Press Conference

with

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DR. LUBCHENCO: Thank you very much, Michael.

Why don't we go down the row before -- I just have some brief opening remarks, I'll make those and then open it up for questions. But before I do that, I'd like to begin with Dan and ask each of the people on our delegation who are here today to introduce themselves. Dan?

MR. REIFSNYDER: I'm Dan Reifsnyder. I'm the Deputy Assistant Secretary of State for Environment and Sustainable Development.

MS. BLAIR: I'm Maria Blair. I'm the Deputy Associate Director for Climate Change Adaptation in the White House Council on Environmental Quality.

MR. HAYES: I'm Jack Hayes. I'm the Assistant Administrator for Weather Services and Director of the National Weather Service within NOAA.

MR. KARL: I'm Tom Karl. I'm Director of NOAA's National Climatic Data Center, and helping to coordinate climate services across NOAA.

DR. LUBCHENCO: Many of you know NOAA and are quite familiar with the range of things that NOAA does, but for those of you who may not, the NOAA that has been referred to is the National Oceanic and Atmospheric Administration. As Administrator of NOAA, as one of the scientists on President Obama's team, and as head of the U.S. delegation it's a great pleasure for me to be here at this World Climate Conference III meeting with a very strong scientific presence, a strong presence from eight different federal agencies, and we are here to participate actively, both in the high level segment that is going on today and continuing tomorrow but also in the expert sessions earlier this week.

I'm very excited with this conference. I believe that today will be remembered as the day that climate services were officially born.

Just as we depend on all sorts of weather services, soon -- if we are successful in our efforts -- we can expect a range of science-based climate predictions and services.

For example, imagine farmers being able to determine what to plant and where based on drought forecasts three to five years out.

Imagine coastal communities able to plan for sea-level rise and storm intensity.

Imagine coastal planners or water managers able to ensure the availability of water for drinking, energy production, agriculture, and many other uses.

Or imagine public health officials being ready for or even being able to avoid outbreaks of malaria based on longer term precipitation forecasts.

Climate services such as these are beginning to be possible, and with continued attention to what science can provide and what users need, this global framework for climate services has immense capacity to be useful to society.

Climate services are useful and crucial to our food security, to our national security, to economic opportunities, to our infrastructure -- from roads and bridges to airports and public transportation, to our economies, and to our individual quality of life.

The United States is very pleased and satisfied with the Ministerial Declaration that has emerged from this conference and was approved this morning. It is short, it is powerful. It does all that we hoped for and I believe all that we need.

Importantly, the Declaration unites all countries in recognizing the need for climate services. As we head into Copenhagen we are heartened by the spirit of cooperation and the commitment to meet our shared challenge.

Let me add that it has been a deep honor to be part of this delegation on behalf of President Obama, and I think I speak for the entire U.S. delegation in being pleased to be here representing our science and our nation.

In just over six months President Obama has dramatically shifted U.S. policy on climate change. The President has emphasized that he believes good government depends on good science and that the scientific evidence of climate change is compelling.

President Obama is committed to reducing greenhouse gas pollution; creating green, clean energy jobs; and adapting to climate change that is already underway.

It's been a special privilege to be here and to communicate these messages to the conference, but more importantly to interact directly with many of the other participants in this meeting: individuals who come from so many different perspectives, so many different parts of the world, but who share a common interest in our future.

We have made a common commitment to bring the power of science to bear on knowledge that is needed for decision-making, recognizing that climate change is underway, that we need knowledge; we need information to reduce emissions as well as to adapt. So this framework that we are creating provides a mechanism for delivering scientific information,

knowledge, decision support tools, communication tools, and data to a variety of users to inform their decisions about emissions reductions and about adaptation.

So I suppose I should say Happy Birthday to our new baby. It's been gestating for a long time. Many people who were at this conference in the earlier segments have worked long and hard on the concept of climate services. It's now becoming a reality and we look forward to helping to nurture this young child and to bring it into a strong and helpful existence.

So with those brief remarks I will stop and open it up for questions.

When you pose a question please identify yourself and I will feel free to call on my talented panel to my right here as appropriate, given their different expertise either as scientists or as representatives of the administration, both in the Council on Environmental Quality and in the State Department.

QUESTION: Hi. Olive Hefernan from Nature.

