving the Iranian nuclear problem. A final settlement of this contentious issue is expected in mid-2014, when the parties plan to sign a comprehensive agreement. It is important that both sides, i.e. Iran and the international community, are demonstrating willingness to seek a lasting compromise on the Iranian nuclear program – although, unfortunately, some forces in the United States, Iran and some Middle Eastern states (especially Israel and Saudi Arabia) are trying to derail the *nuclear deal*. Nevertheless, the chances of the deal being signed are improved by the fact that the new Iranian president was the head of the Iranian team of nuclear negotiators in the past.

In fact, Rouhani has been the most successful of all the Iranian negotiators because he came closer than anyone else to achieving a peaceful resolution of the Iranian nuclear problem in 2003-2004. PIR Center experts believe that Rouhani is a sufficiently moderate politician to achieve a lasting and comprehensive compromise on the nuclear program and to engage his country in international cooperation on WMD nonproliferation. What is more, Iran's spiritual leader, Ayatollah Khamenei, appears to support Rouhani's moderate course. Even before Rouhani's election as president, Khamenei softened his previously uncompromising stance on nuclear negotiations, and started to hint in his statements at the possibility of Tehran making some concessions on this issue¹⁷.

Obviously, efforts to achieve a compromise on the Iranian nuclear problem and build trust in Iran's relations with other countries would also benefit from Tehran's active participation in international cooperation in the area of WMD nonproliferation and nuclear security.

Iran should be encouraged to sign and ratify international agreements and conventions that pertain to nuclear security. The international community should also pursue cooperation with Iran in strengthening the physical protection arrangements at the Bushehr NPP and other nuclear facilities. Such cooperation would be beneficial not only for Iran, which could make use of an opportunity to make its nuclear security provisions less costly and more effective. The international community would also benefit because cooperation in strengthening the physical protection of Iranian nuclear facilities would make the nuclear activities being pursued at these facilities more transparent.

Iran should be encouraged to participate in informal anti-proliferation mechanisms, especially the Global Partnership.

IRAQ

Until 1991, Iraq was in the process of developing its own nuclear weapons program. At present, the site of the former nuclear compound at Al-Tuwaitha, 18 kilometers from Baghdad, houses the radioactive substances caesium-137 and cobalt-60, as well as several tons of radioactive waste.

Iraq's radioactive material is currently being disposed of by the United States, which has been implementing the Iraq Nuclear Facility Dismantlement and Disposal Project since 2008. The program is coordinated by the U.S. State Department, and is funded by three countries: the United States, Britain, and Iraq. The program is mostly being carried out by U.S. organizations (the Sandia National Laboratory, Texas Tech University) and government agencies (the Department of Energy, the Environmental Protection Agency, the Nuclear Regulatory Commission). The Ministries of Science and Technology, Industry and the Environment are responsible for the implementation of the program.

For the GP project, the United States earmarked some \$831,000 for the period 2005-2010 to set up a program to regulate radioactive sources in Iraq¹⁸.

In late 2012, the Iraqi government and the EU signed a memorandum of understanding, which included an agreement that the European Union would provide funding of 2.6million euros (\$3.47 million) to develop a project to build a plant at Al-Tuwaitha to dispose of radioactive waste. The Iraqi Ministry of Science of Technology has said that the design of the facility will take account of the European Union's recommendations. Earlier, in 2009, Iraq and the EU also signed an agreement to train staff on how to handle radioactive material and decommission nuclear facilities left over from the Saddam era¹⁹.

Another problem facing Iraq that could be resolved more quickly and effectively through Global Partnership projects is the need to decontaminate areas with higher levels of radiation created by the use of depleted-uranium weapons (shells, bombs, rockets) by American troops. To date, the Iraqi government has identified 42 sites suffering from high radiation levels and dioxin pollution²⁰ (see map 1).

Picture 1. *Radiation Pollution in Iraq*



Source: *The Guardian*, <http://www.theguardian.com>

In terms of export and border controls, there have been successes for Iraq in this area. In particular, in 2011, at the port of Umm-Qasr, the Iraqi authorities used radiation detectors to uncover material with heightened levels of radiation that had been transported from Japan²¹.

Iraq is the Middle East's largest recipient of funds intended to retrain nuclear weapons specialists. The United States has spent more than \$42 million on projects under the Iraq Scientist Engagement Program²².

Through the GP, projects should be launched as soon as possible to decontaminate areas of Iraq polluted by radiation, as well as support the construction and operation of a plant to dispose of radioactive waste.

ISRAEL

Israel is the only state in the Middle East with a nuclear arsenal of between 100 and 200 warheads. The state's stocks of fissile material are estimated to include 300 kilograms of highly enriched uranium (HEU) and approximately 820 kg of plutonium-239²³. Israel has two research reactors, at Dimona and at Soreq. The latter reactor has been placed under IAEA safeguards. Both reactors use LEU. Israel has enrichment and recovery facilities²⁴, which raises the risk of nuclear material proliferation in the absence of any international safeguards. The country's nuclear sector is regulated by the Israeli Atomic Energy Commission. Nuclear specialists are trained at the department of nuclear engineering at Ben-Gurion University, the School of Physics and Astronomy at the University of Tel Aviv, the Shalhevet Fryer Center and the Weizmann Institute. None of these higher education institutions provide a specialist education in the physical protection of nuclear material, or separate courses on this subject.

Of the various GP projects, the United States included Israel in the Second Line of Defense Program, designed to improve export and border controls over the circulation

of nuclear material. The project did not materialize. According to the Israel Hayom newspaper, the physical protection arrangements for the Israeli reactor at Dimona were upgraded in 2011²⁵. It is protected from aerial rocket attacks by the Iron Dome missile defense system. In the meantime, it seems expedient to make the following recommendation:

Israeli troops protecting this nuclear facility should increase their involvement in joint exercises with other countries that have signed up to the GICNT, in order to acquire the cutting-edge experience that has accumulated there, as well as sharing its own experience, since experts estimate that Israel has produced some very advanced work in the area of combating nuclear terrorism. It would also be useful for Israel to tap into the experience of improving physical protection arrangements accumulated under the GP. For this to happen, it would be useful for Israeli specialists to take part in consultations with the relevant experts from GP member states.

JORDAN

Jordan does not have any fissile material. At present, the Korean company KEPCO is building a research reactor (5MW) in Jordan. Jordan intends to build a nuclear power plant with Russia's assistance. In late October 2013 the Jordanian government announced its willingness to award a 10bn-dollar contract for the construction of the country's first NPP to *Atomstroyexport*, a Rosatom division.

Since 2007, the Jordanian University of Science and Technology has been providing a course in "nuclear engineering". None of Jordan's higher education institutions offer any courses on nuclear security. Civilian nuclear activities are regulated by the Jordanian Energy Regulation Commission.

A positive achievement for Jordan is that it has adopted a new law on nuclear security. At the same time, at present the Jordanian system of export controls does not regulate the transportation and sale of nuclear and dual-use material. In addition, although Jordan has introduced penalties for the transportation of nuclear material with intent to commit an act of terrorism, there is no provision for the criminal prosecution of those suspected of transporting dual-use material²⁶.

Jordan has taken part in the following GP projects:

- In 2012, along with Oman and Yemen, Jordan took part in the US Export Control and Related Border Security (EXBS) Assistance program through the GP.
- In December 2011, in conjunction with the European Union, Jordan opened a nuclear security training center.

