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Folder Title:
Climate Change Other Agriculture/Sinks/Land Uses [3]

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Senators Ag/Climate Change Meeting

1. March 22nd. 4:00 - 5:30pm. S224 U.S. Capitol. Table in middle of room to sit around with seats around perimeter.

2. Tentative Agenda

- Lugar opens meeting, probably followed by statements/comments by all 5 senators.
- Administration statement/s
- Questions from Ag sector

3. Subjects

- Economic Impact of Protocol
- Update on developing countries
- Opportunities for Ag Sector
 - Need to work cooperatively with sector as U.S. negotiates role of sinks
 - 3.4 Workshop
 - Credit System - Credit for Early Action/International trading
 - Budget - Carbon Sequestration

3/22/99 Meeting Invitation List

Dan Glickman - U.S. Department of Agriculture

Frank Loy - Under Secretary of State for Global Affairs

Stuart Eizenstat - Under Secretary of State for Economic, Business,
and Agricultural Affairs

Chuck Schroeder - National Cattlemen's Beef Association

Dean Kleckner - American Farm Bureau Federation

John Gordley - American Soybean Association

Ernie Micek - Cargill

H.D. Cleberg - Farmland Industries, Inc.

Gary D. Myers - Fertilizer Institute

Robert B. Shapiro - Monsanto Company

Christine Wehrman - National Corn Growers Association

Jack Hamilton - National Cotton Council

Al Tank - National Pork Producers Council

Ellen Terpstra - USA Rice Federation

Wayne A. Boutwell - Southern States Cooperatives

Tom Stenzel - United Fresh Fruits and Vegetables

Jim Johnson - American Sugar Alliance

Gary Goldberg - American Corn Growers Association

Jack Eberspacher - National Association of Wheat Growers

United States Senate

WASHINGTON, DC 20510

March 9, 1999

Stuart Eizenstat
Under Secretary of State for Economic, Business
and Agricultural Affairs
U.S. Department of State
Washington, D.C. 20520

Dear Ambassador Eizenstat:

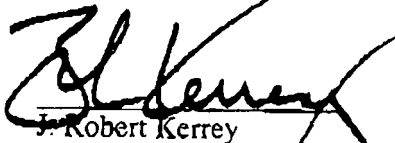
We would like to invite you to participate in a meeting on climate change that we are hosting with members of the agricultural sector. As the lead negotiator for the United States at the two most recent meetings of the United Nations Framework Convention on Climate Change (UNFCCC), in Kyoto, Japan in December, 1997, and in Buenos Aires, Argentina in November, 1998, your participation at this meeting would be particularly helpful.

We have been observing U.S. negotiations under the auspices of the UNFCCC, particularly from the perspective of agriculture. We have heard from members of the agriculture community regarding the potential impacts domestic and international climate change scenarios and mitigation would have on American agriculture.

This meeting will offer an opportunity for us to hear the concerns of the agriculture sector. In addition, it will allow us to open a dialogue on the appropriate role of agriculture in addressing the challenges of climate change. It is our intention to approach this subject from a broad perspective, in order that the ultimate impact of any future activities on all facets of the sector are considered, understood, and encompassed, so that benefits are captured and negative impacts on the sector are minimized.

We are also inviting Frank Loy, Under Secretary of State for Global Affairs, and Dan Glickman, Secretary of Agriculture. The meeting will be held on March 22, 1999 in the U.S. Capitol, Room S224, from 4:00-5:30 p.m. We look forward to working with you on this important issue.

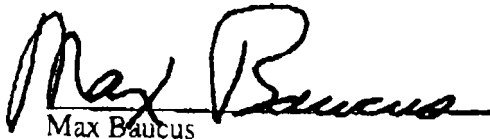
Sincerely,



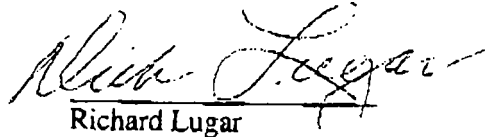
J. Robert Kerrey



Tom Harkin



Max Baucus



Richard Lugar



Pat Roberts

United States Senate

WASHINGTON, DC 20510

March 9, 1999

Chuck Schroeder
Chief Executive Officer
National Cattlemen's Beef Association
444 N. Michigan Avenue
Chicago, IL 60611

Dear Mr. Schroeder:

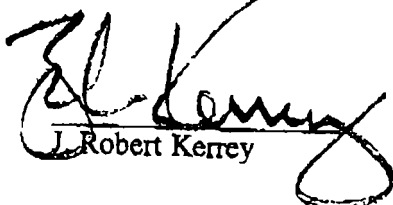
We would like to invite you to participate in a meeting on climate change that we are hosting with members of the agricultural sector and relevant leaders within the federal government.

