

THE LUGAR ENERGY REPORT

ASTANA | BAKU | TBILISI | TIRANA

LUGAR TRAVELS PIPELINE ROUTE

SENATOR: CASPIAN REGION CRITICAL TO ENERGY SECURITY

U.S. Sen. Dick Lugar furthered his focus on energy security in August by tracing the oil and natural gas exports from Central Asia, across the Caspian Sea and overland to Turkey and the Mediterranean Sea. Senator Lugar met with heads of state and industry leaders and examined key energy infrastructure in Kazakhstan, Azerbaijan and Georgia. These three countries anchor an area of the world critical to promoting international energy security by diversifying supplies and export routes to avoid the Middle East and Russia.



Senator Lugar's visit to the Caspian region followed the path of oil and gas and allowed him first-hand examination of the challenges and opportunities we face to secure our energy resources.

"Great expense and strategic planning have gone into moving the vast petroleum reserves from Central Asia to the rest of the world. This narrow petroleum corridor operates with Russia to the north, and Iran, Iraq and Syria to the south. It represents the extent the world is reaching for oil and natural gas and all the pitfalls that threaten that flow," Lugar said.

THREE THEMES

Three themes dominated Lugar's discussions of energy security with regional leaders:

1. The continued develop-

ment of oil and gas production in the region and importance of opening pipeline routes to U.S., European and world markets that avoid the Middle East and Russia.

While the opening of the Baku-Tbilisi-Ceyhan (BTC) oil pipeline adds to the substantial progress made over recent years, more is needed in the decades ahead for the mutual benefit of the region, the world and American consumers.

2. Wise and transparent governance that promotes democratic reform remains a critical priority for the region.

As exports of oil and natural

gas expand in the region, leaders must focus the revenue surges on economic development and avoid the temptation of increased authoritarianism and benefits for elites.

3. Russian influence remains a major consideration for each country as it develops resources and inter-regional relationships and as the U.S. increases its cooperation with governments in the region.

Diversifying export routes from Central Asia is a key element of U.S. interests in the region.

Continued on the next page

Inside this issue:

Chokepoints in Worldwide Oil Transit	3
The Price of Dependence	3
Six Threats of Energy Dependence	4
Lugar Hosts Energy Summit	5
Understanding Oil	5
Lugar-Obama Would Assist Georgian Weapons	6
Lugar Visits Georgia's CDC	7
Lugar Visits Georgian Troops	7

SENATOR: REGION CRITICAL TO ENERGY SECURITY

... continued from page one

KAZAKHSTAN

In meetings with government and private industry leaders in Astana, Kazakhstan, Senator Lugar discussed increasing oil and gas production and expanding and creating new export routes through partnerships between Kazakhstan and Azerbaijan. With anywhere from 9 to 40 billion barrels in oil reserves and 67 to 106 trillion cubic feet of natural gas, Kazakhstan has the potential to become a large source of energy exports for world markets and provide Europe and the U.S. with an important new energy supply.

Large-scale expansion of natural gas and oil exports will require significant new investment in infrastructure at the well and in pipelines for delivery, according to private industry leaders in the region. Even as options for increasing existing export routes through Russia are pursued, it is a strategic priority of the U.S. to work with the Kazakh government and private industry to open westward export routes across the Caspian and overland through Azerbaijan, Georgia and Turkey – avoiding territory subject to Russian or Iranian control.

The governments of Kazakhstan and Azerbaijan recently made progress in opening this westward supply route by signing an inter-governmental agreement to allow exports of Kazakh oil through Azerbaijan and into the BTC pipeline. This is an important milestone in relations between the countries and for international energy security.

As Senator Lugar discussed with Kazakhstan's energy minister, this agreement is a first step and much more work remains before substantial oil exports leave the country. Under the current arrangements, oil exports will travel by tanker across the

Caspian Sea and enter the pipeline near Baku, Azerbaijan. As the agreements progress, serious consideration should be given to the economic and strategic aspects in constructing oil and gas pipelines across the Caspian Sea to connect these two countries. Likewise, concerted negotiations for agreements on exporting natural gas should be pursued.