Subject to the GP's future involvement in improving nuclear security in Jordan, donor countries need to concentrate on supporting an existing project on export and border controls, as well as on funding measures to improve the nuclear security culture and competence among future nuclear industry employees, using the training center set up by Jordan and the EU as a foundation.

LIBYA

Libya has a research reactor at Tajura. The reactor uses LEU. Tripoli has signed all the agreements on nuclear security except for the Code of Conduct on the Safety and Security of Radioactive Sources. At present, the instability in Libya poses a threat to the security of the radioactive material held at the research reactor²⁷. In that context, projects need to be undertaken in Libya to strengthen the physical protection of radioactive materials.

Libya has previously received funds from the GP under the following programs:

- An export controls improvement program (\$598,154);
- The International Nuclear Safeguards and Engagement Program (INSEP). The objective of this program was to train staff, hold workshops, and provide equipment in order to improve nuclear safeguards measures. Funding for this project was also earmarked for the period of 2006-2011, but it did not materialize;
- A program focusing on the security of nuclear and radioactive materials (1.5million Canadian dollars);
- The Export Control and Related Border Security (EXBS) Assistance Program. The United States made plans to fund this program, but no decision was reached on the timeframe for the program's implementation in the Middle East and North Africa, and so it failed to get off the ground.

In view of the difficult situation in the country, programs to strengthen the protection of nuclear and radioactive materials through the GP must continue to be funded.

MOROCCO

Morocco has a research reactor in Rabat, which uses LEU. The country has signed all the documents on nuclear security except for amendments to the CPPNM and the Code of Conduct on the Safety and Security of Radioactive Sources. Morocco has plans to develop its own nuclear energy program by 2020-2024²⁸. Nevertheless, in terms of fulfilling the conditions set out in Resolution 1540 (2004), Morocco trails near the back of the field, alongside Libya²⁹. In this context, the following recommendation needs to be made:

Provide expert support through the GP to help ensure the incorporation of the provisions of Resolution 1540 into national legislation.

SAUDI ARABIA

Riyadh plans to build 16 energy reactors by 2030³⁰. Saudi Arabia plans to complete its first nuclear power plant in 2020³¹. Despite the fact that the country has set the bar fairly high in terms of its nuclear energy ambitions, even so it can be said that Riyadh has already made arrangements for the construction of a nuclear power plant in the next few years. As a result, as these plans develop, new threats will emerge, with the risk of the proliferation of nuclear materials. What makes the nuclear security situation even more serious is that Saudi Arabia does not intend to abandon the idea of enriching uranium.

In its January 2013 report, the 1540 Committee describes the country's legislation on export and border controls as deficient in those areas that relate to control lists and export and re-export standards³². In addition, Saudi Arabia does not wish to abandon the idea of enriching uranium.

Through GP projects, Saudi Arabia can be provided with expert assistance to strengthen its export and border controls regime.

SYRIA

Syria has a nuclear research reactor situated in what is effectively a conflict zone. Should government forces lose control of the site even temporarily, the nuclear material held there may find its way into the hands of extremists or criminal groups. The fate of the nuclear facility at Al-Tuwaita in Iraq provides a vivid example of what can happen. Following the fall of the Saddam regime, according to IAEA inspectors, several tons of radioactive material was lost³³.

Meanwhile, the problem of the physical protection, control and accounting of nuclear materials in Syria cannot be resolved through international cooperation mechanisms without the authorities in Damascus taking a decision to this effect.

TURKEY

Turkey has two research reactors, both of which use LEU – ITU-TRR (250KW) and TR-2 (5MW). Ankara and the Russian company *Atomstroyexport* have signed an agreement for the latter to build a nuclear power plant at Akkuyu(4,800MW). Turkey also plans to build two further nuclear power plants. The sector is regulated by the Turkish Atomic Energy Authority.

As Turkey has already started to implement its plans to develop nuclear energy, it needs to be supplied with comprehensive technical and expert assistance on matters of customs and border controls (the Second Line of Defense program) and nuclear security.

UNITED ARAB EMIRATES

The UAE does not have any nuclear facilities. In July 2012 the South Korean consortium KEPCO began building the country's first nuclear power plant at Barakah. The first reactor is expected to begin operating in 2017. Given that, at one time, the UAE was a hub for the A.Q. Khan network, a great deal of work has been done to strengthen its export control regime. In its January 2013 report, however, the 1540 Committee notes that the UAE's export controls legislation does not contain any basic standards, and staff in the customs and border services lack the required training³⁴.

As the UAE is seeking to comply fully with all the requirements made of a state that plans to develop nuclear energy, the country should be given expert assistance in bringing its export controls legislation into line with international standards, as well as providing assistance in the development of a culture of nonproliferation among future

nuclear sector employees. Funding could be provided by the government in Abu Dhabi, or shared equally between the UAE and its partners.

CHEMICAL WEAPONS IN THE REGION

Combined with the instability some of these countries are experiencing and the clear threat of terrorist attacks, these circumstances indicate that there is a strong possibility that WMD will be used in the region. It is well known that, in the second half of the 20th century and the early years of the 21st century, the Middle East has witnessed several instances when chemical weapons were used. In 1967, Egyptian President Gamal Abdel Nasser gave orders for poisonous substances to be used against rebels during the civil war in North Yemen. Between 1980 and 1988, during the Iran-Iraq War, both sides used chemical weapons against each other. In April 1987 and March 1988, Iraqi President Saddam Hussein launched chemical attacks on Kurdish settlements. In 1987, Libyan leader Muammar Gaddafi's regime used rockets armed with chemical weapons against the forces of Chad³⁵.

In 2012-2013, during the ongoing civil war in Syria, the warring sides leveled accusations at each other in connection with several episodes where chemical weapons may have been used. These instances show that the threshold beyond which WMD are used in the region is relatively low. As a consequence, there is a high probability that, should such weapons fall into the hands of radical, non-governmental groups, they may be used against supporters of government forces and against the wider civilian population.

EGYPT

Egypt began to develop chemical weapons in the 1950s. The size of Egypt's chemical weapons stocks is not known. Egypt has yet to sign the CWC, and has not announced that it has disposed of its chemical weapons. Egypt's decision not to sign the CWC, or the CPPNM, is based on its attitude to Israel's decision not to sign up to the NPT. In this context, the GP is unlikely to introduce programs to destroy Egypt's chemical weapons or retrain its chemical weapons specialists at present.

IRAN

In 2008, under the auspices of the OPCW, Iran hosted a training event on providing medical assistance in the event of a chemical attack³⁶. Tehran is strongly opposed to the use of chemical weapons, after Iranian service personnel were targeted with chemical weapons by Iraqi troops during the 1980-1988 war. It is thanks in part to Iran's efforts that the crisis over the Syrian chemical weapons has been resolved. After the international community learned about the use of chemical weapons outside Damascus in August 2013, Iranian president Rouhani made a statement condemning the use of chemical agents or any other WMD. There are reasons to believe that, using its clout as the Syrian government's closest foreign ally, Iran leaned on Bashar Assad to agree to the Russian initiative on destroying the Syrian chemical stockpiles.