I just wanted to ask you if you could speak to the U.S. plans to establish a national climate service and whether you know at this stage whether that would be headed up through one specific agency or whether it would be climate services delivered through a number of institutes and agencies such as NOAA, NASA, GOOS, and NCAR, GFDL.

DR. LUBCHENCO: It's clear that the climate services that are needed within the United States must involve participation by many different agencies. NOAA has been the lead agency in providing a suite of climate services that we already use. There is much greater need and potential beyond what NOAA is currently doing. We at NOAA intend to be active participants in that, but to do so in partnership with other agencies.

The Office of Science and Technology Policy in the White House is organizing, maybe that's not the right word, is facilitating an interagency discussion about climate services in the U.S. We are moving forward in a cooperative fashion to design what would be most useful, understanding that many agencies have some data and information to contribute. Most agencies are users of information and therefore can benefit from a national climate service or a national climate service enterprise.

In short, the exact nature of this entity is yet to be defined. We are enthusiastic about participating actively and look forward to having it be useful.

Tom, do you want to add anything to that?

MR. KARL: I think that sums it up very nicely.

QUESTION: Eliane Engeler with the AP.

I'm actually wondering how you intend to make that the framework for climate services work. How do you make sure it really matters for the local farmers, coastal managers, and really ensure it doesn't become a heavy bureaucratic machine.

DR. LUBCHENCO: I presume you're speaking at the global scale. Tom, do you want to address that?

MR. KARL: I think this is an important challenge. One of the things that we believe will prevent this is that the services that have been provided to date, which are fledgling, have been driven largely by the sciences. We're now at a point where we believe science is capable of delivering information where decisions can be made on both a near term and a long term basis. We would expect that the science basis will continue, and I think if you see the verbiage in terms of the statement from this conference, they're heavily orientated to ensure that there's a connection to a strong science base, so we think that will be the glue that will prevent, as you say, a bureaucratic process.

DR. LUBCHENCO: Let me add to that, that one of the important aspects of the expert segments for this meeting has been bringing together providers of information as well as users of information to begin to design the kinds of systems and interfaces that will be maximally effective. That also will be part of the task of the task force that has been agreed upon as part of the Declaration. It's our hope that this interface or this intersection between users, needs, and what science can deliver will be strengthened throughout the process.

Tom, would you say something about NIDIS as an example, please?

MR. KARL: A good example as to how we've tried to ensure that there's a linkage between the science and the user's needs is to actually ensure that there's a two-way

communication between what the users want in terms of being able to make decisions. We have something called a National Integrated Drought Information System in the United States that really was born out of requirements and requests from Western Governors. From those requests it was driven home to us that we had the tools, but we had to make sure that those tools provided the information that was needed to make real decisions affecting communities and states with water resource issues.

Perhaps as an example of how the global framework could better operate, we've now used that concept in terms of our drought monitoring capability, we have expanded it across the borders into Canada and Mexico, and we have a monthly North American drought monitoring activity going on right now. It's not nearly as developed as our national system, but it's an example of how these things can evolve and why a global framework is so important to coordinate this.

DR. LUBCHENCO: I also want to ask Jack Hayes who is the head of our National Weather Service for NOAA to reflect on what lessons have been learned from providing weather services that will help inform the delivery of climate services.

Jack, if you would, please?

MR. HAYES: I think we've been quite successful with severe weather prediction and information provided to emergency managers, and we provide this service to protect life and property.

It requires not just putting out a weather forecast, but really getting inside the mind of the emergency manager. What does the community need, how do we communicate so that the threat is understood, how soon do decision makers need to move to have the information be of value to them. We've extended that to a seasonal prediction which are part of our climate services products, and these predictions are going to communities that have a flood risk - for example, understanding when the community needs to make decisions to start stacking sandbags and what prompts that decision are important considerations we take when providing the service. In many cases it involves providing probabilistic or uncertainty information so they can evaluate the risk to the community.

I think Tom and I have ideas about how to take that service and product time horizon for the decision further into the future, and that would be part of the framework.

QUESTION: Steven Lahey, IPS.

You spoke earlier about the need for more information in order to do emissions reductions. Could you elaborate a bit on that?

DR. LUBCHENCO: Sure. I believe that climate services will provide ongoing delivery mechanisms to inform continued emissions reductions as well as adaptation. And you should not interpret that as saying we have to have climate services in place before we can begin emissions reductions. That's absolutely not what I am saying.

