

**WORLDWIDE EMERGING ENVIRONMENTAL ISSUES AFFECTING THE U.S. MILITARY**  
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**U.S. Army Environmental Policy Institute**

**JUNE 2005 REPORT**

Note to Readers: Pages 1-14 comprise the summary and analysis of this report. This month's report has no appendix, as all items are available via the Internet links provided.

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## Report Documentation Page

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**Item 1. First International Research Center for “Creeping” Environmental Issues**

The world's first international research center dedicated to 'creeping environmental problems' has been established in the northwestern Chinese city of Lanzhou. These are the slow and cumulative problems, like global warming and desertification. The Center's vice-president, Ye Qian, is from the US National Center for Atmospheric Research. There will be more than 20 scientists from various countries working on the center's projects.

**Military Implications**

The military should consider establishing liaison with this institution, and follow its work. It affords an excellent opportunity to maintain contact with research and researchers on global long-range environmental issues.

**Source:**

Chinese centre to study 'creeping' environment issues

<http://www.scidev.net/News/index.cfm?fuseaction=readNews&itemid=2128&language=1>

**Item 2. WHO Project to Minimize Risks of Radon**

The World Health Organization (WHO) is launching the International Radon Project to help countries reduce the health risks associated with radon gas. Radon, a radioactive gas emanating from soil, is estimated to be the cause of 6–15% of lung cancer cases. The first phase of the project is designed to run for three years, 2005–07. It will assess risk levels, and exposure measurements and guidelines. It will also increase public and political awareness about the consequences of exposure to radon. It will also identify and promote effective strategies and policies useful to countries for mitigating health impacts of radon. Radon is present worldwide, in air and water, but its concentration is highly dependent on the content of uranium in soil.

**Military Implications:**

While Army environmental policy has for many years included remediation of radon occurrence in facilities at home and abroad, this development opens two new doors. First, host nations are likely to start promulgating standards needing cooperative attention under status of forces agreements. Second, host nation opportunities may arise to use Army radon mitigation management experience, training and technologies as environmental engagement tools.

**Sources:**

WHO launches project to minimize risks of radon

<http://www.who.int/mediacentre/news/notes/2005/np15/en/index.html>

General information about radon: <http://www.epa.gov/radon>

**Item 3. New Israeli Venture Capital Fund for "Clean Tech" Enterprises**

Israeli entrepreneurs and venture capitalists are fueling a burgeoning new crop of "clean technology" enterprises devoted to cleaning up the environment. A "cleantech" venture capital (VC) fund is being formed by the Millennium VC firm. Water management is a central element of

many of these efforts. The fund's manager says that, "In five years it [Israel] will be the only country to use all of its wastewater, mainly for agriculture."

### **Military Implications**

Information to judge the military value of products from successful new "clean" technology companies should be sought by military procurement personnel from this and other such VC sources.

### **Source**

Israeli Start-Ups Work on Environmental Technology

<http://www.planetark.com/avantgo/dailynewsstory.cfm?newsid=31333>

## **Item 4. Technological Breakthroughs with Environmental Security Implications**

### **4.1 Sandia researchers develop unique 'surfactant' material**

Sandia National Laboratories has developed a new class of surfactants (surface active agents) that are thermally degradable and easily removable in an inexpensive and environmentally friendly manner. These thermally cleavable (easily broken molecules) surfactants could have very large applicability in any field requiring modification of surface properties and where biodegradability is a primary concern.

### **Military Implications:**

This new class of materials might be an environmentally friendly, biodegradable alternative for military equipment and cleaning agents to reduce the military footprint on the environment.

### **Source:**

Sandia researchers develop unique 'surfactant' material

<http://www.sandia.gov/news-center/news-releases/2005/all/cleavable-surfactant.html>

### **4.2 New Technique to Convert Liquids to Semi-solids and Back Again**

Chemist Takeshi Naota, at Kyoto University in Japan, has developed a technique able to convert fuels, lubricants and paints into gelatinous semi-solids by adding a palladium-based compound and applying ultrasound. The process can be reversed by heat or more ultrasound to produce liquids.

