ASI Director appointed to high office

Dr Suzanne Fortier, Director of the NATO-sponsored Advanced Study Institute (ASI) on "Direct Methods for Macromolecular Crystallography" held in May 1997 and holder of a NATO Collaborative Research Grant in 1991, has recently been appointed President of the Natural Sciences and Engineering Research Council (NSERC) of Canada. Dr Fortier is currently a guest visitor at the Department of Earth and Geo-Environmental Sciences of the University of Bologna, Italy.

Maths in the contemporary scientific world

Les mathématiques dans le monde scientifique contemporain, published by the French Académie des Sciences in the *Rapports sur la Science et la Technologie* series, considers and analyses the interaction between maths and other disciplines, in order to determine how their common approach and language foster cooperation between all the disciplines, and how issues being considered in other disciplines open up avenues for research for mathematicians themselves. The study offers recommendations aimed at improving that interaction. Further information on this publication is available at:
http://www.academie-sciences.fr/publications/rapports/rapports_html/RST20.htm

New Programme Director Appointed

The NATO Public Diplomacy Division has recently welcomed Dr Hadassa Jakobovits as the new Programme Director for Information and Communications Security. In her capacity, she will oversee projects and initiatives in the area of information and communications security as well as the computer networking activities in Partner countries among which the Virtual Silk Highway project for the Caucasus, Central Asia and Afghanistan. Dr Jakobovits holds a Ph.D. in Computer Science from the Vrije Universiteit and an MBA from Solvay Business School, both in Brussels, Belgium. She brings to the NATO Programme for Security through Science a broad experience in academia, government agencies and private industry. This includes doctoral research at the Flanders Fund for Scientific Research (FWO) and a position as Senior Developer at the headquarters of Akamai Technologies, in Cambridge (Massachusetts, US), the leading Internet content distributor whose clients range from major businesses including Microsoft and Google to important government agencies like the US Department of Defense to international entities like the Olympics. We wish her all the best in this new position.

Upcoming events

- **Advanced Research Workshop on "Advanced Combustion and Aerothermal Technologies: Environmental Protection and Pollution Reductions",**
  15-19 May 2006
  Kyiv, Ukraine

- **Advanced Research Workshop on "Reconciling the requirements of Contemporary Operations with the Needs of Human Security",**
  17-18 May 2006
  Cairo, Egypt

- **Advanced Research Workshop on "The Socio-Economic Causes and Consequences of Desertification in Central Asia",**
  29 May-1 June 2006
  Bishkek, Kyrgyz Republic

- **Advanced Study Institute on "Structure and Function of Large Molecular Assembles: Crystallographic Targeting of Pathogenic Viruses to Recognise and Neutralise Potential Terrorism",**
  8-18 June 2006
  Erice, Italy

NATO
Security through Science Programme
CCMS Programme

Public Diplomacy Division
Boulevard Leopold III
1110 Brussels
Belgium

Contacts: science@hq.nato.int
science.admin@hq.nato.int
(enquiries about distribution)

SCNEWSENG73/06

NATO
OTAN

N° 73
issue 1
2006

Science, Society, Security

news

Science Committee
Committee on the Challenges of Modern Society

NATO
www.nato.int/science
www.nato.int/ccms

Maintaining a wide range of activities

The beginning of 2006 has seen a flurry of activity in the Security through Science Programme. Security and defence experts, the science community as well as oil, gas and electricity producers came together at the NATO Forum on Energy Security Technology, which took place in Prague on 22 to 24 February 2006, to discuss the global threats and challenges to the world's energy system. A Science for Peace project focusing on the effective management of uranium industry waste in Central Asia has recently taken off under the co-direction of scientists from Slovenia and Kazakhstan in order to prevent further health and environmental hazards. Kazakhstan will soon be in the spotlight, being the host of the summer meeting of the Science Committee, which will take place in Almaty on 19 and 20 June 2006. Prior to these meetings, the NATO-Russia Rally will take place over two weeks in May 2006, and will be another high-level event at which the value of scientific cooperation will be addressed. The link between water resources management and security in the Middle East was explored during a series of lectures and seminars organised in Israel. Meanwhile, the Security through Science Programme continues to support young scientists in Partner countries by encouraging them to return to their home country after spending a research period abroad. Through the support of a NATO Reintegration Grant, a Croatian scientist is back in her home country to work on a project on "Antidotes for the Treatment of Nerve Gas Agents Poisoning".