It appears that with the arrival of a new president, Iran can now play a constructive role in achieving a Syrian settlement and participate more energetically in strengthening the WMD nonproliferation regime. We would recommend engaging

Iran in achieving a settlement in Syria, where Tehran has a lot of influence. Iran's participation in multilateral talks on Syria (i.e. the Geneva II conference) could help the implementation of the international initiative on the destruction of the Syrian chemical stockpiles. Given that Iran is in possession of advanced chemical technologies, Iranian specialists could be invited to participate in technical measures related to the initiative's implementation.

IRAQ

Iraq began developing its own chemical weapons program a relatively long time ago, in the mid-1960s. In 1991, Iraq declared its reserves of chemical weapons – 3,080 tons of mustard gas, 812 tons of sarin, 250 tons of tabun, and 58 tons of VX gas precursors. In total the country declared 127,941 separate warheads that could be used in order to deploy chemical weapons³⁷. It is believed that all stocks of Iraqi chemical weapons were destroyed in the 1990s, with the assistance of the UN Special Commission on Iraq. Even so, some 500 old chemical weapons have been discovered since 2003. As US Defense Intelligence Lt-Gen Michael Maples pointed out, Saddam Hussein's regime did not maintain precise records of its destruction of chemical weapons³⁸. So at present the possibility cannot be excluded that, although they may have lost their combat properties, there are toxic weapons in the country dating back to the 1980s and 1990s. A potentially similar state of affairs exacerbates the risk of chemical weapons proliferation in the region. For example, a report from the U.S. National Ground Intelligence Center revealed by U.S. Director of National Intelligence John Negroponte said that some of Iraq's chemical weapons may have ended up on the black market, and it may fall into the hands of terrorists and local militants³⁹.

In addition, there is a problem with the former chemical weapons manufacture and storage facility at Al-Muthanna. The facility has two bunkers containing chemical weapons that are in a condition that would pose a danger to anyone who tries to remove them⁴⁰.

It is clear that resolving challenges relating to the destruction of the chemical weapons remaining in the depots is one of the tasks that could be accomplished through the program activities of donor countries as part of the GP. In particular, Germany and Britain have already assumed obligations to provide funding in 2012-2013 to help destroy the chemical weapons at Al-Muthanna, to the tune of 2million euros and 100,000 pounds sterling respectively.

In terms of the destruction of chemical weapons, Russian experience may be of use. Russian and U.S. specialists may be able to provide expert support.

In addition, on 1 June 2013, with the support of foreign security agencies, security officials from the Iraqi Defense Ministry discovered three plants belonging to a local Al-Qaeda cell and designed to manufacture sarin and mustard gas⁴¹. The Iraqi authorities have said that the chemical weapons were intended for use in Europe and North America. The fact that members of the terrorist group were able to manufacture chemical weapons with technological precision shows that the country faces serious challenges in exerting control over the circulation of precursors for the manufacture of

chemical weapons and dual-use materials. Donor countries contributing to the GP program should pay attention to strengthening export controls.

ISRAEL

Despite the fact that Israel is suspected of being in possession of chemical weapons (tabun, sarin, VX), Tel Aviv is a possible partner on export controls in the area of chemical weapons nonproliferation. Although it has not ratified the CWC, Israel has said that it intends to abide by the fundamental principles of the Australia Group, and operates one of the most effective export and border control systems.

Therefore, Israel could be engaged in GP projects by being involved in measures to exchange experience and technologies in respect of export controls for chemical agents, precursors and dual-use materials.

JORDAN

Jordan has never developed chemical weapons and is a party to the CWC. Nevertheless, there is a need for international cooperation in Jordan on export and border controls for chemical agents, precursors and dual-use materials, since the country has a border with Syria, where there are serious concerns over the potential proliferation of chemical weapons. Through the GP, the United States is already undertaking projects to strengthen border controls. This cooperation must be supported and strengthened by continuing to fund the program.

LIBYA

Until 2004, Libya operated a program to produce chemical weapons. When Libyan leader Muammar Gaddafi signed the CWC, he also made a commitment to destroy the country's stocks of chemical weapons by 2011. In total, Libya's chemical weapons arsenals contained 24.7 cubic meters of mustard gas and 3,563 chemical air bombs. By February 2011, 51 percent of the reserves of mustard gas and 40 percent of the precursors for mustard gas had been eliminated⁴². The Interim National Council of Libya (INCL) confirmed its CWC obligations and began to cooperate actively with the Organization for the Prohibition of Chemical Weapons (OPCW) on the elimination of Libya's WMD arsenals. Moreover, the INCL also uncovered two more chemical weapons depots that Gaddafi had not declared⁴³.

The main GP projects implemented in Libya focused on the destruction of chemical weapons and the retraining of chemical weapons specialists. The chemical weapons destruction program was scheduled to continue until 2016⁴⁴. Since this project has not reached its conclusion, then, in order to counteract the proliferation of WMD, this area of work should continue to be financed through the GP program until all of Libya's chemical weapons stocks have been destroyed. Efforts to retrain chemical weapons specialists should focus on using their experience not so much for research purposes as in areas of industry (such as pharmacology) that need to be developed in order to tackle the country's overall economic slump.

Moreover, given the instability in Libya, GP participants should develop a project to strengthen the physical protection of chemical weapons.

SYRIA

The start of the civil war undermined the security of chemical weapons (CW). The use of chemical weapons by unknown perpetrators outside Damascus on August 21, 2013 raised the possibility of a military operation against Syria by the United States and its allies. That military operation was averted thanks to the Russian initiative on the destruction of Syrian chemical stockpiles, which Damascus immediately accepted. On October 14, 2013 Syria officially joined the Organization for the Prohibition of Chemical Weapons (OPCW).

The United States was also forced to accept the initiative after bilateral talks between foreign ministers Lavrov and Kerry in September 2013. As of the writing of this article, the first phase of the Lavrov-Kerry plan for the destruction of Syrian chemical weapons has been implemented successfully and within the agreed deadline. On October 31 the OPCW announced that all the chemical weapons production equipment declared by the Syrian government had been destroyed.⁴⁵ On the same day it was announced for the first time how much of the various chemical agents Syria has: there are 1,300 tonnes stored at 23 facilities (with 41 separate buildings at these facilities).

The plan is that during the second phase of the initiative, the OPCW will develop a specific set of measures to destroy the Syrian chemical stockpiles. Some problems still remain with this particular part of the project. Destroying chemical weapons in a country torn by civil war is not a realistic possibility. Removing Syrian chemical stockpiles to other countries is hardly possible, either, because one after another, Russia, Jordan, Turkey, Norway and Albania have already refused to accept these stockpiles. The United States has said that the Syrian chemical weapons can be destroyed on board the USS Cape Ray, but for this operation to proceed, the U.S. warship with Syrian chemical weapons on board must be allowed to enter one of the Mediterranean ports. So far, not a single Mediterranean country has offered the use of its ports.

In this context, the international community, and primarily Russia and the United States, have an interest in forging a compromise in their approach to the civil war in Syria. The only acceptable way in which the main interested parties will be able to achieve a peaceful solution will be to secure a cease-fire between the warring sides. A truce between the Syrian government and all the opposition groups will not be secured, because the opposition consists of a conglomerate of forces that are competing with one another and occupy different ideological positions, positions that are sometimes diametrically opposed to each other. However, given Russia's proposal for Syria's chemical weapons to be placed under international control and subsequently disposed of⁴⁶, interested parties could make use of this new window of opportunity and focus their efforts on securing agreements with Damascus on this issue and developing a detailed plan for the implementation of this initiative.