My point is simply that as we enter into agreements to reduce emissions there will be an ongoing need for data and information about how well are we doing, how is it playing out differently, et cetera.

Thank you for asking that.

QUESTION: Kuwait New Agency. I have two questions.

My first question is about the commitment of President Obama to the developing world, and especially Africa. Could you elaborate a little bit? Sums of money, projects, what does he think in that direction?

My second question is to the panel also. I mean you witnessed Katrina, a disaster that struck you but affected the emotions of the whole world. So in your advances, could you now stop a Katrina or predict and be able to handle a situation like Katrina again?

DR. LUBCHENCO: Thank you for both of those questions.

I'm going to make a brief remark and then invite Dan and Maria to comment and provide additional information as appropriate.

It's very clear to me that the president is deeply committed to developing countries of the world. He clearly has a strong interest in Africa, and although all of our policies have yet to be completely defined and refined, it's clear to me that he's paying attention.

Maria?

MS. BLAIR: I'd just echo that and say that climate change is clearly a priority for this administration, and that includes adaptation, which has not gotten I think the amount of attention that it needs up until this point. That is something we are very actively working on. We are looking at both how we prepare within the United States to prevent another Katrina from happening again, as well as how we help learn from and support international adaptation needs including and especially the needs of the most vulnerable in the developing world.

MR. REIFSNYDER: I agree. I would just maybe make a couple of points about that.

One is, I think there are a number of programs we have that are ongoing that are very important because capacity building is one of the most important aspects of this for developing countries. We have programs. I'm not as well equipped, perhaps, as Tom or Jack is to talk about FUSNET and RANET, programs that assist developing countries.

But also there was a decision taken recently that we're now providing LANSAT data free of charge over the internet, which I think is one of the most significant things. I was talking to someone today, those used to be $400 to $500 per image. They're now free. It's gone from something like 18,000 images that were downloaded by people to over a million since the beginning of the year. So it's quite an important development, I think, in terms of our continuing effort to make data freely available for adaptation.

DR. LUBCHENCO: Jack, would you care to comment on what we're doing within the United States to be better prepared for weather-related disasters such as hurricanes?

MR. HAYES: I actually think we did a pretty good job with the Hurricane Katrina forecast. We have a good partnership with the Federal Emergency Management Administration and we engaged them early. In the wake of Katrina we went back and looked at what worked and what didn't work, and we found a few things that could have improved our service and we have taken the necessary action.

For example, we have at our Hurricane Center a FEMA hurricane liaison, and as a hurricane or a tropical storm approaches the United States, this liaison works closely with our forecast team to ensure that there's accurate and timely communication to communities that might be affected as early in the decision cycle as possible.

If I might, I had a comment on assistance we provide to Africa. We support a WMO capacity building program, one that I was personally involved with; it is called Severe Weather Forecast Demonstration Project. It kicked off in November of 2006. It was anchored in Pretoria, South Africa. There were initially five developing countries in Southern Africa that benefited from this. Information produced in Washington, D.C. at our national centers, and in the United Kingdom at the European Center for Mid-Range Weather Forecasts, is communicated to Pretoria where forecasters from South Africause the information with their own regional modelto build products using satellite data and probabilistic information and store them at a web site. The delivery of these products is accomplished by developing countries by downloading them using the internet.

Initially, the products included severe thunderstorms and high wind forecasts and warnings. Obviously there are other threats. They're in the process now of adding flash flood forecasts. As I see that framework, it would fit right into the global framework where we just extend their time horizon out to seasonal and longer.

The other thing I would add, a component of the program was not to produce this information externally and say use it; it was also to train forecasters in those developing countries so that they could take charge of the forecast information and use the best that we could provide with South Africa in those countries.

MR. KARL: Let me just add a few things.

One thing I wanted to mention in terms of some of the things we're doing to try to help the African region. It's very very important to ensure that you have a baseline of observations in terms of understanding climate variability and change. It all starts with the observations. There's been an enormous amount of data that has been collected that's on manuscript form. We've had a program for a number of years called the Climate Data Modernization Program. We've taken manuscript and other forms of data, and made it electronically accessible. That's the start of being able to assess what's happened in the past and build a prediction capability for the future.

