



## THE DEBATE

# Dangerous Intersection: Climate Change and National Security

**W**hile addressing the graduates of the Coast Guard academy last spring, President Obama told the assembled ensigns that climate change would be a defining national security issue for their time in uniform. Then in the fall, in a village facing immediate threats of sea-level rise, he told Alaskan Natives that “if another country threatened to wipe out an American town, we’d do everything in our power to protect it. . . . Climate change poses that same threat now.” The president has raised a red flag over an issue that has concerned defense officials and the national security establishment for several years now, as well as the environmental community.

The dangers of climate change are not usually couched in terms of national security, but awareness of the issue is growing rapidly. Triggered by climate and a potential harbinger for instability to come, no example is more potent than the refugee crisis in Europe and the Middle East. Accord-

ing to *New Scientist*, “Climate triggered the crisis in Syria, so the world must brace itself for more climate refugees in the years to come.”

What could be more basic to national security than a climate conducive for agriculture, abundant water supplies, ecosystem health, industrial production, biodiversity, and human comfort? What could be more threatening than extreme weather events or mass migrations because of rising seas and crop failures? The Alliance of Small Island States fears that they could literally be wiped off the map because of rising sea levels.

The ELI-Miriam Hamilton Keare Forum, held the afternoon before the annual Award Dinner on October 20, presented a high-level panel focused on national security as an important stepping stone on the road to the Paris climate agreement. The event brought together key players shaping the discussion. Here we present a transcript edited for clarity and length.



*“For a long time climate change was seen as a relatively tolerable risk. Now, the tolerability of that risk has started to decrease.”*

**Francesco Femia**

*Founding Director*  
THE CENTER FOR CLIMATE AND SECURITY



*“The reason climate change is an issue is because we have 7.3 billion people on the globe, and as many as 10 billion by 2050.”*

**Leo Goff**

*Military Advisory Board*  
CENTER FOR NAVAL ANALYSES



*“If I have one message for you, it is this: The challenge is urgent. The risks are severe, and there’s no going back.”*

**Alice Hill**

*Senior Director for Resilience*  
NATIONAL SECURITY COUNCIL



*“Fish stocks have been affected and coral bleaching caused by ocean acidification has affected tourism.”*

**Thilmeeza Hussain**

*Co-founder*  
VOICE OF WOMEN – MALDIVES



*“There could be increased demand for humanitarian operations, and real trouble for our allies.”*

**Marcus King**

*John O. Rankin Associate Professor of International Affairs*  
GEORGE WASHINGTON UNIVERSITY



*“At the Department of Defense, we deal with risks all the time. We see climate change and recognize it as a risk.”*

**Maureen Sullivan**

*Deputy Assistant Secretary for Environment, Safety, and Occupational Health*  
DEPARTMENT OF DEFENSE

**Leo Goff, moderator:** The number one reason that climate change is an issue is because we have 7.3 billion people on the globe, soon to be 8 billion people by 2025 and as many as 10 billion by the middle of the century.

Additionally, the people that insist on little action on climate change say, “Well, the climate has been changing for the entire time the world has been in existence.” And in fact over the last 650 million years, the climate has gone through seven Ice Ages. But for the last 10,000 years, about the time that people have existed in modern form, it has been relatively stable.

Climate by its very definition is a 30-year phenomenon. When people look back and say, “Well, the climate hasn’t done anything for the last 10 years,” they are not talking about climate change, they are talking about weather. We have to look at trends, and military guys are good at looking at trends, that’s what we do. The warmest 20 years ever recorded have all been within the last 35 years. That’s a trend.

So, what are the major impacts? The oceans have been a big heat sink, moderating temperature. But with heat you get thermal expansion and sea-level rise. You also get melting of the Arctic ice cap and mountain snowpack, injecting fresh water into the sea. In addition, carbon dioxide dissolved in the oceans has made them more acidic.

So, the oceans are warming, there is more water in the atmosphere, we have more extreme weather events — more snow, more rain, and in places where the ocean currents change, we have more drought.