### **Military Implications**

This research is still at an early stage, but, if generally applicable, may reduce environmental impacts through safer handling of toxic chemicals – solids are much more tractable in that regard than liquids. The military should closely follow this line of development, and encourage investigation of its use with substances of military interest.

### **Source**

Blast of sound turns liquid to jelly

NewScientist.com news service, Celeste Biever, 25 June 2005

<http://www.newscientist.com/article.ns?id=mg18625055.800>

### 4.3 New Antibacterial and Antitoxin Textiles

Researchers from North Carolina State University and textile scientists from Egypt have created a fabric that is up to 90% effective against three commonly occurring microorganisms: *Lactobacillus planterum*, *E. coli* and *Staphylococcus aureus*. Unlike conventional methods of coating, this plasma-based process eliminates chemical wastes, making it a more environmentally sound investment. The antimicrobial agents are attached to the molecular structure of fibers, creating a permanent bond between the fibers and the agent so that washing and wearing do not reduce the efficacy.

Using nanotechnology, researchers from North Carolina State University and University of Puerto Rico have developed "smart textiles" by attaching nanolayers to natural fibers. These layers can be customized for different chemicals and can block agents such as mustard or nerve gas while keeping the fabric breathable. Nanolayers can be attached to a fiber without undermining its comfort or usability, providing very high levels of protection.

#### **Military Implication**

These new textiles could considerably increase protection against biological and chemical agents. Since the protection is permanent and the technologies are more environmentally friendly and lighter weight than conventional alternatives, appropriate military personnel should evaluate the potential applications. Likewise, these materials might offer significant soldier health protection benefits in unhygienic environments.

#### **Sources:**

Scientists to Develop Textiles with Permanent Antibacterial Properties

<http://www.physorg.com/news4631.html>

Nanotech Researchers Develop High-Tech 'Smart Textile'

<http://www.physorg.com/news4246.html>

### Item 5. Nanotechnology's Bottom-up Approach Gets a Boost

Foresight Nanotech Institute and Battelle Memorial Institute will lead a broadly based project to create a nanotechnology roadmap to help investment become more strategic and help set goals. The roadmap will focus on a bottom-up approach to nanotechnology based on productive nanosystems, using molecular machines to make larger products, scaling up to desktop manufacturing systems. The current approach mostly focuses on the reverse: large machines making smaller things like nanotubes, and other arrangements of molecules and atoms. The roadmap will describe a step-by-step development process starting with today's laboratory capabilities and providing useful products at every stage. Creating a roadmap that includes a broader range of approaches to nanotechnology will make cost, benefits, and time-to-impact judgments more clear for all. Such a roadmap may also assist future developers of international agreements on nanotechnology standards and trade.

#### **Military Implications**

Such a road map could help military R&D agencies set priorities and timing for investments for a broad array of applications from nanosensors to detect toxins, to medical devices to repair tissues at the cellular level.

**Source:**

News Release: Foresight Nanotech Institute Launches Nanotechnology Roadmap

[http://www.foresight.org/cms/press\\_center/128](http://www.foresight.org/cms/press_center/128)

**Item 6. Nanotechnology Protest**

A group of environmental protesters disrobed in front of a high-end Madison Avenue clothing store in New York City to bring media attention against nanotech clothing that has stain-resistant nanotechnology-treated fabrics. This may be an early incident in a new anti-nanotech campaign that could grow into a major movement condemning uses of these new techniques. The situation is exacerbated by the very real lack of comprehensive scientific research on nanotechnology risks, and certainly by lack of public awareness of what is known about the hazards.

**Military Implications**

As the use of nanotechnology in military materiel spreads, the military community should increase the body of knowledge about nanotech risks, and ensure that this knowledge is communicated to procurement agencies, military personnel and their families, and the general public. This would also provide a knowledge base to support better decisions for R&D and applications. An opportunity still exists to be prepared, but may be closing.