NATO Forum on Energy Security Technology

➪ A platform to discuss from different angles the global threats and challenges to the integrity of the world's energy system - such was the purpose of the "NATO Forum on Energy Security Technology" that took place in Prague, Czech Republic, from 24 to 26 February 2006. This event, supported by the Security through Science Programme, was co-directed by Dr Kevin Rosner, US, and Dr Hryhoriy Nemyria, from the Centre for European and International Studies, Kyiv, Ukraine.

The Forum brought together security and defence experts, high-level policy-makers, representatives of the scientific community as well as oil, gas and electricity producers to exchange views on a personal basis. Key speakers included the Czech Prime Minister and Foreign Minister, Energy Ministers from Jordan and Morocco, and deputy ministerial level representatives from several NATO countries. Around 150 participants from 32 nations considered both the issue of security of energy supplies and protection of key energy facilities from terrorist attacks.

The three-day Forum was structured around nine topical plenary sessions and seven workshops held in parallel during two sessions, with a focus on science and technology. The nine plenary sessions focused on:

- The Science, Business and Technology of Critical Infrastructure Protection
- Energy in the Global Security Environment
- Energy and the War on Terror
- Energy, Economics and Security (2 ministerial sessions)
- Energy and the US European Command
- National, Regional and Multinational Perspectives on Energy Security
- The Private Sector and Energy Security: Issues and concerns
- Protecting and Adding Supply: Emerging and re-emerging technologies
- Energy Security and Consequence Management

The seven workshops addressed:

Liquid natural gas (LNG), IT oil and gas security, Critical energy infrastructure protection, Maritime security, Pipeline protection, Internal security controls, Alternative technologies and solutions

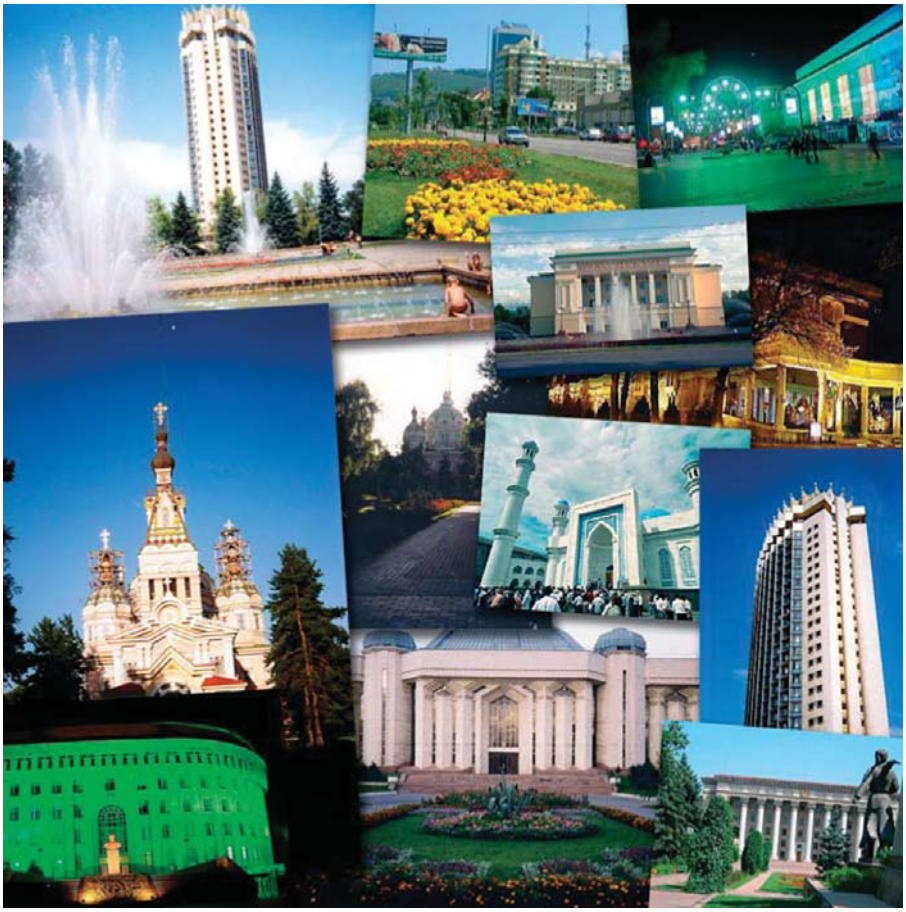
The Energy Security Forum provided a useful framework to draw attention to different aspects of energy security and national needs, including the rapidly growing demand in India and China, the instability of energy markets (terrorism and the effect on oil prices), the need to examine alternative energy sources for transport (e.g. the use of bio-fuels), the role of nuclear power and the importance of energy in the context of national and regional security. Several recommendations emerged from the discussion on how NATO should be addressing energy security, which NATO Secretary General Jaap de Hoop Scheffer cited as a crucial issue at the 42nd Annual Munich Conference on Security Policy on 4 February 2006. The Forum's organisers highlighted the need for the Alliance to develop policies for critical infrastructure protection inside and outside NATO's area of responsibility; examine a collective security response to cyber attacks on critical infrastructure; plan for the protection of critical energy supplies; and drive forward a discussion of government-business-military cooperation in energy security. This timely event provided valuable insight and expert information that will help the Alliance address an increasingly relevant issue in the current security environment.