Today, we are going to talk about this phenomenon of climate change as a security risk. To start off, I’m going to first turn to Francesco Femia, the head of the Center for Climate and Security.

**Francesco Femia:** The question that a lot of audiences have is, Why is climate change a security risk?

Why does the security community care? Why does the military care? Why does the intelligence community care? The reason is risk management. For a long time climate change was seen as a relatively tolerable risk. Now, the tolerability of that risk has started to decrease. And so the security community has started to look at climate change as a long-term risk and as an immediate risk. We saw a good example of that in the 2014 Quadrennial Defense Review.

There are two baskets of risk that the military and the broader national security community thinks about, and the first is the impact on infrastructure, in particular the military’s infrastructure. The navy has military bases at sea level. Those are at risk.

The second basket is indirect and falls under the heading of threat multiplier. Climate change presents some indirect risks by multiplying other risks to national and international security, whether it is a lack of food, water, or energy. Climate change can accelerate risks to already fragile states. An example is Syria, where we’ve seen existing vulnerabilities exacerbated by climate change, vulnerabilities in terms of water and food production that can increase the likelihood of either state instability or even conflict.

There is another area that’s not often talked about. How does climate change affect traditional security risk, such as our relationship with China? The South China Sea is a strategically significant place. It is an important fishery. What happens when fishermen move into contested waters and what does the U.S. need to do when something like that happens? What about our relationship with Russia in the Arctic as the icecap melts? What does it mean in strategically significant places like Iran and North Africa, which are experiencing some of the most dramatic precipitation decline in the world?

**Leo Goff:** Let’s talk about the nexus among climate and energy and

water. Why are these linked as a security threat?

**Francesco Femia:** There is definitely a climate-water-energy nexus. About a decade ago, Australia got very interested in its nuclear program. It takes a lot of water to cool nuclear reactors. China is a water-poor nation that wants to produce as much energy as possible to bring its burgeoning population into prosperity, and that’s going to be a problem there.

**Leo Goff:** I want to ask a question of Alice Hill, special assistant to the president and senior director for resilience at the White House National Security Council. The president has been forward on the need to take climate action. He talks about the risks associated with climate change, and one of them is conflict over resources. You were prominent in crafting the Climate-Resilient International Development Executive Order. Building on what Frank has said, can you share with us how the president looks at this, how you and the White House deal with it, how the National Security Council approaches it?

**Alice Hill:** The military’s ability to carry out its missions will be challenged. These challenges include the increase in demand for humanitarian aid from events like Typhoon Haiyan in the Philippines in 2013. We also see climate change as a problem for our soldiers. We had to shut down some training because it got too hot in the West.

So, there are impacts on the missions for the military and there are global implications, including mass migrations and some kinds of state conflict.

If you look at how this administration and practitioners of national security now view climate change, this is about our prosperity, our health, our safety. And climate change is going to affect every single one of those things — it already has. When you start looking at the size of the climate impacts, they can be destabilizing to a nation, they can be

destabilizing to the global economy. If the Greenland ice sheet melts, that will produce 20 to 24 feet of sea-level rise. What you have to remember about climate change is that these impacts are irreversible.

In the risk-management world, what does it mean for a country like Bangladesh? They already have salinity problems because the sea is intruding into their farmlands and drinking water. And I'm sure we'll hear about the great and grave risks to the Maldives and other island nations that are facing the existential threat that they will soon disappear.

When farmers can't farm because we no longer have water, which is a significant risk, we no longer have stability in our food supply. The same applies if fishermen can't fish because the ocean is acidified. People scatter when they can no longer make a living. We are already beginning to see that.

On the National Security Council, I work on the Homeland Security side. We are very concerned about infrastructure and infrastructure resilience. Hurricane Sandy was a great lesson. When one critical sector of infrastructure fails, there are cascading failures. The storm surge in Sandy was 14 feet and it flooded an electrical substation. Lower Manhattan went completely dark. We ended up evacuating 6,000 patients from hospitals. If you don't have power, you have no fuel distribution. Our wastewater treatment plants failed. And we can anticipate every 25 years we will have a Sandy-like flooding event in Manhattan.