With respect to the hurricane issue, there have been a number of things we've done, worked with other agencies for example. We have worked with the Army Corps of Engineers, where we've gone back and reanalyzed the central pressure in past hurricanes so we have a better understanding of the kind of intensity of hurricanes that might affect the Gulf

region in the future. We've analyzed data from satellites, and reanalyzed the past historical hurricane storm tracks and intensities. That kind of activity is critical because in our new procedures the U.S. government, the U.S. Army Corps of Engineers is now taking into account changes in sea level with respect to new infrastructure along the coast. That's the kind of thing that Dr. Lubchenco had mentioned. The services that are being delivered are across a number of agencies in the U.S. and it requires close cooperation.

QUESTION: Ander Clampna, Belgian On-Line. Mrs. Lubchenco, I have a short question. It is regarding the proposal of the Swiss Moritz Nuenberger, the Counselor to state. He proposed to establish a tax, a CO2 tax. Could you comment, please?

DR. LUBCHENCO: No. [Laughter].

QUESTION: Isn't it your job, or what is it?

DR. LUBCHENCO: The proposals such as that are considered within the United States and as part of a process that we have for evaluating the merits of ideas such as that.

I'm not in a position to officially comment on that, so I gracefully beg your apology, but it's just not possible.

Do either of you want to say anything? Dan?

MR. REIFSNYDER: I might just say because I was told the other day that we really should answer any question that's asked, so I would say that traditionally the United States has not been in favor of global taxes, but on the other hand I think that proposal is made in the spirit of trying to determine how it is that the world could begin to come up with funds to assist countries with adaptation needs. There have been a variety of proposals that have been made in the context of the, in the discussions leading up to Copenhagen in December, I think. Many options are on the table. I don't know that I could comment more than that at this point, other than to say there are many proposals and everything is being considered.

QUESTION: Ellen Wallace, GenevaLunch.Com. An on-line newspaper for the local region here.

One of the threads that has surfaced in the past two days with the experts that I've heard at several meetings is that half of the world's population lives in cities and we have very little information about climate change, climate

weather in cities. And all of these comments seem to end with a question mark of well, what do we do about it?

How much of a concern is that? How much has it been discussed in the U.S.? What is the U.S. doing about it? Can the U.S. be a leader in this area? Could you just comment on that area, please? Any of you.

DR. LUBCHENCO: Let me just remark that in addition to what you noted, that the vast majority of those cities are in coastal areas, so the challenges need to be informed not just with respect to a land-based consideration of climate changes, but one that's also informed by the changes that are happening in oceans.

Tom, Maria?

MR. KARL: Yes, and it is true that the urban areas are extremely important. I think part of the confusion of the lack of attention of urban areas has been the scientific community has tried very hard to try and look at a global signal. What was the global climate doing? And intentionally avoided what was going on in the cities because the local climate in the city can confound that signal.

That's not to imply that the scientific community has less value in what's going on in the cities. There's many observations in the city that deserve to be analyzed in and of their own right because they compound the changes. The report that we did in the U.S., one of the things we did do is examine a sector of what we call society which included the cities. Note, for example, the heat waves that occur are compounded in the cities. The night time temperatures that are so much of a threat to health often become very highly elevated during heat waves.

So clearly you're raising an important issue, and it's one in which I think the scientific community recognizes, and we recognize in NOAA, that's a critical component from the standpoint of how these changes and impacts affect the population.

DR. LUBCHENCO: The brochure that we have made available to you is the one to which Tom was referring, and this is a synthesis of a much larger document that is available on-line. The URL is in here. Society and cities are one of the areas that is treated only briefly in this short synopsis, but treated in more depth in the full report.

Maria?

MS. BLAIR: Just to elaborate a little bit. I think we think adaptation in cities is going to be a critical issue both for the United States as well as internationally. I think what you see in cities, other than the population dynamic that you talked about, is a combination of stresses that have been building for quite some time. Whether you're talking about water usage and management, sanitation, health, urban development, planning, the development of slums. There are a whole set of issues that are clustering together in urban areas, and you add climate change impacts on top of that. It is I think a critical issue that we have to focus on.

We are excited to and have begun to engage with a number of United States cities that have already done adaptation plans. New York City has an adaptation plan. Chicago has an adaptation plan. Seattle has an adaptation plan. The State of California and all of its cities have adaptation plans. So we're eager to learn from, the federal government is engaging with those cities, learning from their experiences as well as reaching out to some of the international cities that have done adaptation plans to understand what we can learn from them and how we can, as I said, support international adaptation going forward. Particularly in the developing world cities where this is going to be critical.