AZERBAIJAN

Traveling from Astana, Kazakhstan, to Baku, Azerbaijan, Senator Lugar met with President Aliyev and other key government and private sector leaders. Senator Lugar and President Aliyev discussed Azerbaijan's progress in increasing its energy exports, plans for transparent governance of oil and gas revenues and efforts to resist external pressure. Senator Lugar saw firsthand the opportunities and challenges of increased production on a visit to a BP-run drilling platform in the Caspian Sea.

Running 1,100 miles from the Caspian Sea to the Mediterranean with a carrying capacity of one million barrels of oil per day, the BTC pipeline began transporting oil in June 2006. Oil carried in this pipeline is an important contribution to meeting surging global demand, yet the greater value is that it opens up a direct export corridor from the Caspian to the rest of the world. The U.S. government has strongly supported the construction of this vital pipeline.

Senator Lugar also discussed the development of the South Caucasus Pipeline (SCP) with Azeri and Georgian officials, which will eventually carry natural gas from the Caspian to a distribution hub in Erzurum, Turkey. While the Azeri and Georgian sections of the SCP are expected to come into operation soon, the section running through Turkey is

behind schedule. With the world's largest natural gas reserves contained in Russia and Iran, opening an alternative source of natural gas in the region is an important diversification to enhance the security of our supply.

As Azerbaijan's exports have increased, it is reaping huge new increases in income. One analysis has estimated that by 2010, Azerbaijan could receive up to \$20 billion in new revenue, more than double its 2004 gross domestic product.

In several countries around the world, the revenue from oil exports has not reached the country's residents. Oil can be a source of conflict and corruption, and revenues can be diverted to support terrorism. Senator Lugar and President Aliyev discussed at length the management of new oil revenues and their relation to democratic progress in Azerbaijan. Ensuring transparency and promotion of development are stated priorities of President Aliyev, and Senator Lugar reaffirmed the need to make clear and strong progress toward these goals.

GEORGIA

Senator Lugar continued his trip westward from Azerbaijan to Georgia as he traced the path of the BTC pipeline. Senator Lugar viewed the BTC pipeline route and a pumping station via helicopter. The Georgian government has increased its security services to protect pipelines running through its country, and as larger quantities of oil and eventually gas transverse the country, security will be even more important.

Having virtually no oil and few natural gas reserves, Georgia relies heavily on imports from Russia. With natural gas supply contracts from Russia

being renegotiated and Russia's intention to demand higher prices, the Georgian government continues its efforts to prepare contingency plans and improve the energy efficiency of its economy. It needs to continue to work with Azerbaijan to increase trade in energy and to diversify its fuels sources. Senator Lugar reaffirmed the United States' commitment to work with Georgia in its efforts for energy security.



Senator Lugar speaks to the media at a military training center near Sachkhere, Georgia

After returning from the trip, Senator Lugar spoke about the Caspian Sea region in the keynote address to the Richard G. Lugar-Purdue University Summit on Energy Security: "U.S. policy toward the region faces a difficult balance of strengthening our energy security relationships in the region, promoting democratic and human rights ideals, eliminating dangerous weapons, and, all the while, continuing to foster a productive relationship with Russia, which has great interest in the region. This balance is both difficult and necessary, but it is possible."

The United States must make the strategic choice to continue to expand energy cooperation with these countries as it promotes wider foreign policy concerns of countering weapons proliferation, promoting human rights and supporting democratic reform in the region.

CHOKEPOINTS IN WORLDWIDE OIL TRANSIT

Oil production is a multi-step process; it must be extracted from the ground, distributed via pipeline or tanker and refined into useful products (such as gasoline, fuel oil, propane, etc.). Pipelines are the ideal mode of transport for transcontinental oil because of the convenience and low cost, while tankers most often carry oil between continents. At any given time, about half the world's daily oil supply is in transit in a tanker. In short, the world's oil dependence is facilitated by a complex delivery system, which, if disrupted, could dramatically impair the global economy.