The drought in California is like none other that we've seen. The same is true of the recent massive rains in the Carolinas. All of that affects our infrastructure and our economy. We need to find ways to be better prepared, address those impacts, and make sure that we are minimizing their detriment to our economy, our safety, and our health.

I am a former judge. I heard thousands of cases, many of which

involved scientific evidence. You are lawyers. You hear scientific evidence, you present scientific evidence in front of juries. It is beyond a reasonable doubt that these impacts are occurring. They are matching the predicted trend-lines, and frankly the cost is high. That is why the president has created the Climate Action Plan — to cut emissions, prepare for the impacts, and lead internationally.

If I have one message for you, it is this: The challenge is urgent. The risks are severe, and there's no going back.

**Leo Goff:** Maureen Sullivan is the deputy assistant secretary of defense for environment, safety, and occupational health in the office of the assistant secretary of defense. Can you tell us how the military is approaching climate change, why these generally conservative people are embracing it as a threat? Also, please tell us what you are doing in response on the climate adaptation roadmap.

**Maureen Sullivan:** At the Department of Defense, we deal with risks all the time. That's what the military does. We evaluate risk and say, "Well, given these probable scenarios, how should we plan to address them?" That is the military mindset.

We see climate change and recognize it as a risk. And we try to bin it in two general areas. One is risk to the mission we perform in the military, whether it be armed conflict or humanitarian assistance. The second is, risk to our ability to train and equip our military service members to be prepared to fight the mission and perform their duties. In the first instance, we are engaging in partnerships with countries in need to help them build capacity, to build resilience within their own countries so there is less need for the U.S. military to be the world's 911.

Not only are many of our bases at sea level, some of our bases are running out of water, which impacts our mission. This is a factor in our decisionmaking. When we make investments in infrastructure, we take into consideration these climate

factors and make informed decisions. For example, if we're going to build a new wastewater treatment plant at West Point, which we are, we're going to raise it up higher and build it in a better location.

The next phase is to look at our supply chain in the equipment realm. Is our supply chain strong enough to be able to withstand these changes so we can have a ready force?

**Leo Goff:** Maureen, do you see climate change today impacting the ability to train?

**Maureen Sullivan:** We're having days that are so hot — we call them red flag days — where we cannot train. Remember, with the military, you're talking a young, healthy workforce. When we say it's too hot for this physically fit young group to train, that says a lot.

But it's also about the impacts on our 25 million acres of land, a lot of it protected habitat for endangered species, which impacts our training. Are we able to sustain a forested environment to provide forested training? Are we providing realistic scenarios so the force is ready for the challenges?

**Leo Goff:** We started this discussion at the strategic level and we told you about what climate change is and how it relates to security, what the president is looking at, what is happening at the Department of Defense. I'd like Marcus King, John O. Rankin associate professor of international affairs at George Washington University and the director of the Elliot School Master of Arts in International Programs, to drive down more into the tactical or operational level.

**Marcus King:** Within the study of climate change, we generally look at mitigation, which is deploying energy efficiency and other tools to achieve greenhouse gas reductions. We look at adaptation, which is the ability of countries to be resilient to the effects of climate change. Then moving out a little further, there is consequence management.

My work concerns what happens when countries are not able to adapt. These tend to be countries that are fragile states to begin with. Two examples that I've looked at are Nigeria and Egypt. These countries are undergoing rapid population expansion. There are areas in these countries where the ability of the government has been hindered, where they are not able to provide basic municipal services. There are problems throughout these countries of governance. These are some of the dynamics that I've seen come together as threat multipliers, exacerbating existing problems.

What does that mean for U.S. national security? It changes some of the roles and missions of the military. For example, there could be increased demand for humanitarian operations on the one side but also on the conflict side, there can be real trouble for our allies. In these countries that are already fragile, where the governments have become illegitimate, it is possible that there's more adherence to extremist ideologies and insurgencies.