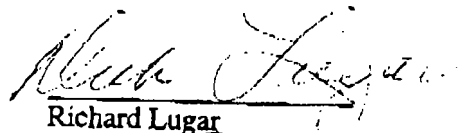
We have been observing U.S. negotiations under the auspices of the United Nations Framework Convention on Climate Change (UNFCCC), particularly from the perspective of agriculture. We have heard from your organization and others regarding the potential impacts domestic and international climate change scenarios and mitigation would have on American agriculture.

This meeting will offer an opportunity for you to share your concerns with the administration. In addition, it will allow us to open a dialogue on the appropriate role of agriculture in addressing the challenges of climate change. It is our intention to approach this subject from a broad perspective, in order that the ultimate impacts of any future activities on all facets of the sector are considered, understood, and encompassed, so that benefits are captured and negative impacts on the sector are minimized.

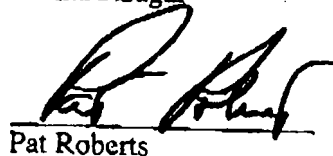
We are also inviting Dan Glickman, Secretary of Agriculture; Stuart Eizenstat, Under Secretary of State for Economic, Business, and Agricultural Affairs; and Frank Loy, Under Secretary of State for Global Affairs. The meeting will be held on March 22, 1999 in the U.S. Capitol, Room S224, from 4:00-5:30 p.m. We look forward to your participation at the meeting, and to working with you on this important issue.

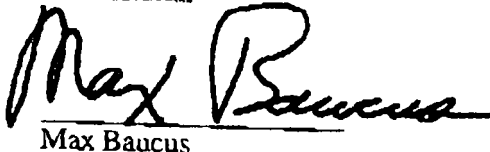
Sincerely,


J. Robert Kerrey


Richard Lugar


Tom Harkin


Pat Roberts


Max Baucus

Outline of Statements for Glickman, Eizenstat and Loy March 22 Senate Ag Meeting

I. Glickman

- Overview of Climate Change and the Ag sector
 - Climate change does impact the agriculture sector. Not talking about the Kyoto Protocol
 - This is not your typical environmental issue -- where it often feels like its farmers v. the environment
 - Farmers can be part of the solution; in fact, there are significant opportunities
- Budget
 - Big increase in USDA budget request - carbon cycle initiative, carbon inventory, research and demonstration projects
 - Bioenergy Initiative - USDA/DOE program to partner with farmers and industry to establish an integrated bioenergy (biomass, biofuels) industry
- Economic Analysis
 - Timing of USDA analysis
 - Broad discussion of preliminary results; CEA results; acknowledge dire predictions being made about impact of Protocol on ag sector

II. Eizenstat

- Historical framework - Kyoto Protocol
 - Flexibility Mechanisms
 - Developing Countries

-- Sinks - U.S. insistence on inclusion of sinks

- Success of Buenos Aires

-- Focus on Sinks; Opportunities for agriculture sector

III. Loy

- International Strategy - What are we going to do over next several years (Flex mechanisms, Developing Countries, Sinks)
- Outline of Process on Sinks
 - 3.4 Workshop Goals, Purpose, Ag Sector Outreach
- Pledge to continue to work with this important sector

Agenda for Briefing with Secretary Glickman

- Macro overview of current status climate change
- Political context of issue on the Hill
- Political context for the March 22 meeting
- Our goals for the meeting: advocacy of opportunities for farmers; change the course and structure of the debate on this issue with the farm sector
- Agenda for the Meeting
 1. Bob Kerrey gives opening statement and asks other senators if they have anything to add
 2. Kerrey will then turn to the Administration for a few minutes of statements
 3. Kerrey will then open it up for questions
- Primary issues:
 1. Economics
 2. Budget – bioenergy initiative/sequestration
 3. Administration Dialogue w/ ag sector (how it fits into broader industry consults)