At present, there is potential for Syria to participate in the GP projects, and to involve it in the renewed Nunn-Lugar Program, or the New Partnership, as it is referred to by experts at the PIR Center. In the meantime, the prospects for Syria's participation are directly linked to the efforts of the interested parties to establish peace by resolving

the country's civil war. For this to happen, the international community needs to take decisive political steps in order to convince the Syrian government to eliminate the country's existing chemical arsenals. Putting the Russian initiative into practice might be one of these steps.

TURKEY

Turkey has never been regarded as a country that possesses chemical weapons. It is a member of the CWC and the Australia Group. Given the fact that Turkey is a neighbor of Syria, it would be wise for the GP to implement projects to improve the country's export and border controls over the circulation of chemical agents, precursors and dual-use materials.

UNITED ARAB EMIRATES

As far as is known, the UAE has never possessed chemical weapons. The country is a member of the CWC.

In 2013, construction of a new chemical industry complex not far from Abu Dhabi – the Chemical Industry Park – is expected to be completed⁴⁷. This will increase the volume of dual-use materials being imported into the country and exported out of it. In this context, efforts need to be made through the GP to provide the UAE with expert and technical assistance to help ensure export controls.

BIOLOGICAL THREATS IN THE MIDDLE EAST

Biological security is currently a less widespread and yet no less significant component of international cooperation on efforts to combat the proliferation of WMD in the Middle East. The threat of bioterrorism is viewed with the same level of seriousness as other forms of WMD terrorism – nuclear and chemical. In the Middle East, biological weapons may proliferate from sources such as military laboratories involved in developing this form of weaponry, virological research institutes, and medical research centers.

At the same time, the activities of civilian institutions are often fairly difficult to monitor, since these activities are dual in nature. The greatest danger stems from laboratories involved in biological research of a military and offensive nature. As a rule, such laboratories are located in countries that are developing or have developed programs to produce biological weapons. A biological threat may, however, also come from other institutions involved in research in fields such as microbiology, virology, immunology, bioengineering, genetics, and in other related areas of research and medicine.

Back in December 2008, a report published by the U.S. Congress Commission on the Prevention of Weapons of Mass Destruction Proliferation and Terrorism, titled "World At Risk", noted that terrorists found it simpler and more appealing to acquire pathogens in order to carry out a biological attack, rather than to try to obtain nuclear materials. Therefore, in the opinion of the document's authors – Bob Graham, Graham Allison et al – if urgent measures were not taken to combat the proliferation of materials for the production of WMD, including biological WMD, then it was

highly probable that an act of WMD terrorism would be carried out by the end of 2013⁴⁸. At present, the risk from bio-threats is fairly high, particularly in the Middle East, given that the region has countries that have not adopted the Convention on the Prohibition of the Development, Production and Stockpiling of Bacteriological (Biological) and Toxin Weapons and on their Destruction (BTWC) (Egypt and Syria have signed the convention but not ratified it, while Israel has not signed it), and given that the region has facilities involved in carrying out research in the field of microbiology and genetics.

According to observations made by Russia's Foreign Intelligence Service (SVR), it is believed that six of the region's countries have the capability to develop a biological program: Iraq, Libya, Syria, Egypt, Israel, and Iran⁴⁹. The specialists working in these countries, the pathogens these countries use, and the stocks of biological weapons these countries possess make them potentially dangerous sources for the proliferation of biological weapons and of bioterrorism.

EGYPT

At present there is no information on any offensive biological weapons programs that may have been developed in Egypt. The country has a fairly developed biotechnology infrastructure, which could potentially become the foundation for the manufacture of biological weapons. Between 2007 and 2012 Cairo modernized laboratories and centers involved in biological research⁵⁰. These measures may have significantly increased Egypt's capacity to develop applied military research programs as part of an offensive biological weapons program. According to some estimates, Egyptian laboratories may well have worked with biological agents, such as agents for the plague, cholera, rabbit fever, malleus, brucellosis, anthrax, melioidosis, psittacosis, Q fever, Japanese B encephalitis, Eastern equine encephalitis, and smallpox⁵¹. Many of the outcomes from the research carried out by Egyptian scientists may have a dual use.

Below are two solutions that could strengthen biosecurity in Egypt and could be delivered through the GP program:

- Educational seminars for Egyptian biologists on the subject of biosecurity and bio-protection.
- The provision of technical and expert assistance on export controls, although Egypt joining the Australian Group is an important precondition for the successful implementation of this project.

IRAN

Tehran signed the BTWC in 1972 and ratified it in 1973. Even so, this did not prevent it from pursuing a biological weapons program during the Iran-Iraq war, which ran from 1980 to 1988. There is no precise information on whether Iran has biological weapons. It is believed that Tehran does not possess this type of weaponry. According to the latest estimates, however, Iran is annually expanding its biotechnology infrastructure and developing dual-use technologies⁵². The country is carrying out major biotechnological research in the areas of medicine, agriculture, and food

production. In 2005, Tehran adopted a 10-year biotechnology development program, supervised by the Biotechnology Committee under the president of the IRI. At present, there are several dozen research centers in Iran focusing on various types of biotechnology. Of these, the largest are the National Research Center for Genetic Engineering and Biotechnology, the Pasteur Institute of Iran, the Agricultural Biotechnology Research Institute of Iran, the Institute of Biochemistry and Biophysics, the Institute of Vaccines and Serum, and others. The country is actively developing nanotechnologies and genetic engineering (in 2006 Iran managed to clone a sheep, in 2008 a goat). Under the 10-year plan mentioned earlier, Tehran's objective in nanotechnology is to become one of the top 15 countries by 2015. Iran is carrying out intensive biotechnological research in the agrarian sector and in the area of petroleum chemistry⁵³. It is fairly difficult to assess the risks of proliferation arising out of the research and production activity being pursued by the country's biochemical facilities, since there are no openly available statistics recording the theft or smuggling of biological agents or pathogens in Iran.

In December 2012 there was a report, citing a source in the Islamic Revolutionary Guards Corps, that Iran was developing biological weapons at a secret facility called Shahid Bahonar. It was reported that Iran was secretly working on 18 biological agents (anthrax agents, the Ebola virus, cholera, smallpox, the plague, and others), and had supplied one of them, which was called "yellow grain" and was developed with the help of North Korean research, to the Hezbollah group⁵⁴. This sort of information cannot be verified, however, and so it should be treated with a significant degree of skepticism until information confirming such statements appears from other sources.

Meanwhile, it is worth noting that, according to Natalia Kalinina, chief researcher at the Center for International Security at the Russian Academy of Sciences' Institute of World Economy and International Relations, Iran is one of the most disciplined countries in terms of the nonproliferation of biological weapons and declaring its own biotechnology activities.

At present, Iran is not covered by GP projects, and it is unlikely that it will be inclined towards engaging in international cooperation on the nonproliferation of WMD under this program. Donor countries, however, need to pay attention to the prospects for possible projects to develop the system of export controls over the circulation of bio-materials in states neighboring Iran. The same applies to Iran itself, in light of the recent statements by the new Iranian president in which he has demonstrated his country's willingness to participate in international cooperation on WMD nonproliferation.