Climate change will mean temperature rise and sea-level rise. But there's also water scarcity — and water scarcity is more visceral. It's something that people can understand and see. Sea-level rise is very important but it's slow onset. Temperature rise is slow onset as well. But today, we can already see water scarcity impacting people both here in the United States and in fragile states in ways that are causing unfortunate new missions and problems for the U.S. military and national security globally.

**Leo Goff:** Egypt really has a two-pronged problem. Not only is it a desert, and the predictions are that it will get drier, but the sea could flood the entire Nile River basin and the aquifer that supplies water for agriculture. Tell us about the food-energy-water nexus.

**Marcus King:** The Nile Delta agricultural area that is fertile is

very close to the river and thus at risk. We don't know where affected people will go. Also, something like 96 percent of the fresh water in Egypt comes from outside its borders. Countries like Sudan have threatened to build dams that would cut off some of the freshwater supply. Another issue there is explosive population growth. Without new technologies, perhaps desalinization, it's really hard to understand how the fragile government in Egypt is going to be able to provide their people these basic municipal services.

**Leo Goff:** What we can see in the Maldives is again the challenge of water. The Maldives is fairly dry, with the exception of monsoon season, but the biggest challenge, as with many other low-lying island nations, is the sea level. Thilmeeza Hussain is the founder of the Voice of Women of the Maldives. It is the only nongovernmental office in the Maldives addressing women and climate change. She has also served in government and as deputy ambassador to the United Nations. Thilmeeza, share with the group here how that's a visceral impact to you and your country and where do you see the government acting?

**Thilmeeza Hussain:** The Maldives is a group of 1,200 low-lying islands. It lies on the equator in the Indian Ocean. The average height is about three feet above the sea level and the highest point is about six feet above sea level. So, these islands constitute one of the flattest countries in the world, and climate change is not a distant threat for us. We are already experiencing the slow-onset impacts of climate change as many of you have talked about, like beach erosion. People living closest to the beach are losing their homes. Fish stocks have been affected, and fisheries is our second-biggest industry. First is tourism, and coral bleaching caused by ocean acidification affects the tourism industry. Then we have freshwater contamination problems due to saltwater intrusion. Finally, the monsoons are

not coming in on time and when they do come in, either they are very prolonged or they are really shortened. For us, climate change already has huge economic implications.

We constantly need to have the military and the National Disaster Management Center on alert during high tidal swells, because the tides are coming in hours earlier than expected, they stay for a prolonged period, and they are about six inches higher. That is causing a lot of damage to property. People are losing their homes. At the same time, people can't go fishing, their freshwater supplies are affected. We are having a lot of security implications because of climate change.

According to James Hansen of Columbia University, sea-level rise is going to be about 10 feet by the end of the century. The IPCC study says it's going to be about three feet by the end of the century. Even three feet means countries like the Maldives are going to disappear. We will no longer exist.

Far before the end of the century, these islands are going to become inhabitable. Urgent and bold action, mitigation action, adaptation action, are all necessary. But at the same time we have to start talking about climate refugees, environmental refugees.

These terms do not have legal definitions under UN conventions or any international recognized system. But the total is expected to be about 150 million to 200 million people by 2050. Today, already, the total of refugees fleeing Syria, partly for environmental reasons, is six million people.

**Leo Goff:** You talked about the average height of the Maldives, but from my understanding, there are certain islands that are at sea level or only one or two feet above. So, is the government already making plans to move the people off those islands or are they on their own?

**Thilmeeza Hussain:** They are not making plans to move people yet in

the Maldives. This is a country where you don't have homeowners insurance, so people who lose their homes receive no money to help them relocate. There are a lot of internally displaced people within islands, within atolls, but there is no mechanism in place to address these issues. Loss and damage is something that is in the UNFCCC process that would hopefully address the issue in the future but nationally and internationally, currently there is no means to address internally displaced people.