Oil supplies are particularly vulnerable at specific geographical "chokepoints" en route to their final destination. Maritime chokepoints are narrow straights between large bodies of water that are critically important to the world oil market because of the large quantities of oil that pass through them, but that could be easily damaged by terrorist attack, natural disaster or accident. By far, the most important maritime chokepoint is the Strait of Hormuz, located between Iran and Oman, joining the Persian Gulf with the Gulf of Oman and the Indian Ocean. More than 17 million barrels of oil (twenty percent of the world's oil supply) pass through this strait alone. Interruptions in this strait would delay oil shipments to the United States, Western Europe and Japan.

In addition to the Strait of Hormuz, the world's most vulnerable waterways include: the Strait of Malacca, facilitat-

lays, shortages and price increases. Transcontinental pipelines that span the territory of many different coun-

tries or regions are more vulnerable than self-contained pipelines. Nevertheless, even pipelines delivering oil from one part of a nation to another could be susceptible to terrorism and accidents, as the corrosion damage sustained by America's Alaskan pipeline demonstrated.

Experts at a March 30, 2006, Senate Foreign Relations Committee hearing estimated that the hidden costs of ensuring access to these chokepoints totals \$304.9 billion annually, or the equivalent of adding \$3.68 to the price of a gallon of gasoline imported from the Persian Gulf. They further testified that oil supply disruptions could cause America's gross national product to decline by 5 percent or more, causing a severe recession, and noted that oil supply disruptions have preceded nine of the last ten recessions in the U.S.



Satellite photo of the Strait of Hormuz.

ing oil coming from the Persian Gulf to Asia; the Bal al Mandeb Strait from the Arabian Sea to the Red Sea; the Panama Canal, connecting the Atlantic and Pacific oceans; the Suez Canal connecting the Red Sea with the Mediterranean Sea and European markets; and the Turkish Bosphorus Straits connecting oil from Russia and the Caspian region to the rest of the world.

Landlocked pathways that move huge quantities of oil include: the Panama pipeline in Central America; the Sumed pipeline in Egypt; the Druzhba pipeline in Russia; the Baku-Tbilisi-Ceyhan pipeline running through Azerbaijan, Georgia and Turkey; and the Caspian Pipeline Consortium, carrying oil from Kazakhstan across Russia. With each of these pipelines transporting up to 3 million barrels of oil per day, even temporary displacement or damage would cause noticeable de-

THE PRICE OF DEPENDENCE

The United States imports approximately 60 percent of its oil and approximately 18 percent of its natural gas, and Senator Lugar has warned about the possibility of blackmail by energy rich countries.

The materialization of this threat could shift the focus of the energy problem from American wallets to our well-being, as it did for Ukraine earlier this year.

In January 2006, the Russian government refused to provide a portion of natural gas to Ukraine following a dispute over price increases with its pro-Western government. The cutoff also led to sharp drops in gas supplies to European countries that depend on natural gas moving through Ukrainian pipelines, and Russia charged Ukraine with di-

verting gas intended for Austria, Italy, France, Hungary, and other European nations. Eventually, the confrontation was resolved with a near doubling of the price of natural gas sold by Russia to Ukraine. In contrast, Russia did not inflict such a price increase on Belarus, considered by Moscow to be a good partner.

The episode between Ukraine and Russia underscores the vulnerability of consumer nations to their energy suppliers. A complete natural gas shutdown to Ukraine in the middle of winter could have caused death and economic loss on the scale of a military attack. Even though energy is not associated with conventional warfare, it is becoming the weapon of choice for those who possess its resources.