Outline of Statements for Glickman, Eizenstat and Loy March 22 Senate Ag Meeting

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SENATORS HOSTING 3/22 MEETING WITH AGRICULTURE SECTOR

The idea for this meeting grew out of discussions with Senator Bob Kerrey after the Meeting of the Parties in Buenos Aires last fall. The purpose of the meeting is to further develop the dialogue between the Administration and the Farm Sector on the issue of climate change and to refocus the debate on the potential opportunities for this sector. The meeting is happening now simply because of scheduling delays. The meeting is being hosted by 5 Agriculture Committee Senators who believe that climate change is a problem we should be addressing.

1. Chairman Richard Lugar (R-IN)

- Lugar has been progressive on the issue of climate change.
- In the January issue of *Foreign Relations*, Lugar (with James Woolsey, former Director of CIA) published an article on the potential for biomass to replace oil as the world's main source of energy. The article asserts that countries would realize substantial national security, economic and environmental benefits from biomass.
- In the article, Lugar calls for increase investments in renewable energy research, tax credits, and a coordinated government-industry biofuels partnership.
- Senator Lugar is currently exploring legislative ideas for authorizing this partnership. In addition, his staff continue to host a variety of briefings to help educate committee staff on climate change issues.

2. Senator Tom Harkin (D-IA)

- As ranking member of the Agriculture Committee, Harkin and his staff have been actively engaged in the issue of climate change.
- His main interest is renewable energy, particularly hydrogen fuel cells, as well as biomass cofiring.

3. Senator Pat Roberts (R-KS)

- Roberts, after a trip to Antarctica where he apparently was briefed on the research being conducted by NSF, believes that climate change is a problem.
- He specifically is interested in promoting remote sensing - using airplanes to measure carbon intake on rangeland.
- Roberts and his staff have been cautiously engaging on this issue; primarily working with Lugar and Kerrey.

4. Senator Bob Kerrey (D-NE)

- Kerrey will be the primary host of the meeting.
- Kerrey has been actively working to help restructure the climate change debate with the agriculture sector. He believes that climate change is a problem and that farmers can be part of the solution.
- Kerrey attended the last Meeting of the Parties in Buenos Aires where he focused on discussing the importance of sinks with developing countries.

5. Senator Max Baucus (D-MT)

- Baucus is interested in getting more involved in the issue of climate change. As a member of the Environment & Public Works, Finance and Agriculture Committees, he is uniquely situated to address this issue.
- Specifically, he is an original cosponsor of the Chafee, Mack, Lieberman Credit for Early Action legislation. At the meeting, he plans on discussing the legislation and opportunities for farmers to be sellers of credits under such a regime.
- Baucus is also currently contemplating introducing all or pieces of the Administration's climate change tax package.
- His agricultural/climate change interest is primarily from the forestry perspective.

ADMINISTRATION'S BIOENERGY INITIATIVE

- The Initiative

- This year, USDA, DOE and other Federal agencies and private partners will launch the bioenergy initiative, a national partnership to develop an integrated industry to produce power, fuels and chemicals from biomass -- crops, trees, and agricultural and forest wastes.

- Bioenergy resources from the nation's farms, forests, pulp and paper mills and landfills already meet more than 3 percent of U.S. heat and electric needs. The Initiative builds upon these efforts to create new and economically viable options for farmers and foresters to use and profit from biomass commodities, products and services.

- This partnership among industries, government agencies, non-governmental organizations and laboratories will foster better collaboration and communication among biomass stakeholders.

- An integrated biomass industry will help grow the U.S. economy, strengthen U.S. energy security, protect the environment, reduce greenhouse gas emissions and revitalize rural America.

- FY 2000 Budget Request

- In FY 2000, the President is proposing \$---- million in funding for the bioenergy initiative. This includes \$--- for USDA, a \$-- increase over FY99, and \$117 million for DOE, a \$30 million increase over FY99.

- USDA and DOE will continue bioenergy research, development and deployment to, for example, test and demonstrate high-yield, low-cost biomass feedstocks; test and demonstrate biomass cofiring with coal; and demonstrate production of alternative fuels, such as ethanol, from biomass wastes.