Science Committee to meet in Kazakhstan

➪ The summer meeting of the Science Committee (SCOM) will take place in Almaty, Kazakhstan, on 19 and 20 June 2006. On the occasion of the meeting, SCOM members will take part in workshops supported by the Security through Science Programme. The NATO Assistant Secretary General for Public Diplomacy will also meet with Kazakh officials and with leading authorities of Kazakh research institutions and universities.

The three workshops are:

- ➪ Advanced Research Workshop on "Facilitating Regional Security in Central Asia Through Improved Management of Transboundary Water Basin Resources";
- ➪ Advanced Networking Workshop on "Information Security"; and,
- ➪ Advanced Research Workshop on "Radioactivity issues in Central Asia"



SCOM members and PDD staff will visit the Kazakh Academy of Science, the Al Farabi University, the Institute of Nuclear Physics, and the Almaty Technical University, which is involved in the NATO-sponsored Virtual Silk Highway, a computer networking project providing Internet connectivity to the Caucasus and Central Asian countries. Moving to Astana, on 21 and 22 June, visits will include the Ministry of Education and Science, the Ministry of Environment Protection and the Ministry of Ecology and Mineral Resources. NATO Assistant Secretary General for Public Diplomacy, Mr Jean Fournet, will give a lecture at the Eurasian National University.

The SCOM meeting and the related events organised during the week will provide an opportunity to take stock of the Security through Science activities in which Kazakhstan is involved, including Science for Peace (SfP) projects.

Such projects cover topics from the investigation of the radiological situation in areas which were part of the former Soviet nuclear test site of Semipalatinsk in Kazakhstan, to the study of integrated water resources management for wetlands restoration in the Aral Sea Basin, and the study of effective management of uranium industry waste in the Central Asian countries. The content and the aim of the latter are explained in detail in a separate article in this newsletter.

Aral Sea 1989 Aral Sea 2003

NATO-Russia Rally: From Vladivostok to Kaliningrad

A NATO-Russia Rally based on the theme of "What binds us together?" will take place through a series of initiatives across nine cities in the Russian Federation from 11 to 23 May 2006 and will include conferences, exhibitions, and cultural events. NATO Assistant Secretary General for Public Diplomacy, Mr Jean Fournet, will attend the Rally and address the theme of NATO-Russia scientific cooperation at the 12 May conference in Novosibirsk on "NATO-Russia Council: From hard security to soft security".

The Rally, agreed in the framework of the 2006 activities of the NATO-Russia Council (NRC), is organised by the NATO Information Office in Moscow (part of the Public Diplomacy Division) with the support of NATO member states and the Russian authorities. It aims to highlight the commonality of interests between NATO and Russia in the current security environment as well as the need to continue fostering a common security agenda, from hard to soft security issues, building on the achievements of the NRC.