QUESTION: Good afternoon. John Zaracostas. I'm a freelance writer.

Madame Secretary, you mentioned a need for aggressive action, but this service's framework, the task force, doesn't meet for four months, and the end result doesn't get gaveled until May 2011. To the lay person that gives a signal of no sense of urgency out of this conference.

Secondly, I'd like your comments to the remarks by the Vice Premier of China who very clearly said they want common but differentiated treatment, and stress looking at Copenhagen should strictly follow the mandate of the Bali road map.

Any comments to that given your administration was not at Bali? Thanks.

DR. LUBCHENCO: The actions coming out of this conference I believe do reflect the urgency of addressing climate change and providing the knowledge to do so. Creating a new international framework needs to be done in consultation

with users around the world and designed in a way that will be maximally effective.

I believe that the timeframe that is laid out in the Declaration is in fact moving as rapidly as we possibly can, given the challenges of figuring out how to do something that has never been done before.

I would invite Dan to comment further on that, and also to address the second question.

MR. REIFSNYDER: One of the things in the discussions of the Declaration, I think there were those who wanted this to begin here; there were those wanted it to begin a little bit later. In particular I think a number of countries were anxious that governments be centrally involved in this process, which probably is a good idea because it's ultimately governments that are going to be responsible for implementing this effort.

So given the crowded schedule this fall, Copenhagen in December and so forth, I'm not sure that four months is too long a time. There's just an enormous amount of activity. I think all government delegations are feeling the strain right now. The pace between now and December is going to be really crushing for most people. So I don't think it's too long a time, and as Dr. Lubchenco says, I think it's important to prepare the ground carefully for this.

With regard to your question about China, they were reflecting a principle, the so-called Principle of Common But Differentiated Responsibilities, and Respective Capabilities, I might add. It's in the framework convention on climate change to which the United States is a party. We support all of the principles in the convention. So I think there was nothing new in that. It didn't come as -- It's something that is brought up frequently in the context of the negotiations and we support the convention and the principles contained therein.

QUESTION: [Inaudible]?

MR. REIFSNYDER: Right. We signed on to the whole package. Yes,

QUESTION: Ursula Klein, Suprema Television. We are a television chain doing a lot about the environment. Based in the USA, in Los Angeles.

We have interviewed a lot of scientists and have found that livestock is the major cause of global warming. Actually it's responsible for over 50 percent of greenhouse gas emissions. Because a lot of the Amazon rain forests are cut down to grow fodder for the livestock, it has a big influence on the climate as well.

I'm just wondering if President Obama and his administration and you all, if you couldn't play a leading role telling the world eat less meat, because we're just killing the planet doing -- Please, eat less meat. Could you tell this to the American people? And I'm sure that other countries will follow your lead.

DR. LUBCHENCO: That sounded like a statement to me. [Laughter].

Tom, do you want to comment?

MR. KARL: I think a correction is warranted. I don't think you meant to say that livestock are responsible for half the greenhouse emissions. Perhaps half of the methane emissions. If you look at the IPCC report you'll see the greenhouse emissions are in large part due to transportation and energy generation. Clearly, they play the major role. So, just to correct the record for that piece of information.

DR. LUBCHENCO: Which is not to undermine the importance of methane.

MR. KARL: Absolutely. Methane is an important greenhouse gas that has been added to the atmosphere because of human activities-- And methane is one of the greenhouse gases that we've had a very hard time trying to understand the sources and sinks. . It's one of those gases that have leveled off in recent years. And we're trying to understand exactly why that's happened. It's still a bit of a challenge.

QUESTION: It's not just the methane gas. It's the cutting down of the Amazon forest which creates a lot of CO2, plus all the transports, plus all the problems with ammonia. It's a lot more.

MR. REIFSNYDER: If I could just say, because it is interesting as you look at the emissions profiles of different countries, countries for which livestock is a huge issue in the climate equation. Two in particular I could just cite. One is Argentina in terms of beef production where I think emissions from livestock are a very large

factor in Argentina's emissions. Also in New Zealand with sheep production.

So it can be, depending on the country, a very large, have a very large impact for that country. That's right.

QUESTION: I think the U.S. as well. There's enormous meat packaging.

MR. PARMLEY: We're not having a dialogue.

QUESTION: Sorry.

QUESTION: I'm Gabriel Lasitomaya from Mexican News Agency.