THE SIX THREATS OF ENERGY DEPENDENCE

In August 2005, Senator Lugar undertook a diplomatic mission to Libya to discuss Libya's hopeful return to the international mainstream. Sitting under a tent in the middle of a desert, he discussed with Muammar Qaddafi and other Libyan officials a range of pressing issues, from re-opening the U.S. embassy in Tripoli to dismantlement of Libyan weapons. Yet it was in the Corinthia Hotel in Tripoli where Senator Lugar observed a worrisome new trend in world power politics. The hotel was full of representatives from Chinese, Indian and Western oil companies who had traveled to Libya to stake out drilling or refining options for every pool of oil that the government might make available.

The Corinthia Hotel was a microcosm of the new reality of geopolitics. As global demand for energy burgeons and resources become more scarce and tightly controlled by foreign governments, America's dependence on oil will become a larger threat to U.S. national security. As Senator Lugar stated in a March 2006 speech at the Brookings Institution in Washington, D.C., "no one who is honestly assessing the decline of American leverage around the world due to our energy dependence can fail to see that energy is the albatross of U.S. national security."

To articulate this point, Senator Lugar has identified six threats to U.S. national security and global prosperity posed by energy dependence:

First, **oil is vulnerable to supply disruption** as a result of natural disasters, wars and terrorist attacks. Within the last year, the international flow of oil has been disrupted by hurricanes, unrest in Nigeria and continued sabotage in Iraq. In late February 2006, terrorists penetrated the outer defenses of Saudi Arabia's largest oil processing facility with car bombs before being stopped. Al-Qaeda and other terrorist organizations have openly declared their intent to attack oil facilities to inflict pain on Western economies. The price shocks felt by all Americans after Hurricanes Katrina and Rita could pale in comparison to a price spike that would result from a successful terrorist attack.

Second, worldwide **oil and natural gas reserves are becoming more limited** at the same time that there is increasing demand. In the short term, this will make oil even more expensive. In the long run we will face the prospect that the world's supply of oil may not be abundant and accessible enough to support continued economic growth in both the industrialized West and in large rapidly growing economies. Foreign governments control 79% of global oil reserves today. There is no guarantee that they will be willing or able to devote the resources necessary to increase production capacity to meet growing demand. As we approach the point where the world's oil-hungry economies are competing for insufficient supplies of energy, oil will become an even stronger magnet for conflict.

Third, the **use of energy as an overt weapon** by producing nations is not a theoretical threat of the future; it is happening now. Adversarial regimes from Venezuela, to Iran, to Russia are using energy supplies as leverage against their neighbors. We are used to thinking in terms of conventional warfare between nations, but energy is becoming a weapon of choice for those who possess its resources. Nations experiencing a cutoff of energy supplies, or even the threat of a cutoff, may become desperate, increasing the chances of armed conflict, terrorism and economic collapse.

Fourth, the oil and natural gas revenues flowing to authoritarian regimes often **increase corruption in those countries and hurt democratic reform** by allowing regimes to insulate themselves from international pressure and the aspirations of their own peoples. We are transferring hundreds of billions of dollars each year to some of the least accountable regimes in the world. In many oil rich nations, oil wealth has done little for the people, while ensuring less reform, less democracy, fewer free market activities, and further enrichment of elites. Some oil-rich nations are using this money to invest abroad in terrorism, instability or demagogic appeals to populism.

Fifth, the threat of **global climate change** has been made worse by inefficient and unclean use of non-renewable energy like oil. In the long run this could bring drought, fam-

ine, disease, and mass migration. Responses by governments struggling to respond to climate change-induced disaster could lead to conflict and instability.

Sixth, dependence on **oil increases instability and undermines development in much of the developing world**. Poor countries are hit hard by rising energy costs, which often cancel the benefits of foreign assistance. Without diversification of energy supplies emphasizing environmentally friendly and abundant energy sources in most developing countries, the national incomes of energy poor nations will remain depressed with negative consequences for stability, development, disease eradication, and efforts to combat the root causes of terrorism.