Scientific collaboration, taking place in the framework of the NRC Science Committee, is a significant dimension of NATO-Russia cooperation, which spans issues such as terrorism, non proliferation, crisis management and defence reform. The NRC Science Committee has drawn up an Action Plan for 2005-2006, providing for collaboration in the following six security-related priority areas: Explosives Detection; Psychological and Sociological Consequences of Terrorism; Forecast and Prevention of Catastrophes; Chemical, Biological, Radiological and Nuclear (CBRN) protection; Cyber Security; and Transport Security.

Ionian Sea, 15 February 2006 - The Spanish frigate SS Navarra and the Russian cruiser Moskva during training activities conducted to help prepare Russian Navy crews for eventual participation in Operation Active Endeavour

Catania (IT), 12 February 2006 - Demonstration of NATO standard search procedures on board HMS Nottingham. Operation Active Endeavour is actively patrolling the Mediterranean to prevent and counter terrorism coming from or conducted at sea and all illegal activities possibly connected with terrorism such as human trafficking and smuggling of arms and radioactive substances

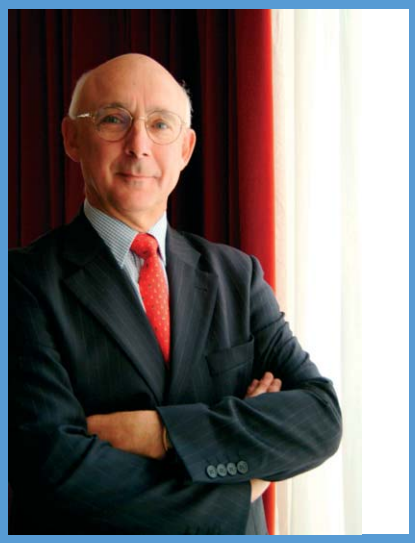
Since the launch of the Security through Science Programme at the beginning of 2004, Russian scientists have contributed to a wide range of activities, including two ongoing Science for Peace (SfP) projects that aim to develop a more effective technique to detect anthrax and a new device to detect explosives and radioactive material, the so-called "dirty bombs". Planned activities for 2006 that will benefit from Russian expertise include an SfP project on the development of a new generation of armour material that will

protect man against small calibre ammunition, and a workshop on "Commercial and Pre-commercial Cell Detection Technologies for Defence Against Bioterror - From Idea to commercial realisation".

Cooperation and networking in scientific affairs has proved to be an additional means to boost relations among the 27 members of the NATO-Russia Council as well as to provide additional solutions to the threats and challenges of the current security environment. In the context of the NATO-Russia Rally, science will be another opportunity to illustrate to the Russian public the multifaceted nature of the NATO-Russia relationship.

Poster of the NATO Russia Rally

Editorial



Since its creation, Science for Peace has been one of the NATO Science Programme's flagship sub-programmes. Combining the scientific quality of research, the innovative conception of a project, a good fit with NATO's objectives and practical usefulness for an industrial or government end-user, this sub-programme offers the qualities of effectiveness, topicality and visibility.

Moreover, the close association it suggests between science and peace acts as a counterpoint to the common idea of the cross-fertilization between war and science. Science is for peace when it brings people together instead of separating them, when it helps our societies to develop, and when it contributes to building a safer world.

It is not surprising, therefore, that the Science Committee and the Committee on the Challenges of Modern Society have, at recent meetings, taken this concept as the inspiration for the new name of the programme that should eventually emerge from their merger: the Science for Peace and Security Programme.

It is quite a programme indeed, which will be discussed further in upcoming issues.

Jean Fournet

Managing water resources in the Middle East

The relationship between water scarcity and security in the Middle East was the theme explored at the Advanced Study Institute (ASI) held from 6 to 17 February 2006 in Kibbutz Ketura, Israel. Participants attended a series of lectures and group discussions, which were coordinated by Dr Eric Pallant, from the Allegheny College in Meadville, US, and Dr Clive Lipchin, from the Arava Institute for Environmental Studies, D.N. Hevel Eilot, Israel.

Sinkholes forming in the Dead Sea

This ASI introduced participants to water and security issues involving Israel, Jordan and the Palestinian Authority, for whom water is in short supply. This supply challenge has an impact on activities related to agriculture, business and industry. Moreover, the uneven distribution of precipitation and transboundary watercourses also has political implications for the region. Around 40 participants from 14 countries, including scientists, researchers and policy experts, familiarised themselves with the regional water problems and looked at a variety of possible solutions.