In the road to Copenhagen Mr. Ban Ki-moon said this morning that leaders should listen to the scientific community in order to seal the deal. Do you think that leaders of the world are listening? What is your opinion on this?

DR. LUBCHENCO: It's clear that leaders of the world are now focused on climate change. The extent to which we can reduce emissions rapidly enough remains to be seen, and that's partly a question of political will.

QUESTION: Olive Hefernan, Nature.

I'm curious about the drive for applied research and services and to what extent that might actually detract from funding for Blue Skies research. Do you imagine that extra funding will be provided for this sort of research, or is that going to be an issue?

DR. LUBCHENCO: I personally believe that the basic applied paradigm is really outdated. That there are huge, there's a huge area where we can make fundamental advances in science that also have immediate relevance to societal needs. And this whole arena of climate change, climate adaptation, the human dimensions of climate change, the intersection between climate change and other factors -- loss of biological diversity, land use change, human health, et cetera -- is a rich area for significant new advances that are also helpful in informing society, helping them understand, helping us understand how the world works, how it's changing, what the likely consequences of different options might be.

So the role of science here is to inform our understanding and our thinking. And that's just not sort of variations on a theme which is sort of the way people think about applied,

very narrow issues. It's actually a rich arena for very significant advances in science that also have huge societal relevance.

QUESTION: I have a question about this conference as a model for bringing nations together. So do you think that these global issues like climate change, like health and H1N1 would bridge the gap in conflict regions and bring people together like Arabs and Israelis, like the U.S. and Cuba, and other regions of the world where you have really landmark conflicts?

My second point is about the fires of California. Why hasn't the United States until now been able to deal with the annual resurgence of these fires?

DR. LUBCHENCO: I think there's a long history of scientific collaborations helping to advance communication across countries that may be in disagreement about issues. This conference has indeed been a model for bringing scientists from around the world together to talk about issues that are of high importance to society, and folding those discussions into high level discussions among nations.

There are many fora in which to do those kinds of things. This is one good model. There are others, as well.

Dan?

MR. REIFSNYDER: I think that's absolutely right, and I think as people understand their common problems better, it gives me more hope that they will be able to set aside some of the particular issues and build together. Yes.

DR. LUBCHENCO: One thing that has set a new tone for the interaction between science and society has been the way in which our knowledge of climate sciences has developed. And through the IPCC has provided a synthesis of knowledge that is policy relevant, but not policy driven. In other words, the science is responsive to the interests of policymakers, but it's true to the science. That's an important nuance.

I think one of the other major contributions of the IPCC has been to create ways of communicating to policymakers and to lay people the relative scientific certainty of different kinds of knowledge, of knowledge about different issues.

It's important for society and policymakers to know how certain we are of different things, and one of the major

advances of the IPCC was to begin to talk about levels of certainty.

I think both of those dimensions are rich models for other areas of assessing scientific knowledge and making it available, useful and relevant to decision making.

Tom, do you want to talk, or Jack, about California and fires?

MR. HAYES: I might start off and then shift to Tom.

I flew over the Witch Fire, which was near San Diego in the fall of 2007. You really can't appreciate when you watch the news the magnitude and the scope of the area covered by these huge fires.

I think in studying what's going on in California, and it's going on in other parts of the United States, what I see happening is there are subtle changes taking place, and there are fuels, and many of them are climate related. To me when I look at what's going on it really points out the need for climate services. Because I can tell you as a weather service, we did very well alerting Southern California five to seven days before those fires started that they were going to have Santa Ana winds. We knew these winds were going to dry out the atmosphere and add to the threat of fires. So, if there's a lightning strike or an arsonist, it's a tinderbox waiting to explode. The 7-10 day advance alert we provide is not enough time to respond in a proactive way; we've got to push the alert envelope out into the future and focus on providing the specific climate information needed to act proactively.

MR. KARL: It is true , particularly in the Western part of the U.S. and the Southwestern part of the U.S., we're now seeing less precipitation than we've seen over the past century or more. We are seeing an increase in fires, and there are people who argue about the cause. That perhaps it is due to forest practices or whether its climate. But we know that when you have a rainy winter followed by a couple of dry summers, there's more fuel for the fires. So some natural events are clearly a part of this.

We also know that populations are expanding into areas that they've never been before.

So the combination of all these factors is one of the reasons why it makes it so difficult to resolve.