Each threat poses unique challenges to our national security, and all are aggravated by our own dependence on oil. U.S. dependence on fossil fuels and their growing scarcity worldwide have already created conditions that are threatening our security and prosperity and undermining international stability. In the absence of revolutionary changes in energy policy, we risk multiple disasters for our country that will constrain living standards, undermine our foreign policy goals and leave Americans highly vulnerable to the machinations of rogue states.



The Lugar Energy Initiative

Driving the Future of
Energy Security

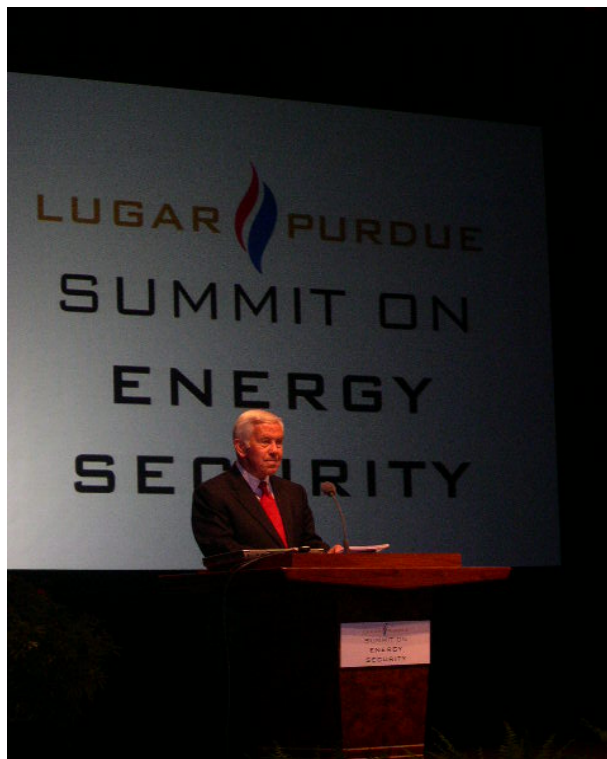
<http://lugar.senate.gov/energy>



LUGAR HOSTS ENERGY SUMMIT

On Tuesday, August 29, 2006, Senator Lugar partnered with Purdue University to host the Richard G. Lugar-Purdue University Summit on Energy Security in West Lafayette, Indiana. Approximately 1,000 people attended the summit, which brought together national leaders from government, business, academia, and various energy-related fields to consider prospects for sources of liquid fuels beyond oil.

In a joint statement, Senator Lugar and Purdue President Martin Jischke said, "Because of America's growing dependence on imported petroleum, the nation is rapidly approaching a crisis that could threaten the economy, our national security, and the very future of our country. Much of the world's oil supplies are in the hands of nations that either are not supportive of America's interests or are politically unstable. We believe it is time to explore alternatives to our high level of dependence on imported oil."



Senator Lugar at the Lugar-Purdue Summit on Energy Security.

To this end, Senator Lugar proposed dramatic and immediate action to increase energy security in his keynote

address. "The United States should adopt a national program that would make virtually every car sold in America a flexible fuel vehicle," Lugar

said. "We should ensure that at least one quarter of filling stations in America have E85 pumps. We should expand ethanol production to 100 billion gallons a year by 2025, a figure that could be achieved by doubling output every five years. We should also create an approximate \$45 per barrel price floor on oil through a variable ethanol tax credit to ensure that investments keep flowing to alternatives. And we should enact stricter vehicle mileage standards to point automobile innovation toward conservation. The plan I am proposing today would achieve the replacement of 6.5 million barrels of oil per day by volume -- the rough equivalent of one third of the oil used in America and one half of our current oil imports."

Purdue University was an ideal partner for the Summit because of the broad range of agricultural, engineering and business resources it devotes to energy security.