**Source**

When Nanopants Attack

<http://www.wired.com/news/medtech/0,1286,67626,00.html?tw=rss.TOP>

**Item 7. Russia Accepts London Convention on Dumping of Radioactive Wastes**

The Russian Federation announced its acceptance of the regulations that ban dumping radioactive wastes in seawater, as stipulated under Resolution LC.51(16) to the London Convention. Adopted in 1993, Resolution LC.51(16) to the Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter, "London Convention", prohibits all forms of radioactive wastes dumping into seas (including incineration at sea of industrial wastes). The resolution is now in force for all 81 Parties to the London Convention.

**Military Implications:**

Although Russia already has considerable help from Western countries (including the U.S.) in managing nuclear waste, it is possible that more support will be needed to take all practicable steps to comply with the Resolution's provisions. (Note: the U.S. is Party to the London Convention.)

**Source:**

Russian Federation accepts ban on dumping of radioactive wastes under 1972 London Convention

<http://www.imo.org/home.asp>

The London Convention <http://www.londonconvention.org/main.htm>

## Item 8. Updates on Previously Identified Issues

### 8.1 Climate Change

#### 8.1.1 Joint Science Academies' Statement on Climate Change

The heads of eleven national academies of sciences (all G8 countries plus Brazil, China, and India) issued a joint statement: "Climate change is real". Documented with scientific and statistical data, the statement makes clear that global warming is occurring and all nations should engage in sustained long-term actions to reduce greenhouse gas emissions, and prepare for the inevitable consequences of climate change. Since the most affected would be those in developing nations, poverty and migration are likely to increase. Although global collaboration will be necessary, the statement also calls on G8 nations to show leadership in addressing climate change and assisting developing nations to meet the challenges of adaptation and mitigation. [See also 8.4 *Climate Change Updates* in April 2005 and other previous environmental security monthly reports.]

#### **Military Implications:**

This two-page statement should be distributed to military executives (civilian and uniformed). If good scenarios of military implications of climate change have not yet been written, then they should be. The scenarios could be used as an aid to assess specific impacts, inform research and development, and guide procurement of new cost-effective technologies with low greenhouse gas emission. This statement is intended to increase international pressure for stricter controls on pollutant emissions, including stringent national and regional measures, which could affect military training and operations in all theaters.

#### **Source:**

Text and signatures of the Joint science academies' statement:  
*Global response to climate change: Climate change is real*  
<http://nationalacademies.org/onpi/06072005.pdf>

#### 8.1.2 Improved Satellite Climate Change Monitoring

The UK's National Physical Laboratory designed the first unmanned probe able to calibrate its instruments in orbit, Traceable Radiometry Underpinning Terrestrial and Helio Studies (TRUTHS). This will reduce the margin of error and be able to supply more accurate satellite data, thus improving climate change parameter monitoring and helping settle international disputes over greenhouse gas emissions and strategies to curb global warming; e.g., carbon trading. [See also *Global Earth Observing System of Systems {GEOSS} Gets 10-Year Mandate* in February 2005, and *Improved coordination of global Earth observation* in August 2003 environmental security reports.]

#### **Military Implications:**

In addition to improved climate change monitoring, the new satellite capability could also increase GEOSS potential to help enforcement of international treaties worldwide, calling for more attention to compliance with the international legal requirements. These improvements could also enhance international assessments of human conflict environmental impacts.

#### **Source:**

New probe may silence climate skeptics  
 NewScientist.com news service, Duncan Graham-Rowe, 01 June 2005  
<http://www.newscientist.com/article.ns?id=mg18625023.600>

### 8.1.3 World's Mayors Sign Municipal Version of the Kyoto Protocol

Mayors from 70 of the world's largest cities signed the Urban Environmental Accords aiming to tackle global warming by implementing ecologically sustainable policies. The agreement specifies 21 actions that mayors should implement to improve their cities' environment, covering the domains of energy; waste; urban design; urban nature; transportation; environmental health; and water. It is expected that at least three actions will be implemented each year until World Environment Day 2012. The "Green Cities" event occurred in San Francisco, June 1-5, 2005.