IRAQ

Iraq joined the BTWC in 1991. Between 1985 and 1991, the country was developing its own program to manufacture biological weapons. An indirect sign that Iraq possessed such a program was offered by Iraq's suspiciously excessive activities to manufacture vaccines (up to 15 types of vaccines and 12m doses per annum, for a population requiring 2m doses or maybe even fewer)⁵⁵. In 1995, Iraq acknowledged that it had been developing systems that could be used for offensive purposes, and declared that it had an arsenal of biological weapons. The same year came news of the

size of this arsenal: 166 air bombs, 25 warheads for Scud/El-Hussein-type ballistic missiles, experimental airborne spray tanks with a capacity of 2,000 liters each, 155mm shells, and 122mm rockets packed with biological agents⁵⁶. Iraq announced that of the 19,180 liters of botulinum toxin, 8,445 liters of anthrax spores, 2,200 liters of aflatoxin and 340 liters of clostridium perfringens toxin it previously possessed, 7,665-7,735 liters of botulinum toxin, 3,412 liters of anthrax spores, 900-970 liters of aflatoxin and 338 liters of clostridium perfringens toxin were destroyed in 1991⁵⁷. However, the UN Special Commission on Iraq (UNSCOM) noted that there was no convincing evidence that the declared volumes of pathogens had been destroyed, or that Iraq actually had the facilities to destroy them. Between 1995 and 2002, UNSCOM, and from 1999, the UN Monitoring, Verification and Inspection Commission (UNMOVIC), were unable to find reliable data on the precise scale of Iraq's biological weapons program.

Following the start of the Iraq war in 2003, inspectors from the UN and the United States were unable to find any signs of biological weapons in the country⁵⁸. Nor was it confirmed that Iraq had any mobile installations for the production of biological weapons⁵⁹. At present, there is no information proving that Iraq has biological weapons or any related projects. The resumption of inspections to check whether the country has biological weapons should help to clarify the situation.

This state of affairs, where there is a fundamental lack of reliable information (based not on estimates, but on confirmation) on the presence of biological weapons and the materials used to manufacture them poses a serious threat that they may proliferate. In this context, it is worth noting that, as part of the GP, individual countries are already implementing projects to improve the system of bio-security in Iraq:

- The training and retraining of biochemists to work on civilian projects (United States, Italy);
- Bio-security training for specialists at laboratories and production units (Switzerland);
- Support for research being carried out by Iraqi biologists (Britain);
- Training intended to strengthen the system of healthcare, bio-security and epidemiological oversight (Britain);
- Improving the system of physical protection for bio-laboratories (Britain) (plans have been drawn up for the project, but funding has not been made available);
- The development of capacity in Iraq to detect, diagnose, provide timely notification of and react to bio-threats (United States);
- Working with scientists to improve their skills in ensuring bio-protection and bio-security (United States).

Given the considerable threat of bioterrorism, the measures currently being taken need to be supplemented with additional GP projects in the following areas:

- Funding the development of systems of biomaterials export controls in Iraq, as well as in neighboring countries (Turkey, Jordan, Saudi Arabia).
- Organizing civil defense training exercises in how to respond to a biological attack, as well as taking measures to resume the search of biopathogens by international inspectors from the UN.

ISRAEL

Israel is carrying out comprehensive biological research at a high level. In cooperation with the United States, Israel is carrying out work on developing defenses against biological weapons. Since 2004, Israeli legislation has been brought into line with the Australia Group's requirements on control over the export of biological material. Israel takes a fairly urgent view of the threat of bioterrorism, and holds exercises to improve measures to deal with acts of terrorism carried out using biological weapons, and to counteract their possible consequences⁶⁰. Overall, despite the fact that Israel has the ability to refocus its biochemicals industry fairly rapidly towards manufacturing biological weapons, nevertheless, the proliferation of biological agents and pathogens is seen as a clearer threat. At present, however, there are no statements or assessments that suggest that Israel requires major financial assistance to address biosecurity.

LIBYA

Libya has a certain volume of production capacity that is currently engaged in pharmaceutical and agricultural production, but could, according to certain estimates, be refocused towards producing biological weapons⁶¹. The country also has several centers involved in research in the area of microbiology: the research complexes at Sebha and Rabta, and a pharmaceuticals facility at Gharyan. However, Libyan scientists can only work with dangerous pathogens if the right materials, equipment and technology have been obtained. Given the country's current instability, it seems unlikely that it will develop biological weapons in its laboratories. The main proliferation threat stems from the knowledge amassed by biologists. In this context, for Libya it would be wise to propose a project to retrain these scientists and engage them in research outside the country.

SYRIA

Syria has signed the BTWC, but it has yet to ratify this agreement. There is very little freely available information on Syria's capacity for the production of biological weapons. There is no evidence of Damascus's potential to pursue its own offensive biological program. The country has fairly developed pharmaceutical, medical and biotechnological industries, but this work depends on supplies of material and equipment from abroad. It is believed that any work on anthrax agents, botulinum toxin or ricin is being pursued strictly as part of efforts to protect against biological weapons⁶².

In December 2012 there were reports that Iran intends to set up a facility in Syria to produce a vaccine against foot-and-mouth disease, with a production capacity of between 10m and 20m doses. These intentions were made public by the Iranian government and Iran's Razi Institute of Vaccine and Serum Research in Karaj. The director of the Razi Institute, Hadi Qadakhchi, and the director of the Syrian Agriculture Ministry's department of livestock-breeding and livestock health, Hussein Salih as-Salmas, both noted that plans to set up this type of production facility were being driven by Syria's everyday requirements⁶³. Given the ongoing situation in Syria, this

news is perplexing, since the country currently has far more pressing issues than the development of livestock farming.

On the other hand, from the standpoint of WMD proliferation, such statements cause concern, since the production of vaccines against foot-and-mouth disease is effectively a dual-use technology. For example, in Russia the virus that causes foot-and-mouth disease features on the list of micro-organisms, toxins, equipment and technology that are subject to export controls⁶⁴, and the vaccine cannot be manufactured without producing the virus itself. In addition, the planned volume of production also provides food for thought – 20m doses of vaccine per annum. At the same time, a 1993 report from Russia's Foreign Intelligence Service highlights the fact that in the early 1990s Iraq was producing 12m doses of vaccine against foot-and-mouth disease⁶⁵.

The environment of the civil war massively increases the risk that terrorists may obtain the restricted number of bio-agents and pathogens supposedly held in Syrian laboratories.

In this context, the following recommendations can be made on how to use the experience of the GP in respect of biosecurity in Syria:

- To launch a project to engage Syrian biologists involved in virological, medical and biochemical research in research and production. The project should be carried out in the GP's donor countries, as it is not currently possible for it to be implemented in Syria itself.
- To improve the technical infrastructure for systems of export control over biomaterials in countries neighboring Syria.

CONCLUSIONS AND RECOMMENDATIONS

A general conclusion that can be reached is that there are areas of promise for the development of the Global Partnership program in the Middle East, but also objective obstacles. Over the last 10 years, a certain amount of experience has been accumulated by implementing GP projects in the region, in areas such as the retraining of scientists specializing in nuclear, chemical and biological weapons; developing the professional skills of staff working for export and border control services and supplying these services with new equipment; and providing technical assistance in order to strengthen nuclear security. At the same time, the majority of measures planned under the GP program have yet to be implemented. To a considerable extent, this stems from the shortage of public funds available to the program's donors (the United States, the EU, Japan). Up to 2013, the majority of projects were financed by diverting the balance of funds remaining from other projects, as Russia and the post-Soviet space were the key areas for the GP.