UNDERSTANDING OIL ECONOMICS

Top Oil Consumers

(in millions of barrels per day)

United States:	20.7
China:	6.4
Japan:	5.35
Russia:	2.77
Germany:	2.64
India:	2.45

World oil consumption reached approximately 84 million barrels per day (bpd) in 2005, and the United States constituted about one quarter of that demand, or 20.7 million bpd. If current consumption trends continue, world demand will reach 118 million bpd by 2030, while U.S. demand will approach 30 million bpd.

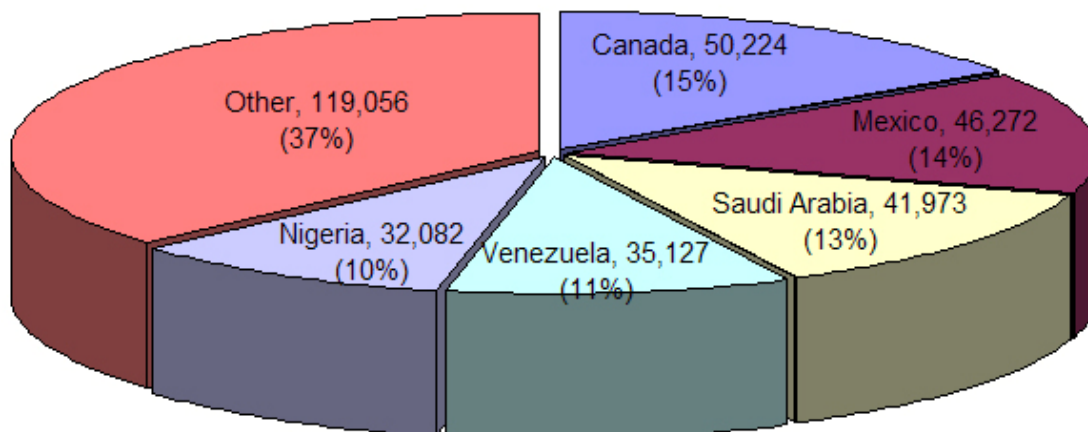
U.S. oil companies can only supply about 40 percent of U.S. demand for oil, leaving

the remaining 60 percent for import. The top five suppliers of oil to the United States in

2005 were Canada, Mexico, Saudi Arabia, Venezuela, and Nigeria.

Top Suppliers of U.S. Imported Crude Oil

(average barrels per month)



LUGAR-OBAMA WOULD ASSIST GEORGIAN CONVENTIONAL WEAPONS DESTRUCTION

Tbilisi, Georgia - U.S. Senate Foreign Relations Committee Chairman Dick Lugar visited a conventional weapons storage site in Georgia containing man-portable air defense systems (MANPADs) and other types of rockets and missiles. The destruction of these weapons is the goal of the Lugar-Obama bill that requires the Secretary of State to establish a global program focused on reducing the threats posed by conventional weapons.

The Georgian facility is one of at least nine former-Soviet munitions storage sites in the country containing thousands of tons of munitions, rockets, missiles, MANPADs, mortar rounds, small arms ammunition, and larger ordnance. These weapons and munitions were left behind when the Soviet Union collapsed.



A Georgian surface-to-air missile system with an operational range of approximately 15 miles. The missiles are about 18 feet long and travel at speeds exceeding Mach 3.

“To date the U.S. response to these threats has been inadequate. U.S. assistance to

countries seeking to eliminate proliferation-vulnerable surplus conventional stockpiles

is woefully underfunded, unorganized and lacking high-level leadership. The weapons stored here are a potential threat to U.S. and Georgian security and they must be destroyed,” Senator Lugar said.

and other conventional weapons and tactical missile systems, as well as related equipment and facilities that pose a threat to U.S. interests. The bill would increase U.S. funds available for assisting Georgia and other countries to destroy excess stocks of conventional weapons from \$8 million to \$33 million.