#### **Military Implications:**

Managers of military facilities in or adjacent to major cities should anticipate being expected to participate in local civilian programs. Since military bases are like cities unto themselves, those responsible for base environmental management might review the 21 actions for applicability in their respective situations.

#### **Source:**

Urban Environmental Accords. Green Cities Declaration

[http://www.wed2005.org/pdfs/Accords\\_v5.25.pdf?PHPSESSID=ace872ed53a0d9fa5677c21935e59549](http://www.wed2005.org/pdfs/Accords_v5.25.pdf?PHPSESSID=ace872ed53a0d9fa5677c21935e59549)

### **8.2 North America's CEC Ministerial Statement**

At the 12<sup>th</sup> Regular Session of the Council of the Commission for Environmental Cooperation (CEC), the environment ministers of Canada, Mexico and the United States adopted the Strategic Plan 2005-2010, which sets the priorities and strategies to achieve the goals. This takes into account the recommendations of the Ten-year Review and Assessment Committee, the Joint Public Advisory Committee (JPAC), and key stakeholders. The priorities for the coming years are: the development of Information for Decision Making (based on high quality environmental information that is integrated and comparable); support for Capacity Building; Trade and Environment issues that help promote environmental protection and improve enforcement of environmental law; and Expand Partnerships for Environmental Stewardship. [See also *Review of NAFTA's Environmental Side Accord* in October 2003 environmental security report.]

#### **Military Implications:**

Relevant military personnel should review the CEC Strategic Plan 2005-2010 for impacts on their programs, procedures, and potentials for cooperation in view of the Army's Strategy for the Environment and the CEC's Partnerships for Environmental Stewardship strategies.

#### **Source:**

CEC Ministerial Statement

<http://www.cec.org/news/details/index.cfm?varlan=english&ID=2675>

### **8.3 Sweden Calls for World Ban on PFOS Chemical**

Sweden proposes a global ban on perfluorooctane sulfonate (PFOS), a chemical used by a number of industries including semiconductor makers, and which might be harmful to human and animal health. Sweden would propose the ban under the Stockholm Convention. Sweden hopes that if the approval of the regulation takes a long time, the scientific evidence will convince countries to take independent advance actions to phase out PFOS. [See also *Stockholm Convention on Persistent*

*Organic Pollutants (POPs) First Meeting of the Conference of the Parties* in the April 2005, and *8.2 New Chemicals Proposed to be Added to Stockholm Convention on POPs* in May 2005 environmental security scanning reports.]

### **Military Implications**

[Similar as May 2005] Although the U.S. is not Party to the Convention, the military should be prepared to comply with its requirements when acting in countries Party. Thus, in addition to the preparation for phase-out of the 12 already listed POPs, it should consider the military implications of the new additional substance suggested for ban and initiate its replacement.

#### **Source:**

Sweden Calls for World Ban on PFOS Chemical

<http://www.planetark.com/dailynewsstory.cfm/newsid/31243/story.htm>

### **8.4 EU Sets 2011 Deadline to Ban Mercury Exports**

EU Environment ministers decided to ban mercury exports by 2011. Europe is the world largest mercury exporter, supplying about one-third of global demand. It also proposed the phase-out of mercury in some products such as thermometers, and improved global efforts on mercury waste management. [See also *Governments Call for Global Assessment and Control of Mercury Pollution* in February 2005 environmental security report.]

#### **Military Implications:**

The military should consider doing its part in curbing mercury pollution by promoting best available techniques for reducing mercury use, emissions, wastes and surplus stockpiles, and participating in partnerships with organizations and countries requesting assistance. If Europe is one of its mercury suppliers, then the military should make the proper arrangements to find another source for its needs. In the long-run, mercury substitutes should be found.