**Leo Goff:** So, resilience is a challenge especially in the Maldives. So it is in the United States. I want to address a follow-on question to both Alice and Maureen to talk about how the federal government and the Department of Defense in particular are looking at resilience at key areas specifically, such as Hampton Roads, Virginia. Many people know that the Navy has a big base. There are actually 29 other bases in and around the Hampton Roads area. One that is probably most vulnerable is Langley Air Force Base, which is at sea level.

**Alice Hill:** Hampton Roads is home to not only about 30 military installations but also a large civilian population. And Hampton Roads, like much of the East Coast, is suffering from sea-level rise. Over 80 percent of the civilian population for these bases are housed off base in neighborhoods that now have routine tidal flooding that severely impacts the ability to get around. The community wisely has come together under the auspices of Old Dominion University and has invited DoD and others to come together to reach a regional plan. This is a model for what we hope will happen in the rest of the United States.

The question for all of us is, How are we going to afford this unless we start looking at our infrastructure, in particular that which is designed to last 50 or 100 years, and give our best estimate based on the climate science as to how high we need to build or how large do our drain-

age systems need to be to handle the amount of water that fell in the Carolinas?

If you're going to have extreme precipitation events, and we have them here on the East Coast, where in five days enough rain fell in South Carolina to cover the state 10 inches deep — where is that water going to go? As we are making those choices to rebuild or build better, we need to take into consideration the impacts of climate change. That is what we work on in resilience.

Infrastructure is a key place for the United States to start at home as well as overseas, and that's why we insist if we're going to spend federal money on projects, we're going to make sure they are resilient to climate change.

**Maureen Sullivan:** We are in the process of doing three pilots, one of which is the one in the Hampton Roads area with Old Dominion University, the second is in the state of Michigan with the Michigan National Guard and the Michigan State Police, and the third one is in Idaho at Mountain Home Air Force Base.

For each of these pilots, we are asking them to come up with a replicable process of how they would work with the community on climate change adaptation and especially climate change resilience. In Hampton Roads, there are 17 different governments to deal with. In Idaho, the base is running out of water. Michigan is looking at a whole range of issues, from flooding to drought to community resilience and communication. We are hoping that we can develop tools our bases can use for these difficult conversations with the communities that surround them, so that they can collectively work toward better resilience, learn from each other, and think strategically.

**Leo Goff:** I want to take a look at Syria. Marcus, if I could ask you to lay out the climate issues that produced thousands of internally displaced persons.

**Marcus King:** Syria and Iraq experienced the worst drought in instrumental record from 2007 to 2010. You can say droughts are cyclical, but droughts are becoming more frequent and intense. And so, what happened particularly in Syria, which had seemed to be relatively stable compared to some of the other countries that were disrupted by the Arab Spring, was that pastoralists' and farmers' crops were severely affected. These farmers then moved to urban centers largely in the north of the country, where they settled on the periphery. They were not able to have access to normal municipal services. Many of these people were young, and with nothing better to do some of them then became radicalized. And what we found was that this provided motivation for people to join the Syrian army, and also some of the groups in rebellion and some of the extremist groups. So, there were these underlying environmental drivers that led to the secondary causes of migration, urbanization, and radicalization.

**Leo Goff:** And so, Frank, how does governance address this issue of climate change as a threat multiplier?

**Francesco Femia:** We oftentimes hear that governments — for example al-Bashir in Sudan and Mugabe in Zimbabwe — have blamed or at least excused their actions based on natural resource issues or stresses and sometimes even climate change.

It's important to look at what was happening in the region from a governance perspective and how that interacted with climate stresses to drive what was a massive displacement of people from 2007 to 2011. My colleagues and I were looking at a NOAA study in 2011 by Matt Herling and his colleagues and it showed precipitation decline from 1971 to 2010 as compared to the period from 1900 to 1971. And we noticed that not only was the Middle East and North Africa experiencing some of the most significant precipitation decline in the winter when

the region gets most of its water, but that Syria and parts of northern Iraq had experienced some of the worst declines. The NOAA study strongly connected that precipitation decline to climate change.