Given the burgeoning threat of WMD proliferation in the region, as well as the fact that many projects in Russia and the CIS are nearing completion, the refocusing of the GP towards the Middle East would seem to be the best direction of travel for the program. At a meeting of the working group on international cooperation on WMD nonproliferation and nuclear security, which took place at the PIR Center on June 19, 2013 following the G8 Summit, it was noted that since the GP's participating

countries involved in the summit confined themselves to general statements, the issue of specific international cooperation projects on matters of nuclear security and WMD nonproliferation as part of the GP remains open.

The refocusing of the GP towards other regions will make it possible to update projects in the Middle East that were planned but have not been implemented under the program. It is therefore of fundamental importance that political commitments be made to implement programs specifically in the Middle East.

Up until recently, there were no real prospects for the implementation of GP projects in the *problem* countries of the Middle East, i.e. Syria and Iran, due to their diplomatic isolation. Recently, however, there have been some encouraging changes. Both Iran and Syria are showing willingness to address contentious issues and strengthen the WMD nonproliferation regime in cooperation with the international community. We would recommend the following course of action to foster these positive trends: Iran and Syria should be encouraged to participate in international mechanisms of countering WMD proliferation and strengthening nuclear security, and in the Global Partnership in particular.

The development of GP projects in the Middle East is being hindered by the non-involvement of a number of the region's countries in international agreements, organizations and initiatives that focus on combating WMD proliferation: the NPT, the CPPNM, ICSANT, the Additional Protocol, the Code of Conduct on the Safety and Security of Radioactive Sources, the CWC, the BTWC and the GICNT. Therefore, above all, the United States and Russia face the task of involving the region's countries in these international institutions.

Restrictions on the implementation of joint Russian-U.S. projects in the Middle East are imposed by:

- Russia's interest in spending funds to combat WMD proliferation in the region only in a relatively narrow area focusing on nuclear security;
- the principled position adopted by the United States on matters relating to WMD nonproliferation, such as completion of the destruction of chemical weapons and the formulation of measures to verify compliance with the provisions of the BTWC;
- the fact that projects in Russia, in which Moscow has a keener interest in investing its funds as part of the GP, are yet to be completed.

On the other hand, it is safe to say that in light of recent developments, these restrictions are gradually disappearing. For example, the first and the third items on the list above are becoming less relevant; Russian Foreign Ministry representatives say in informal discussions that in 2014, when Russia will hold the rotating presidency of the Global Partnership, Moscow will be ready to spend money on projects to strengthen the WMD nonproliferation regime and nuclear safety in third countries. The example of Syria demonstrates that Russia is already in a position greatly to facilitate that process. According to the *Kommersant* daily, Moscow is ready to spend about 2m dollars on the destruction of Syrian chemical weapons stockpiles, and it will probably provide the transport to remove those stockpiles from

Syria. In addition, Russia will send its nuclear, biological and chemical protection specialists to Syria.⁶⁶

Now that effective solutions are being identified for such seemingly hopeless situations as the crisis over the Syrian chemical weapons, we believe that Russia and the United States will also be able to find mutually acceptable options for biosecurity issues, which remain a matter of controversy for now. Nevertheless, that optimism should be seasoned with caution: despite the recent positive trends, the aforementioned restrictions and limitations are still capable of hindering a more energetic Russia-U.S. and multilateral cooperation on WMD nonproliferation and nuclear security.

The prospects for involving Middle Eastern countries as donors to other countries are fairly slim because overall, these countries are focused more on ensuring security within their own borders and in neighboring countries. These states are also demonstrating little interest in cooperation in combating WMD proliferation.

The governments of a number of the region's states (Egypt, Jordan, Syria) will make launching the implementation of GP projects in their countries contingent on progress in the creation of a nuclear weapons-free zone (WMD-free zone) in the Middle East, since they made their position clear a long time ago: there can be no support for nonproliferation until Israel starts the process of nuclear disarmament. Since Israel is still refusing even to consider the possibility of relinquishing its nuclear arsenal, the establishment of a WMD-free zone in the Middle East seemed, until recently, a matter of distant future at best. But the beginning of Syria's chemical disarmament has revitalized the idea of a Middle Eastern WMD-free zone, which appeared to be dead in the water.

Some of the first steps towards the establishment of such a zone would be for Israel and Egypt to follow Syria's example and join the OPCW and the Chemical Weapons Convention. Developments in Syria have forced the majority of experts to revise their previous views to the effect that for a WMD-free zone to be established in the Middle East, the region must first be freed of nuclear weapons, with chemical and biological arsenals to follow at a later point⁶⁷. Obviously, now that we have the precedent of Syria's chemical disarmament, there is certain logic to doing things the other way around.

Experts also say that steps towards the establishment of WMD-free zone in the Middle East could include establishing a zone free of the complete nuclear fuel cycle. Such a measure would remove even the theoretical possibility of the region's countries acquiring the material and capability for building nuclear weapons.

In terms of the GP's main areas of activity, it would be sensible to highlight:

- Export and border control (supplying modern equipment, training of staff through the EU CBRN Centre of Excellence in Jordan, expert legal assistance in bringing national laws into line with international law);
- Retraining of weapons scientists: nuclear (Iraq), chemical (Libya, Iraq, Syria), and biological (Iraq). It would make sense to use the GP's existing experience, held by the EU, Italy, and the United States;

- Engaging researchers currently or formerly involved in work relating to dual-use technologies in international research projects (Libya, Syria, Iraq, Iran, Jordan, the UAE);
- Assistance in the destruction of chemical weapons (recovery of damaged chemical weapons from two bunkers at Al-Muttanna in Iraq and continued funding for the destruction of chemical weapons in Libya through to the end of the program, scheduled for 2016);
- Improving the nonproliferation culture and providing training in the fundamentals of nuclear security (training future specialists in nuclear material protection, control and accounting for Egypt, Jordan, Turkey, Libya, the UAE, and Morocco);
- Technical and Expert Assistance in strengthening nuclear security systems (Turkey, Egypt, Jordan, Algeria, Libya, Morocco); strengthening the protection of chemical agents and precursors (Libya, the UAE); and biosecurity (Iraq, Egypt, the UAE) in laboratories and facilities;
- Disposal of radioactive waste in Iraq (providing financial support for the EU project).

A differentiated approach needs to be applied to the provision of funding for GP projects in the Middle Eastern countries, taking their different levels of

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economic prosperity into account. For countries experiencing instability and a serious economic slump (Iraq, Libya), the recommendation is for projects to be funded by aid from donors. For the remaining countries, and above all for those that have an interest in developing nuclear energy (the UAE, Jordan, Turkey, Saudi Arabia, Morocco, Algeria, and Egypt), funding should be split 50-50.

Since GP projects create a market for certain services and goods, the Russian government should take part in those projects where Russian companies could be engaged to implement them (for example, the Aspekt Research and Production Center, which manufactures radiation monitoring tools and detectors, and the Moscow Engineering Physics Institute, which can train specialists in nuclear material protection, control and accounting).