#### **Source:**

EU sets 2011 deadline to ban mercury exports

<http://www.alertnet.org/thenews/newsdesk/L24190898.htm>

### **8.5 EU Commission Sets Long-term Energy Goals**

In April the EU Parliament's Industry Committee approved raising the 2006-2015 energy reduction goal from 10% to 11.5%. This month the EU Executive Commission set an objective of 20% reduction by 2020, saving €60B per year in fuel costs. New EU laws requiring efficient buildings and appliances may achieve half the goal, but additional measures will be needed. A group of legislators went further, calling for a goal of 23% reduction. [See *EU to Set Higher Targets for Cuts in Energy Consumption* in April 2005 environmental security report.]

#### **Military Implications**

[Same as in April 2005 report] It is not clear yet what the enforcement procedure will be; nevertheless, military forces stationed in the EU region should prepare to increase energy efficiency in meet the new targets.

#### **Source**

EU Wants 20 Percent Cut in Energy Use by 2020

<http://www.planetark.com/dailynewsstory.cfm/newsid/31375/story.htm>

### **8.6 Russian Green Party Formally Organized**

The Green Russia party (now its official name) has now been formally organized with Alexei Yablokov as its chairman and Alexander Nikitin, the former naval officer, and nuclear safety activist, as one of its principal figures. The party's major present goal is to achieve the 50,000 member level necessary for participation in elections. [See also *Russia's Green Movement Plans to Become a Political Party* of October, 2004 environmental security monthly report]

#### **Military Implications**

US military representatives in Russia should offer the new party access to material on environmental security, especially as it relates to military planning and operations, while being particularly careful to avoid any appearance of partisan support. They should also monitor the party's effect, if any, on government environment policy, to watch for changes that might affect Russia's position on international environmental issues and regulation. Findings should be shared with organizations like the departmental Deputy Assistant Secretaries for environment, the Army Environmental Policy Institute and the Air Force Center for Environmental Excellence.

#### **Sources:**

Veteran Russian ecologists form Green Russia party

[http://news.yahoo.com/news?tmpl=story&u=afp/20050605/sc\\_afp/russiapoliticsgreens\\_050605172821](http://news.yahoo.com/news?tmpl=story&u=afp/20050605/sc_afp/russiapoliticsgreens_050605172821)

Head of Russia's New Green Party Outlines Tasks, Problems

[http://www.rednova.com/news/science/154757/head\\_of\\_russias\\_new\\_green\\_party\\_outlines\\_tasks\\_problems/](http://www.rednova.com/news/science/154757/head_of_russias_new_green_party_outlines_tasks_problems/)

### **8.7 Coalition Urges UN to Consider Legislation to Curb Harmful Ocean Sounds**

The Ocean Noise Coalition urges the international community to pass regulations to curb harmful sound waves used by the oil and gas industry, and navies to detect submarines. Marine scientists state that there is increased evidence that these sounds are harmful to whales, dolphins and other marine life. The Coalition aimed to convince delegates from 148 nations to take action on the issue during their forthcoming consultations on oceans and marine law. [See also *Scientific Models Could Help Navy Avoid Whales During Sonar Tests* in February 2005, *European Parliament Resolution to Protect Whales From Sonar* in October 2004, and *Research Confirms Military and Industry Sonar Harms Whales* of July 2004 environmental security reports.]

#### **Military Implications**

[Similar to previous reports on the same issue] It is reasonable to speculate that scientific evidence and comprehensive global assessment might trigger new international regulations to limit the use of harmful undersea sonars. The frequency and nature of legal actions against military practices denote an increased liability of the military even for operations not explicitly polluting the environment (such as the use of sonar, radar and microwave.)