The main theme throughout the ASI was that of "integrated water resources management" (IWRM), which is an approach that draws on the elements of sustainable development, and based on the integration and interaction of society, the economy and environment. On this basis, the successful implementation of water management requires a process that transcends sectoral approaches to management and promotes the coordination of development and management from an ecosystem perspective. Attendees were asked at the beginning of each day to consider a set of questions that were addressed during the lectures and courses of the day. At the end of the day, participants gathered in small groups to discuss the questions and develop solutions in order to solve a particular issue. Some of the issues addressed included:

- How do environmental threats create national security risks?
- What are the needs of Israel, Jordan and the Palestinian Authority for water?
- What are the social and economic costs and benefits of alternative uses of water (such as rainwater harvesting and desalination)?
- How do Israel, Jordan and the Palestinian Authority interpret and frame water scarcity?
- What are the primary threats to the Dead Sea?
- What scientific tools are available to measure risks related to water resources in the Middle East?

At the conclusion of the ASI, participants reported that the NATO-sponsored learning experience had provided value and the outcome was they were going to consider options for collaborative research projects and networking. The ASI co-directors and the Environmental and Water Director at the Israeli-Palestinian Centre for Research and Information (IPCRI) facilitated this discussion on possible future collaboration.

Countering the effects of nerve gas agents

"Antidotes for the treatment of nerve gas agents poisoning" is the topic of the post-doctoral research project of Dr Zrinka Kovarik, who is currently working at the Institute for Medical Research and Occupational Health in Zagreb, Croatia. After spending almost two years at the University of California at San Diego, US, Dr Kovarik was able to return to her home country to pursue her academic career through the support of a NATO-awarded Reintegration Grant (RIG) under the Security through Science Programme. This mechanism was established at the beginning of 2004 to assist young scientists from Partner countries with their academic pursuits in order to reduce the level of "brain drain" in transitioning societies.

The aim of Dr Kovarik's project is to identify antidotes able to neutralise the effects of nerve agents (Tabun, Soman, VX and Sarin) that structurally belong to the organophosphorus compounds. The treatment of the effects of nerve agents' contamination depends on the chemical structure of the compound. Over the last three decades around 160 compounds able to act as antidotes have been synthesised in laboratories in Croatia, however, only a limited number were studied in detail and those studied did not include the compound antidotes against organophosphorus compounds nerve agents.

Dr Kovarik carried out extensive research on this topic also during the time she spent in the US. Back in her home country, she has been focusing her research on identifying a combination of different enzymes that will be able to hinder the absorption by human bodies of organophosphorus compounds. The results of this study will help minimise the consequences of exposure to highly toxic chemical agents, which could be used in terrorist activities. This study fits indeed into the "Defence against Terrorism" priority research area of the NATO Programme for Security through Science.

The Reintegration Grant mechanism will support Dr Kovarik research activities for three years. RIGs are awarded on a three-year basis for the undertaking of a post-doctoral research project or the carrying out of doctoral research where the candidate has completed at least 50 per cent of his or her programme. Applicants should have completed a research period of at least 6 months in a NATO country. Scientists use the NATO-awarded grant to establish a research team in their home country in a research institute of their choice as well as to attend international meetings and conferences. Part of the funds also goes to the host institution in order to support the reintegration of the returning fellow. In general, RIGs provide € 20,000-25,000 in funding. The next deadline for submitting applications has been set for 1 July 2006.

Further information about applications related to Reintegration Grants can be found at :