NOTES

¹ G8 Global Partnership: Assessment and Options for Future Programming. Deauville, May 26-27, 2011. <http://www.g7.utoronto.ca/summit/2011deauville/2011-gpassessment-en.html#outreach> (last accessed December 2, 2013).

² Global Partnership Working Group – GRWG Annual Report. Consolidated Report Data 2012. Annex. 88 p. <http://www.state.gov/documents/organization/208032.pdf> (last accessed December 2, 2013).

³ Yemelyanenko Aleksandr. The children of Kananaskis. <http://www.rg.ru/2012/11/27/partnerstvo.html> (last accessed December 28, 2013).

⁴ 2013 Lough Erne G8 Leaders' Communiqué. P.21. https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/207771/Lough_Erne_2013_G8_Leaders_Communique.pdf (last accessed December 20, 2013).

⁵ Office of the Press Secretary, The White House. Nuclear Security Summit National Statement of the United States. 2010, April 13, <http://www.whitehouse.gov/the-press-office/nuclear-security-summit-national-statement-united-states> (last accessed December 20, 2013).

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- ⁶Nolke Sabine, The G-8 Global Partnership Against the Spread of WMD. Speech at the conference. The Apex of Influence — How Summit Meetings Build Multilateral Cooperation. Chicago. 2012, 10 May, http://fora.tv/2012/05/10/The_G8_Global_Partnership_Against_the_Spread_of_WMD#fullprogram (last accessed December 20, 2013).
- ⁷ This paper defined the Middle East as per the 1989 IAEA definition: “the territory from Libya in the west to Iran in the east, and from Syria in the north to Yemen in the south”, with the addition of Turkey.
- ⁸ Algeria will build nuclear power plant by 2025, *Power-Engineering*, May 20, 2013, <http://www.power-eng.com/articles/2013/05/algeria-will-build-nuclear-power-plant-by-2025.html> (last accessed December 28, 2013).
- ⁹ Algeria attaches the greatest significance to nuclear security, declares Mr. Medelci at the UN, Embassy of Algeria, <http://www.algerianembassy.org.my/minister%20speech%20.htm> (last accessed December 28, 2013).
- ¹⁰ Algeria's Nuclear Secrecy, *ISN Zurich*, 2007, July 30, <http://www.isn.ethz.ch/isn/Digital-Library/Articles/Detail/?lng=en&id=53530> (last accessed December 28, 2013).
- ¹¹ The 2012 Nuclear Security Summit and the Middle East, *Arms Control and the Regional Security for the Middle East*, <http://www.middleeast-armscontrol.com/2012/04/15/the-nuclear-security-summit-and-the-middle-east/> (last accessed December 28, 2013).
- ¹² El-Akkad Dalia. The best way forward: nuclear or renewables for Egypt, *the Nature*, <http://www.nature.com/nmiddleeast/2013/130425/full/nmiddleeast.2013.61.html> (last accessed December 28, 2013).
- ¹³ Alexandria University. Nuclear and Radiation Engineering Department. Proposed Study Plan. <http://www.alexeng.edu.eg/eng/dept/nuclear/wiki/studyplan> (last accessed December 28, 2013).
- ¹⁴ Representative of the Egyptian embassy in Moscow. Interview with the author. Moscow, May 27, 2013.
- ¹⁵ Implementation of the NPT Safeguards Agreement and relevant provisions of Security Council resolutions in the Islamic Republic of Iran. IAEA Board of Governors. GOV/2013/27. 22 May 2013.
- ¹⁶ Corera Gordon. Shopping for Bombs: Nuclear Proliferation, Global Insecurity, and the Rise and Fall of the A.Q. Khan Network. Oxford, 2006.
- ¹⁷ Sveshnikova Yuliya, Roknifard Amir, Iranian Election Results: Change on Horizon? *Security Index*, 2013. No 4, Fall 2013, P. 70.
- ¹⁸ Global Partnership Working Group – GRWG Annual Report. Op.cit.
- ¹⁹ Fakhir Adel. EU and Iraq sign deal on nuclear disposal, *the Nature*, <http://www.nature.com/nmiddleeast/2013/130211/full/nmiddleeast.2013.22.html> (last accessed December 28, 2013).
- ²⁰ Al-Muqdadikadhim, Al-AnsariNadhir. The waste of wars in Iraq: Its nature, size and contaminated areas, http://www.ltu.se/cms_fs/1.85152!/file/2.3%20Almuqdadid%20and%20Alansari%201.pdf (Last accessed December 28, 2013).
- ²¹ Radiation-Contaminated Japanese Materials Seized in Umm Qasr, *The Iraq-Business News*, 2011, October 18, <http://www.iraq-businessnews.com/2011/10/18/radiation-contaminated-japanese-materials-seized-in-umm-qasr/> (last accessed December 28, 2013).
- ²² Global Partnership Working Group – GRWG Annual Report. Op.cit.
- ²³ Michelle Cann, Davenport Kesley, Balza Margaret. The Nuclear Security Summit: Assessment of National Commitments. http://www.armscontrol.org/files/ACA_NSS_Report_2012.pdf (last accessed December 28, 2013).
- ²⁴ Negev Nuclear Research Center (NNRC), *NTI*, <http://www.nti.org/facilities/418/> (last accessed December 28, 2013).
- ²⁵ Shoval Lilach. Security at the nuclear facility in Dimona is disgraceful, http://www.israelhayom.com/site/newsletter_article.php?id=2008 (last accessed December 28, 2013).
- ²⁶ Middle East and North Africa 1540 Reporting, *NTI*, <http://www.nti.org/analysis/reports/middle-east-and-north-africa-1540-reporting/> (last accessed December 28, 2013).
- ²⁷ Dahl Fredrik. Nuclear experts warn of Libya "dirty bomb" material, *The Reuters*, <http://www.reuters.com/article/2011/08/24/us-libya-nuclear-heinonen-idUSTRE77N1MZ20110824> (last accessed December 28, 2013).
- ²⁸ France to help Morocco's nuclear energy drive, *Expatica*, http://www.expatica.com/fr/news/local_news/france-to-help-morocco-s-nuclear-energy-drive_80826.html (last accessed December 3, 2013).
- ²⁹ Crail Peter. Measuring Nuclear Export Controls in Nuclear Powered Nations and Nuclear Aspirants, CSIS, http://csis.org/files/publication/110916_Crail.pdf (last accessed December 28, 2013).