#### **Source:**

Coalition Urges UN Curbs on Harmful Ocean Sounds

<http://www.enn.com/today.html?id=7912>

## 8.8 The Controversies over GMO Bans Continue

The EU is still divided over GMO Bans. At the recent European Environment Council meeting, five European countries, Austria, France, Germany, Greece, and Luxembourg got majority support for rejecting the European Commission's proposal to lift the bans on transgenic varieties of maize and oilseed rape, under the justification that they present risks to human health and the environment. Meanwhile, Italy requested that the European Food Safety Authority (EFSA) conduct its own independent scientific research to assess possible health risks associated with GMO rather than rely on data provided by the biotech industry. [See also *EU Commission Seeks to Increase Biotech Food Safety* in January 2004 and *The EU Ended its Ban on Genetically Modified Foods* in May 2004 environmental security reports.]

Japan, after finding a U.S. corn cargo infected with the unapproved Bt-10 biotech corn variety, decided to test every U.S. cargo entering the country. In China, genetically modified rice illegal cultivation and commercialization is spreading, increasing concerns that the non-approved variety could enter markets overseas.

### **Military Implications:**

Although most of the European national safeguard measures include bans or restrictions on cultivation, some also refer to regulations on import and use in food and feed. As the EU countries do not have a common GMO policy, it is important to know each country's specifics in order to comply with the respective regulations. Japan introducing stricter control of imports, and Chinese spread of unapproved GMO varieties, might increase other countries' verification procedures for different varieties of GMO food that are banned; hence, all overseas shipping of food (including for military use) should be carefully inspected to certify that they comply with GMO regulations of the receiving country within status of forces agreement limits/freedoms.

### **Source:**

EU Environment Ministers Let Five States Keep GM Crop Bans

<http://www.ens-newswire.com/ens/jun2005/2005-06-27-03.asp>

Italy Calls for Independent EU Research on GMOs

<http://www.planetark.com/dailynewsstory.cfm/newsid/31035/story.htm>

Japan Finds US Biotech Corn, now to Test all Imports

<http://www.planetark.com/dailynewsstory.cfm/newsid/31062/story.htm>

Illegal GMO Rice Spreads across China – Greenpeace

<http://www.planetark.com/dailynewsstory.cfm/newsid/31219/story.htm>

## 8.9 Ratification began for the International Convention for the Control and Management of Ships' Ballast Water and Sediments

Australia is the first country to sign the international agreement regulating ships' ballast water, adopted in February 2004 by the UN International Maritime Organization (IMO), and began the ratification procedures. The International Convention for the Control and Management of Ships' Ballast Water and Sediments stipulates a series of measures aiming to prevent potential marine hazards caused by aquatic organisms carried by ships' ballast water. It will come into force 12 months after ratification by 30 countries, representing 35% of world merchant shipping tonnage. [See also *IMO Adopts New Convention on Ships' Ballast Water* in the February 2004 environmental security monthly scanning report.]

**Military Implications**

Military personnel involved in maritime operations and their civilian contractors should be aware of the new standards and requirements to ensure that their ships and operations are compliant. Also, as “Annex - Section C Additional measures” stipulates that a “Party, individually or jointly with other Parties, may impose on ships additional measures to prevent, reduce, or eliminate the transfer of Harmful Aquatic Organisms and Pathogens through ships' Ballast Water and Sediments”, the shipping companies (military or their civilian contractors) should communicate and be kept informed on the different States' measures.

**Sources**

Australia Signs Treaty to Limit Hitchhikers in Ballast Water

<http://www.ens-newswire.com/ens/jun2005/2005-06-02-03.asp>

International Convention for the Control and Management of Ships' Ballast Water and Sediments adopted in 2004 [http://www.imo.org/Environment/mainframe.asp?topic\\_id=548](http://www.imo.org/Environment/mainframe.asp?topic_id=548)