http://www.nato.int/science/support/rig/rig-nfa.htm

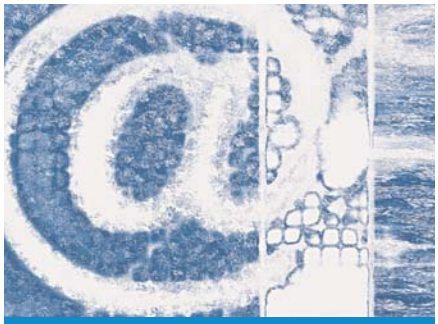
News from CCMS

CCMS meetings in Moscow

The CCMS in plenary session and the NATO-Russia Council (NRC) CCMS will meet in Moscow, Russian Federation, on 5 and 6 April 2006 respectively. At the CCMS meeting ongoing activities will be reviewed and possible new workshop proposals will be discussed, such as the Croatian and Slovenian proposed workshop on "Ballast Water Management with Special Emphasis on the Adriatic Sea". In the framework of the implementation of CCMS key objectives, a workshop jointly organised by Canada and Georgia, to be held in Georgia in October 2006, on "Environmental Management Systems in the Military Sector" will also be discussed. This workshop will be part of Georgia's Individual Partnership Action Plan (IPAP). The NRC CCMS meeting will be focused on the implementation of the NRC CCMS Action Plan and will include the participation of the Deputy Minister of Natural Resources of the Russian Federation V. Stepankov. At this 6 April meeting, the following issues will be discussed:

- The outcome of the roundtable held in Tver, Russian Federation, in February 2006 on the development, support and implementation of a regional action plan to prevent and eliminate the environmental consequences of oil spill products;
- The third follow -up workshop on oil spill response to be held in Halifax, Canada, in October 2006;
- The outcome of the third workshop on ecoterrorism held at NATO HQ on 22-23 March 2006. The next meeting of this short-term project will be hosted by Hungary on 5 and 6 October 2006;
- The joint Turkish and Russian proposal for a workshop on "Remote Sensing Technologies for Low Cost Environmental Monitoring".

In addition, a presentation will be given on a preparatory expert meeting that was held at NATO HQ on the "Use of Airborne Sensors on Military Airplanes for Environmental Monitoring".



Further information about CCMS:
www.nato.int/ccms

Enquiries about CCMS:
ccms@hq.nato.int

Environmental aspects of military compounds

This will be the topic of a CCMS workshop jointly organised by Austria and the Netherlands that will take place in Vienna, Austria, from 9 to 11 May 2006. Belgium, Canada, Croatia, the Czech Republic, Denmark, France, Germany, Greece, Italy, Lithuania, Romania, the UK and the US have indicated their interest in participating in this event. The main aim of this workshop is to discuss experiences regarding different environmental concerns that need to be taken into account while building or operating military field camps or compounds. Participants will consider the materials, methods and techniques used during the lifecycle of compounds, and their impact on drinking water facilities, wastewater treatment, waste management, storage of dangerous substances, soil protection and energy supply. Experts on the design, construction and daily operations of military compounds as well as on equipment such as wastewater treatment plants and waste incinerators will be invited. These experts are likely to be from the engineering, logistic and environmental branches of ministries of defence. It is hoped that the experts establish a network for future information sharing. Moreover, there is the possibility that a short-term project or a pilot study could result from this workshop.

Picture kindly provided by Hans Bronx

Final report of the pilot study on "Security of Narrow Waterways, Ports/Harbours and Adjacent Populated Areas"

Istanbul, Turkey

Launched at the CCMS plenary meeting in October 2002 and under the leadership of Turkey, this pilot study examined the safety and security of specific maritime assets and strategic choke points (formed by narrow waterways and straits) from possible terrorist attacks. This study has suggested possible protective and response measures to be put in place in order to reduce the risk and mitigate the consequences of these attacks.

Civilian maritime assets are considered to be attractive targets for terrorists since world trade heavily depends on the maritime transportation of energy and other goods. Oil and liquefied gas carriers as well as choke points, bridges, ports and harbours have all been identified as possible targets for attacks.

The results of this study are expected to be applicable to various choke points and assets in NATO countries and other strategic maritime assets and areas around the world. Experts from Bulgaria, France, Georgia, Germany, Greece, Italy, Romania, Russia, Turkey and the US took part in this study. A member of the NATO Planning Board for Inland Surface Transport (PBIST) was also involved in the discussions.

Fourth meeting of the pilot study on "Food chain security"

A fourth meeting was held in Alexandria (Virginia, US) on 1 and 2 November 2005 to continue the work on the pilot study on "Food chain security". New participants from Algeria, Portugal, UK and US attended the meeting, a clear sign that the security of food supply is becoming an agenda-setting issue.

Participants in the meeting were previously invited to gather information in their respective country on a prepared questionnaire, including questions on the risks to food products and the existence in food-making companies of food safety monitoring programmes. The results of the questionnaire were discussed and evaluated and views were shared among participants. The next meeting of this pilot study will be held in Helsinki, Finland, on 4 and 5 May 2006.