-
- ³⁰ Saudi Arabia to build its first 16 nuclear reactors by 2030. *Trend*. June 1, 2011, <http://www.trend.az/capital/energy/1884819.html> (last accessed December 28, 2013).
- ³¹ Saudi Arabia increases plan for nuclear generation capacity by 1 GW. *Rossiyskoye atmonoye soobshchetvo*. December 10, 2012, <http://www.atomic-energy.ru/news/2012/12/10/37630> (last accessed December 28, 2013).
- ³² Middle East and North Africa 1540 Reporting, NTI, <http://www.nti.org/analysis/reports/middle-east-and-north-africa-1540-reporting/> (last accessed December 28, 2013).
- ³³ UN admits that uranium has been stolen from Iraqi storage facilities, *Nuclearno*, <http://nuclearno.ru/text.asp?6135> (last accessed December 28, 2013).
- ³⁴ Middle East and North Africa 1540 Reporting, NTI, <http://www.nti.org/analysis/reports/middle-east-and-north-africa-1540-reporting/> (last accessed December 28, 2013).
- ³⁵ Barletta Michael and Jorgensen Erik. Reported Use of Chemical Weapons, Ballistic Missiles, and Cruise Missiles in the Middle East, MIIS, <http://cns.miis.edu/wmdme/use.htm> (last accessed December 28, 2013).
- ³⁶ Polster Claus-Peter. Ninth International Course on Medical Defence Against Chemical Weapons. Organization for the Prohibition of Chemical Weapons, 9 November 2008, <http://www.opcw.org/news/article/ninth-international-course-on-medical-defence-against-chemical-weapons/> (last accessed December 28, 2013).
- ³⁷ Iraq's Chemical Weapon Program, *The Iraq Watch*, <http://www.iraqwatch.org/profiles/chemical.html> (last accessed December 30, 2013).
- ³⁸ Samantha L. Quigley. Weapons Found in Iraq Meet WMD Criteria, Official Says, June 29, 2006. <http://www.defense.gov/News/NewsArticle.aspx?ID=15918> (last accessed December 30, 2013).
- ³⁹ Letter from Director of National Intelligence John D. Negroponte to the Honorable Peter Hoekstra, Chairman, Permanent Select Committee on Intelligence, U.S. House of Representatives, providing declassified "Key Points" from a National Ground Intelligence Center report on the recovery of chemical weapons in Iraq, dated June 21, 2006. http://www.foxnews.com/projects/pdf/Iraq_WMD_Declassified.pdf (last accessed December 3, 2013).
- ⁴⁰ Comprehensive Report of the Special Advisor to the DCI on Iraq's WMD. CIA, 2004, September 30, https://www.cia.gov/library/reports/general-reports-1/iraq_wmd_2004/chap5_annxB.html (last accessed December 30, 2013).
- ⁴¹ Chasmar Jessica. Iraq foils al Qaeda chemical weapons plot: report. *Washington Times*, June 2, 2013, <http://www.washingtontimes.com/news/2013/jun/2/iraq-foils-al-qaeda-chemical-weapons-plot-report/> (last accessed December 3, 2013).
- ⁴² Max Arthur. Watchdog says Libya destroys chemical weapons. *The Associated Press*, 23 February 2011.
- ⁴³ Karadsheh Jomna. Jibril: Two chemical weapons sites found in Libya. *CNN*, 30 October 2011.
- ⁴⁴ Libya: Facts and Figures. <http://www.opcw.org/the-opcw-and-libya/libya-facts-and-figures/> (last accessed December 28, 2013).
- ⁴⁵ Syria discloses the chemical weapons formula. *Kommersant*, October 31, 2013. <http://www.kommersant.ru/doc/2332343> (last accessed December 28, 2013).
- ⁴⁶ Statement for the media by Russian Foreign Minister Sergey Lavrov over the situation with Syrian chemical weapons. Moscow, September 9, 2013, http://mid.ru/brp_4.nsf/0/4B6CF9DF7225584344257BE1005104AF (last accessed December 28, 2013).
- ⁴⁷ Chemical Industrial City to be located at Khalifa Industrial Zone at Taweelah. <http://www.adpc.ae/en/news/media-centre/press-releases/chemicals-industrial-city-to-be-located-at-khalifa-industrial-zone-at-taweelah.html> (last accessed December 28, 2013).
- ⁴⁸ Graham Bob, Allison Graham. *World at Risk: The Report of the Commission on the Prevention of Weapons of Mass Destruction Proliferation and Terrorism*. First Edition. New York: Vintage Books, 2008. P. XV.
- ⁴⁹ Kalinina Natalia. International and national issues of biological security and the prospects for their resolution. Moscow: IMEMO RAN, 2012. P. 56-62.
- ⁵⁰ Egypt. Biological. NTI, <http://www.nti.org/country-profiles/egypt/biological/> (last accessed December 30, 2013).
- ⁵¹ Shoham Dany. The Evolution of Chemical and Biological Weapons in Egypt. ACPR Policy Paper No. 46, 1998. p. 14.
- ⁵² Unclassified Report to Congress on the Acquisition of Technology Relating to Weapons of Mass Destruction and Advanced Conventional Weapons, Covering 1 January to 31 December 2011, DNI,

http://www.dni.gov/files/documents/Newsroom/Reports%20and%20Pubs/2011_report_to_congress_wmd.pdf (last accessed December 28, 2013).

⁵³Vartanyan Artur. The phenomenon of science and technology jihad in Iran, IIMES, 2010, November 7, <http://www.iimes.ru/rus/stat/2010/07-11-10a.htm> (Last accessed December 30, 2013).

⁵⁴Reza Kahlili. Iran Making Anthrax at Secret Plant, <http://www.wnd.com/2012/12/iran-making-anthrax-at-secret-plant/#Llc23emRYpSe6XzB.99> (last accessed December 29, 2013).

⁵⁵New challenge after the Cold War: proliferation of weapons of mass destruction (1993 open report by the Foreign Intelligence Service of the Russian Federation), The Foreign Intelligence Service of the Russian Federation, <http://svr.gov.ru/material/2-1.htm> (last accessed December 30, 2013).

⁵⁶Iraq: The UNSCOM Experience. SIPRI Fact Sheet. October 1998. P. 4.

⁵⁷UNSCOM - Report to the Security Council - 25 January 1999. Annex C. Status of Verification of Iraq's Biological Warfare Programme.

⁵⁸Borger Julian. There were no weapons of mass destruction in Iraq. *The Guardian*, 7 October 2004.

⁵⁹Warrick Joby. Lacking Biolabs, Trailers Carried Case for War. *The Washington Post*, 12 April 2006.

⁶⁰Katz Yaakov. Israel Conducts Major Bioterrorism Drill. *Jerusalem Post*. 13 January 2010; Ashton Daigle. Israel prepares for biological, chemical attacks, <http://www.bioprepwatch.com/news/israel-prepares-for-biological-chemical-attacks/219116/> (last accessed December 3, 2013).

⁶¹Kalinina Natalia. International and national issues of biological security and the prospects for their resolution. *Op.cit.*, p.58.

⁶²Markovich I., Simonova A. Biological weapons: issues of nonproliferation and terrorism, and policy of counteraction. Moscow: LKI Publishing, 2011. P. 36-37.

⁶³Iran to build foot-and-mouth vaccine production facility in Syria with an output of up to 20m doses, *Regnum*, <http://www.regnum.ru/news/fd-abroad/medicine/1601756.html> (last accessed December 30, 2013).

⁶⁴Collection of lists of controlled products and technologies, 2010, <http://www.ippe.ru/nd/pdf/kont-sp.pdf> (last accessed December 30, 2013).

⁶⁵New challenge after the Cold War: proliferation of weapons of mass destruction (1993 open report by the Foreign Intelligence Service of the Russian Federation), *op.cit.*

⁶⁶Albania to accept Syrian poisons. *Kommersant*. November 1, 2013,

<http://www.kommersant.ru/doc/2333193> (last accessed December 30, 2013).

⁶⁷Such ideas were outlined at workshops organized by PIR Center in 2012-2013 on the subject of a WMD-free zone in the Middle East. See: WMD-Free Zone in the Middle East: Obstacles and Opportunities. *Security Index*. No 4, Fall 2013. p. 50.