**Item 9. Reports to Review****9.1 Lux Report Addressing Nanotech Health, Environmental, and Safety Risks**

Nanotechnology's environmental, health, and safety (EHS) risks can be addressed responsibly today, states a new Lux Research report, *A Prudent Approach to Nanotech Environmental, Health, and Safety Risks*. Explaining different types of risks associated with nanotechnology, Lux estimates that of \$8 trillion projected manufacturing output using some nanotechnology through 2014, 25% is exposed to real risk at manufacturing (which should be easiest to mitigate), 7% is exposed to real risk at use, 14% is exposed to risk at end-of-life, while 40% is exposed to perceptual risk. The report states that risks can be effectively addressed today by using well-established risk management techniques, and it also suggests that specific actions from corporations, start-ups, investors, and governments are needed to address nanotech EHS risks. It comments that U.S. government funding for nanotech EHS risk assessment should be increased from the present earmarked 3.7% of the \$1.05 billion U.S. National Nanotechnology Initiative budget for 2006. [See also item 9.4 *Nanotechnology: Environmental Implications and Solutions* in May 2005 environmental security monthly report.]

Note: on June 29, 2005 Lux Research released *Nanotechnology: Where Does the U.S. Stand?* “assessing how U.S. research and business activities in nanotech measure up to those of international competitors.” (Report available only to Lux Research clients)

**Military Implications:**

[Same as in May 2005 monthly report] Together with the Millennium Project's study on Potential Health and Environmental Implications of use of Nanotechnology, and other literature and information already available, this report is a source of information and an awareness-raising instrument deserving careful analysis to aid in avoiding and mitigating future, real and perceptual issues.

**Source:**

Nanotechnology's Environmental, Health, And Safety Risks Can Be Addressed Responsibly Today

<http://www.nanoinvestornews.com/modules.php?name=News&file=article&sid=4380>

Lux Research information: <http://www.luxresearchinc.com>

## 9.2 European Nanotechnology Action Plan

The European Commission has announced its Action Plan to improve European competitiveness in nanotechnology. The plan outlines European-wide and national measures to strengthen nanotechnology research and implementation in a safe and responsible way. The measures in the action plan include: boosting funding—including research to assess possible impact on human health and the environment; respect of ethical principles and citizens' concerns and expectations; building risk assessment into the research and developing guidelines for such risk assessment (including reassessment of existing EU legislation); full access of the public to research; strengthening international dialogue on common issues; and improved infrastructure. The plan also calls for a legislative review, which may lead to future treaty provisions.

### **Military Implications:**

Those responsible for health and environmental impacts of future usage of nanotechnology should review the plan for new concepts, standards, and procedures.

### **Sources:**

The Nanotechnology Service of the European Commission (EU Nanotech latest news)

<http://www.cordis.lu/nanotechnology>

Looking small, thinking big – keeping Europe at the forefront of nanotechnology

<http://europa.eu.int/rapid/pressReleasesAction.do?reference=IP/05/717&format=HTML&aged=0&language=EN&guiLanguage=en>

## 9.3 *Desertification Synthesis* (Millennium Ecosystem Assessment 3)

The *Desertification Synthesis* report was launched on June 17, to mark World Day to Combat Desertification. It represents a synthesis and integration of the findings of the assessment of ecosystem change—mainly desertification—due to human activity, as well as the consequences of these changes on future human wellbeing. It provides scientific evidence for sustainable living policies. “Growing desertification worldwide threatens to swell by millions the number of poor forced to seek new homes and livelihoods,” according to the report. The *Desertification Synthesis* is part of a series of six MA synthesis reports. [See also items 9.1 *Biodiversity Synthesis Report* (*Millennium Ecosystem Assessment 2*) of May and 8.7 *Human Footprint on Earth Ecosystem at Critical Stage and Millennium Ecosystem Assessment Synthesis Report* of March 2005 environmental security monthly reports.]

### **Military Implications**

[Same as in May 2005 monthly report] The findings of this report reinforce and add to the previous reports of this kind. The military should review the report's findings and analyze their probable effects on military planning, training and operations. It is likely that these findings will lead to new international restrictions protecting the biosphere from human-caused damage.