Now, what was the Assad regime doing though in the face of that? And I would argue that the government was aware of these changes. So, for example, the Assad regime was priding itself on being food secure, they produce their own wheat, unlike most of the other Middle Eastern or North African countries that experienced the Arab Spring. But wheat farming is very water intensive. Syria was also producing a lot of cotton, a cash crop. That's very water intensive. The Assad regime was encouraging flood irrigation, where you waste about 60 percent of the water. That was a problem. Then you had overgrazing on top of that. Then you had population growth on top of that. All of these came together during that moment to displace about two million people.

Marcus mentioned that a lot of people considered Syria to be stable relative to other countries in the region, and that was the case. Now, why did we miss that? A lot of the tools we use to predict these things — for example, fragile-states indices — really weren't taking into account the environmental stresses that were driving instability within Syria. We weren't looking at the fact that there was such extreme water stress during that time period. At the same time, the Assad regime was awarding well-drilling contacts along sectarian and ethnic lines.

It is important in talking about how climate change increases the likelihood of conflict or instability that we don't absolve governments of responsibility. What happens in a climate change world with additional resource stress is we have an increased likelihood of state failure and an increased likelihood of regimes justifying authoritarian practices or non-state actors like

terrorist groups justifying certain practices.

**Leo Goff:** Thilmeeza, you are working on climate equity. Can you elaborate on the need for good governance and how places like the Maldives view governance and climate equity?

**Thilmeeza Hussain:** Good governance is a very contentious issue in the UNFCCC negotiations. I can speak about it very openly and frankly now because I'm not currently in the government. It is a contentious issue within developing countries. Many developing countries have questionable governments. And why is it such an important issue? Because we're talking about billions of dollars in adaptation money. Where is this money going to go and how is it going to be used? Good governance is critical.

We can relate that to what happened in the Maldives. We had the first democratic election in 2008 when President Nasheed was elected into office. Three years later he was overthrown by a coup d'état. Until then, we had very progressive policies on climate change, we were on target to become carbon-neutral by 2020. Since 2012, however, the country has been very unstable. There is a lot of political turmoil. And now special interest groups are looking for oil in the country, which is a complete U-turn from the policies we had during 2008 to 2012, when we had a democracy.

**Leo Goff:** And now I'd like to take questions from the audience.

**Doug Keare:** I'm going to start my remarks by apologizing for two things. One is that I'm probably going to take more time than I should. And the second is that this is not exactly a question.

The Conference of the Parties in Paris is coming right up. As I look at it, Paris is much more hopeful than we would have thought five years ago or even two years ago, and the task between now and then is to make it as hopeful as it can possibly be.

And including this dialogue, which ought to convince a lot of people about the fact that we have a big problem looming, we should maximize the Pope's impact, we should rally as many industrial leaders who have seen the problem and are at least cautiously willing to do something about it, and we should link strongly to the water and drought issue. Once there is agreement in Paris, however good or bad, we should ensure that the countries commit real funding.

We should praise China for its involvement and its role and, in my view as an economist amongst lawyers, for its willingness to use markets not only to deal with this but with other environmental problems. It is interesting that a formerly communist country is using markets whereas we won't, even though we've had some success with them in the past.

I want to conclude with this thought: there ought to be a sound monitoring and evaluation program coming out of Paris so that we keep track of progress year by year and across the board, and secondly that we should have a program for follow-up steps coming out of Paris to seek opportunities to strengthen what still won't deal with half the problem.

**Maureen Sullivan:** The French Ministry of Defense actually hosted 189 countries' ministries of defense to talk about climate and what they can do. The ministries of defense are coming together on a fairly large scale to talk about these issues.

**Francesco Femia:** The UNFCCC process is very important but I think what also helps is forums like these. Another example is the NATO Parliamentary Assembly, which a lot of people have never heard about but it demonstrated that climate change is a very important thing. We need to look at things like the Halifax International Security Forum, where a former secretary of defense spoke about climate change. It is time for us to take this issue out of its envi-

ronmental box, and talk about it in a number of forums, including those forums that are focused on more traditional security issues.