NUNN-LUGAR TO BEGIN DESTROYING CHEMICAL WEAPONS IN ALBANIA

In August 2004, Lugar visited an Albanian chemical weapons storage site to discuss the need for security upgrades and prospects for U.S. assistance in eliminating the weapons. Two years later the destruction equipment has been delivered and assembled. The system is currently being tested and readied for destruction and weapons elimination is scheduled to begin next month.

Nunn-Lugar was able to destroy these weapons in Albania because of the Nunn-Lugar Expansion Act passed

by Congress in 2003, which allowed \$50 million in Nunn-Lugar funding to be used outside the former Soviet Union. This Act allows the U.S. to take advantage of non-proliferation opportunities wherever they may appear.

“I commend the Government of Albania for their close cooperation in ensuring the elimination of these dangerous weapons of mass destruction. Together we will have made the people of Albania and the United States safer and contributed to regional and international security,” Lugar said.

In recent years concerns have grown that terrorists could use these weapons to attack commercial airliners, military installations, and government facilities at home and abroad. The proliferation of these weapons systems also poses a major obstacle to peace, reconstruction and economic development in countries suffering from conflict and instability such as Georgia.

The Lugar-Obama bill focuses on establishing a global program to secure, remove or eliminate stocks of MANPADS

Senator Lugar and Senator Barack Obama (D-IL) traveled together to Russia, Ukraine and Azerbaijan in August 2005 to oversee a number of Nunn-Lugar projects. In Donetsk, Ukraine, they toured a conventional weapons destruction facility where the U.S. has taken the lead in a three-year NATO program to destroy the conventional weapons. The facility is typical of the focus of the Lugar-Obama legislation.

LUGAR VISITS GEORGIAN CDC

CALLS IT A MODEL FOR INTERNATIONAL COOPERATION ON INFECTIOUS DISEASE

Tbilisi, Georgia - U.S. Senate Foreign Relations Committee Chairman Dick Lugar visited the Georgian Center for Disease Control, home to anthrax, plague and botulinum toxin, and commended Georgia for its efforts to reduce the threats posed by infectious diseases.

Georgia is the first country to agree to consolidate all of its pathogen strains in one location, and through the Nunn-Lugar Program the U.S. has provided Georgia with security upgrades to ensure these pathogens remain secure. Earlier this year, construction

began on a permanent Central Reference Laboratory financed by the Nunn-Lugar Program that will serve as a joint U.S.-Georgian laboratory similar to the Defense Department laboratories in Egypt, Thailand and Indonesia. Upon completion, the pathogens will be transferred to the new facility.

Through cooperative research, Georgian scientists are working with personnel from the U.S. Army Medical Research Institute of Infectious Diseases (USAMRIID), including personnel from Walter Reed Army Medical Cen-

ter, to study strains of dangerous pathogens and infectious diseases, such as tick-borne encephalitis, anthrax and West Nile. Approximately 180 scientists are involved in diagnosing malaria, immunizing children, conducting research, developing and promoting educational health programs, collecting medical statistics, and preparing regulations for epidemiological stations.

The Government of Georgia has provided the U.S. with samples of various strains in its possession so the research can be expanded. The data will provide the U.S. with

a reference to compare U.S. strains of diseases with Georgian strains.

In addition to its work at the Center for Disease Control and the Central Reference Laboratory, the Nunn-Lugar Program is dismantling a former Soviet biological weapons production facility outside of Tbilisi. The Department of State is working closely with Nunn-Lugar to establish a feed/micronutrient production facility at the former weapons site to ensure that the scientists working there have peaceful employment.



Tbilisi, Georgia – U.S. Senate Foreign Relations Committee Chairman Dick Lugar (second from left) visited Georgian mountain troops with their President Mikhail Saakashvili (fourth from left) to inaugurate the opening of a military training center near the village of Sachkhere that will support the development of the Georgian armed forces in meeting NATO standards. Senator Lugar expressed his strong support for Georgia's aspirations to join the NATO Alliance.