### **Source:**

MA launches Desertification Synthesis Report on "World Day to Combat Desertification"

<http://www.millenniumassessment.org/en/Article.aspx?id=67>

Millennium Ecosystem Assessment

<http://www.millenniumassessment.org/en/index.aspx>

#### **9.4 *One Planet Many People—Atlas of our Changing Environment***

UNEP launched the *One Planet Many People Atlas* to mark World Environment Day 2005. Using satellite images that compare and contrast images of critical parts of the planet from a few decades ago with contemporary ones, the Atlas shows grave damaging environmental changes, addressing a variety of key environmental issues such as urbanization, deforestation, and melting glaciers.

##### **Military Implications:**

Along with the Millennium Ecosystem Assessment reports and other similar reports addressing ecological changes and the human footprint, this report is important input for policymakers in considering ecologically sustainable strategies.

##### **Source:**

*One Planet Many People—Atlas of our Changing Environment*  
<http://www.na.unep.net/OnePlanetManyPeople/index.php>

#### **9.5 *Europe 2005: The Ecological Footprint***

*Europe 2005: The Ecological Footprint* is a report launched at the European Parliament, by WWF and Global Footprint Network, analyzing the impact of Europe's lifestyle on the ecosystem. It reveals that Europe's ecological footprint is 2.2 times larger than its own biological capacity. With just 7% of world population, Europe consumes 17% of the world resources supply—a figure that has risen nearly 70% since 1961. The report shows that innovation and addressing ecological deficits are fundamental to maintaining Europe's competitiveness and wellbeing. *Europe 2005: The Ecological Footprint* is based on Global Footprint Network's National Footprint Accounts and analysis (specifically France, Germany, Greece, Poland, and the UK), as well as a comparison of the footprints of 25 European nations. [See also items 9.1 *Biodiversity Synthesis Report (Millennium Ecosystem Assessment 2)* of May and 8.7 *Human Footprint on Earth Ecosystem at Critical Stage and Millennium Ecosystem Assessment Synthesis Report* of March 2005 environmental security monthly reports.]

##### **Military Implications**

The report will be used to inform a larger EU effort to design a sustainable development strategy for the region. It is possible that the report—the first of its kind for Europe—will reinforce Europe's ecological policy, possibly triggering new regulations.

##### **Sources:**

Europe 2005: The Ecological Footprint (the report)  
[http://www.wwf.fi/wwf/www/uploads/pdf/ekologinen\\_jalanjalki\\_june05.pdf](http://www.wwf.fi/wwf/www/uploads/pdf/ekologinen_jalanjalki_june05.pdf)

Europe 2005: The Ecological Footprint (press release)  
[http://www.footprintnetwork.org/gfn\\_sub.php?content=europe2005](http://www.footprintnetwork.org/gfn_sub.php?content=europe2005)

#### **9.6 *UNU Report Urges the Need For a New Treaty on Deep-Sea Research***

A new international treaty is needed to regulate the search for new products from species in deep international waters, the Institute for Advanced Studies of the United Nations University warns in a report. Compounds found in marine organisms can be used in medicines, and commercial exploration lured by potential profits threatens unique deep-sea ecosystem. The report urges the need for a new treaty to regulate exploitation so that benefits from the research are shared fairly

and helps humanity as a whole. [See also *Could large-scale ocean zoning prevent conflicts?* of March 2005 environmental security monthly report.]

**Military Implication**

Natural resources under the deep sea have already caused some tensions, such as between China and Japan, and potential profitability of deep-sea research might accelerate this trend. Military planners should participate in designing a new framework as the lack of such regulatory framework or agreement may undermine regional stability, as well as deep-sea ecosystems.

**Sources:**

Bioprospecting of Genetic Resources in the Deep Seabed: Scientific, Legal and Policy Aspects  
<http://www.ias.unu.edu/binaries2/DeepSeabed.pdf>

Tapping the oceans' treasures: Bioprospecting in the Deep Seabed  
<http://www.ias.unu.edu/news/details.cfm/ArticleID/680/search/yes>

'Treaty needed' to regulate deep-sea bioprospecting  
<http://www.scidev.net/News/index.cfm?fuseaction=readNews&itemid=2151&language=1>