But I think it points to a good example of what we mean by climate services. That's the interaction between trying to understand the climate science. What are the climate factors that are driving potential changes? What are those human interactions that perhaps put us in harm's way? What are those practices, those forest practices that we have in place? And putting all that information together really is the heart of trying to provide a better coordinated climate service. That's one of the things that we hope this global framework and our approach in the U.S. will be able to address over the coming years and decades.

QUESTION: I'm Helmut Luvers. I represent EcoGlobe.Org. I have a question which is a question about your opinion about the following.

You see, over the past years we have had increased economic growth and continuing population growth. As a scientist you may agree with the fact that the world is finite and that the resources are being depleted at an ever-increasing rate. Wouldn't you think it is possible that resource depletion and the depletion of fossil fuels and potable water, et cetera, would hit humanity faster, more rapidly, sooner than the effects of climate change?

And please, before you answer, don't tell me that we could have immaterial growth, sustainable growth or whatever growth, because growth is dollars, it is represented in units of GDP and every unit of GDP represents material. I would claim, and I would like to have your opinion that, whether it wouldn't be necessary to beyond the discussions on climate change, to start discussing about the stoppage of economic growth, to become a little bit more frugal like Mr. Ban Ki-moon also suggested last year in the conference that he had here in Geneva, and also that we would finally start to attack this non-attack problem of population growth. Because every person that is born and that adds to the population will use more resources and increase depletion and increase the emissions of climate gases.

DR. LUBCHENCO: You've drawn attention to the importance of our taking a more holistic look at multiple changes happening on earth in addition to climate change. What this boils down to, in essence, is human well being. And human well being is strongly influenced by the intersection between a lot of different drivers of change.

I think that the Millennium Ecosystem Assessment, which is a parallel international scientific assessment of the state of knowledge about the suite of environmental changes including

climate, and human well-being, does a nice job of putting all of that into perspective.

The Millennium Ecosystem Assessment draws attention to the extent to which human well-being relates directly to the suite of ecosystem services that are provided by a variety of ecosystems, be they managed or unmanaged. And the Millennium Ecosystem Assessment clearly states that the trajectory that we are on is unsustainable, that fully 60 percent of the ecosystem services that we can quantify are being degraded or declining. But importantly, it also articulates that there are many things that can be done to live more sustainably on our planet, more in harmony with nature. And I would, whether you agree with it or not, I would suggest to you that the Millennium Ecosystem Assessment is a good reference for thinking about these more holistic perspectives that do more than just look at climate, but really understand the broader interactions between climate and other drivers.

Fortunately, the new intergovernmental panel on climate change is taking more of a holistic look at how climate is intersecting with other changes, and we do indeed really need those more holistic perspectives, understanding that climate interacts with health, with national security, with economic opportunity, with environmental changes above and beyond just climate.

QUESTION: Mr. Ban Ki-Moon announced this morning also a climate change summit in two weeks in New York. Do you know if President Obama will be there?

DR. LUBCHENCO: Do you happen to know?

MR. REIFSNYDER: My understanding is the president is planning to take part in that meeting. I don't know when and to what extent, but my understanding is he is planning to go.

QUESTION: A little technical question. Perhaps the panelists can help.

We've been hearing that the situation in the Arctic is deteriorating very fast, but the situation is somewhat different in Antarctica. Western Antarctica, the ice sheets are melting, but in other parts of Antarctica they're rebuilding. So what's your assessment of the negative in Antarctica vis-à-vis the Arctic? Thanks.

DR. LUBCHENCO: Tom?

MR. KARL: I think if you look at Antarctica and tried to do a mass balance overall, the suggestion would be a decrease in overall ice. But the uncertainty bars are wide enough that they could actually range to zero or maybe slight growth.

It's clear, climatologists have known for many years that the Antarctic in some ways is so isolated it kind of creates its own unique climate in the context of the fact that as the climate warms, it's so cold in Antarctica, as additional water vapor and moisture get into the atmosphere in those areas that were like deserts previously, they now begin to accumulate snowfall. So it's quite conceivable in some areas that you may actually have a period of growth of ice.

It's quite different in the Arctic where you don't have such an isolated land mass. So the warming in that area is more widespread.

DR. LUBCHENCO: I want to take this opportunity to thank our panelists for joining us. Thank all of you for coming, for your questions. We appreciate them very much. We stand adjourned.

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