© ARS/USDA

Research with lasers and reflected light has resulted in new handled scanners that can detect bacterial contamination on meat carcasses. The scanners may revolutionise meat inspection and increase food safety and security for consumers.

Addressing the legacy of uranium extraction in Central Asia

➪ At the beginning of 2006, a Science for Peace (SfP) project on the effective management of uranium industry wastes for the prevention of health and environmental damage commenced in the Central Asian republics of Kazakhstan, Kyrgyzstan, Tajikistan and Uzbekistan. This project, which will last two years, is co-directed by Dr Peter Stegnar of the Jožef Stefan Institute in Ljubljana, Slovenia, and by Dr Igor Shishkov of the Joint Stock Company Volkovgeologia in Almaty, Kazakhstan. Other participating institutions include the Al-Farabi Kazakh National University in Kazakhstan; the Chu Ecological Laboratory, Kara Balta, Kyrgyz Republic; the state company Vostokredmet, Chkalovsk, Tajikistan; and, the Institute of Nuclear Physics, Tashkent, Uzbekistan.

Uranium ore mining and processing started in the former Soviet Republics of Kazakhstan, Kyrgyzstan, Tajikistan and Uzbekistan (the latter three sharing the Ferghana Valley) after the Second World War and lasted for almost half a century. Extensive mining and milling activities resulted in large amounts of uranium tailing materials and waste rock deposits often placed in inhabited areas or in close vicinity to towns and villages. Both materials may have a potential radiological impact on the environment and those living close to both the mines and disposal sites.

High levels of technologically enhanced natural radioactivity (TENORM) has resulted from uranium exploration, extraction and processing. Uranium exploration was carried out by drilling wells into the artesian basin containing uranium-rich sand and gravel beds. Several hundreds of these wells were drilled and water, containing higher levels of radium than permitted, drained onto the surrounding area. In the Ferghana Valley and Kazakhstan there are large areas of land heavily contaminated by TENORM. In Kazakhstan, it has been estimated that 13% of the territory is contaminated by radionuclides and the main sources of this contamination has been the nuclear tests and wastes produced by uranium industry. It has also been estimated that the volume of uranium tailing wastes exceeds 100 million tonnes in the Kyrgyz Republic, Uzbekistan and Tajikistan, while the volume of waste rock materials is several times greater than uranium mill tailing deposits. Given the absence of waste management in most areas, there is considerable potential for the spread of contamination beyond existing contaminated sites. To date, no comprehensive evaluation of the local population's exposure to radioactivity has been undertaken.

School built on uranium waste deposits in Taboshar, Tajikistan

Work related to this SfP project will be carried out in three phases:

- ➪ Characterisation of source-terms and determination of local contamination in selected uranium tailing sites;
- ➪ Radiation dose and impact assessment; and,
- ➪ Identification of appropriate mitigation/remediation counter-measures

The project is expected to contribute to the establishment and upgrading of environmental radioactivity laboratories as well as to the training of personnel, especially young scientists, in the use of contemporary equipment, survey methods and protocols. It will also promote education in radiological protection and the identification of immediate and urgent measures for emergency management. End-users of the project's results will include the Ministry of Environmental Protection of Kazakhstan and the Ministry of Ecology and Emergencies of the Kyrgyz Republic.

Camels drinking radioactive water in the Shu Sarysu region, Kazakhstan

This SfP project is embedded into the Environment and Security Initiative (ENVSEC). In this framework, NATO, the Organization for Security and Co-operation in Europe (OSCE), the United Nations Development Programme (UNDP) and United Nations Environment Programme (UNEP) collaborate with countries in Eastern Europe, Southeast Europe, the Caucasus and Central Asia through projects aimed at tackling environmental issues that can pose a threat regional security. This project will be coordinated with other ongoing or proposed associated initiatives of the International Atomic Energy Agency (IAEA), the International Science and Technology Centre, the Government of Norway and the World Bank. A project coordination group will coordinate the activities of all associated projects thereby ensuring the appropriate allocation of resources to tasks and avoiding inefficient duplication in the provision of equipment.

Degmai uranium waste site, Tajikistan