**Leo Goff:** I would also add that, as Alice pointed out, there is an economic side to this. We have focused on security. There is just as powerful an economic argument, how we are going to suffer the loss of billions of dollars of infrastructure if we don't take some action soon. So, those two things together should cause both sides of the aisle to recognize that, hey, we need to do something about this.

**Betsy DeLaney:** With regard to the weather patterns in Syria, had those weather patterns been what they had historically been with normal precipitation, would we have the situation in Syria that we have now, even given the bad governance and all of those issues?

**Marcus King:** I wouldn't go so far as to say that the change in weather determined the outcome. Climate itself is not a causal factor, it's a contributing factor, going back to this idea of a threat multiplier, exacerbating existing political cleavages, poor governance, and population migration.

**Francesco Femia:** I agree with Marcus. We do think that climate change could have made the conditions that led to conflict worse, which increases the likelihood of conflict, but that's very hard to determine.

What NOAA saw in 2011 in terms of precipitation decline in the Middle East and North Africa was consistent with previous modeling. What that told us was that our models on precipitation in the Middle East and North Africa were very good. Worse, when we look at our models going out 10, 20, 30 years, we're looking at a much drier region. Now, it's very hard to predict what kinds of political, economic, and demographic changes we'll see over the next 30 years in the region, but when it comes to climate change and when it comes to precipitation, we

have some good predictive tools in place. We need to take that information and try to build a more resilient region in the future.

**William Bennett:** I'm with the Federal Energy Regulatory Commission. I want to thank you as thought leaders for sharing your reflections about intersection of climate change and national security issues.

As you all know, there's been a lot of development in the United States over natural gas resources and oil resources, and there are large gas fields off the coast of Egypt and Israel. What impact do you think development of energy resources in the United States or in the Mediterranean region will have on national security and global security issues?

**Leo Goff:** It's a two-pronged question. First, from a climate mitigation point of view, natural gas is better than many of the other sources of energy that we have: dirty coal, heavy tar sands, et cetera. The more natural gas that we use to solve our energy problems the better, but it still puts a lot of carbon in the atmosphere.

**Bill Butler:** I am a retired professor at Georgetown Law School. Why is the Republican leadership in denial on these issues and making it a partisan issue and what can we do about that? It would seem to me that the issues you've been discussing are affecting everybody and solutions should bring people together rather than separate them.

**Francesco Femia:** Let me start by saying this is not a partisan issue within the security community. Concern about climate change and security spans administrations. We saw the Bush administration in 2003 put out a report that showed strong concern about the potential impacts of abrupt climate change in the future. We saw intelligence assessments in 2007 showing a concern for climate change. Our national security community has been quite concerned about this for a while and that's independent of the political nature of the administration.

We recently saw 10 Republicans sign on to a House resolution that calls climate change a very serious issue, a national security issue, and calls on the Republican Party to do something about it. We've seen some of the Republican candidates talk about this issue, Lindsey Graham for example. Now, we're in a primary season. I fundamentally believe that come to the general elections, climate change is going to be an issue, an accepted issue by both candidates, and we're going to be talking about solutions.

Also, we're seeing leadership from apolitical places. We've seen a former head of the Pacific Command, Admiral Locklear, call climate change one of the biggest long-term security risks in the Asia-Pacific region. The Republican Party is not where we'd want them to be but we've seen an evolution.

**Leo Goff:** If we want to lead the world, it's time for us to get out in front again and do something about it and not follow China or India or anybody else. There is an economic argument that it costs a lot but, by the same token climate mitigation and adaptation can be an economic impetus if we approach it from the right point of view and lead rather than follow.

**Thilmeeza Hussain:** 79 percent of the American public now believes in the science of climate change, so it would be very interesting going into the presidential elections to see what kind of a role climate change is going to play both in the Democratic Party debates and the Republican Party debates. In the Democratic Party debate I watched, climate change was a big talking point but in the Republican debate it wasn't so much.

**Leo Goff:** And I'll just add to that, it is certainly a younger person's issue because the younger people are going to live through it more than the rest of us. If that resonates as an issue among young people, we will eventually see action. **TEF**