- In addition, the President's tax package proposes to extend for 5 years the current 1.5 cent per kilowatt hour **tax credit for electricity produced from biomass**. The proposal expands the types of biomass eligible for the credit to include certain forest-related, agricultural and other resources. The package also includes a 1.0 cent per kilowatt hour tax credit for electricity produced by cofiring biomass in coal plants.

- Congressional Interest

- The January issue of *Foreign Relations* contains an article by Senator Lugar (with James Woolsey, former CIA Director) on the potential for biomass to replace oil as the world's main source of energy. The article asserts that countries would see substantial national security, economic and environmental benefits from biomass. Lugar calls for increase

investments in renewable energy research, tax credits, and a coordinated government-industry biofuels partnership.

- Senator Lugar is currently exploring legislative ideas for authorizing this partnership.
- There is widespread Congressional interest in biomass. Several bills have been introduced providing tax credits for various types of biomass (e.g., Roth - poultry waste credit). Members with coal constituents are interested in biomass cofiring with coal.

United States Senate

WASHINGTON, DC 20510

March 9, 1999

Stuart Eizenstat
Under Secretary of State for Economic, Business
and Agricultural Affairs
U.S. Department of State
Washington, D.C. 20520

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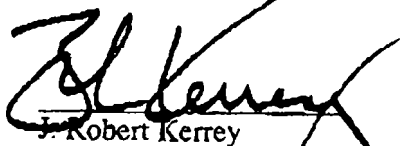
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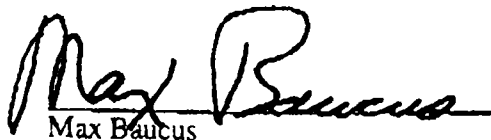
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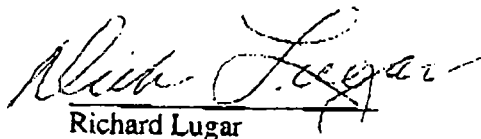
J. Robert Kerrey



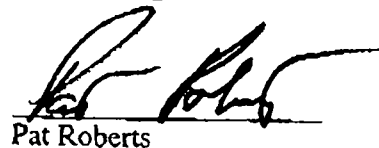
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OPTIONAL FORM 99 (7-90)

FAX TRANSMITTAL

of pages ►

To <i>Ted Stern</i>	From
Dept./Agency	Phone #
Fax # <i>456 2215</i>	Fax #
NSN 7540-01-917-7368	5099-101 GENERAL SERVICES ADMINISTRATION

I want to thank Senator Lugar, Chairman of the Agriculture Committee, and Senators Harkin, Kerrey, Roberts and Baucus for hosting this gathering and inviting me to participate.

I welcome the opportunity to continue the dialogue with you and with the agriculture community on the challenges and opportunities of global climate change.

I am here to listen to your ideas so I am going to be brief, but I want to first say that I agree with our host Senators that as we look at the appropriate role of agriculture in addressing climate change, we must approach the issue in a comprehensive way. We need to make sure we capture the opportunities and benefits and minimize any negative impacts.

This is particularly important given the times we face in U.S. agriculture - where we are facing some of the lowest prices in decades and USDA's Economic Research Service is predicting continued large surpluses and weak demand in the near-term.

I am going to make some comments about what USDA is doing to ensure that we capture the opportunities of global warming and minimize the risks - and then I'll turn it over to Under Secretaries Eisenstat and Loy who will discuss how this same principle is reflected in the Administration's international climate change strategy, particularly as it relates to agricultural carbon sequestration.

USDA's Commitment To Climate Change

We are committed to understanding how climate change affects agriculture and forestry, and to find ways to help mitigate agriculture's contribution to U.S. emissions - estimated at between 9.2 to 10.5 percent of total U.S. emissions.

We are confident we can help find ways to reduce emissions by developing new technologies - but we also have the unique opportunity to actually sequester carbon on our forest, range and crop lands.

That is why as you know, agriculture is an increasingly important part of our national and international climate change strategy.

USDA's Climate Change FY 2000 Budget

Our year 2000 climate change budget request reflects three priorities - and it is key here to

remember that the work we do related to ag global warming has tremendous co-benefits to the agriculture sector. The impetus to better understand soil carbon and come up with green house gas mitigation strategies, will lead to new ideas on how to better manage our soils and increase farm productivity - things we need to be looking at anyway.

First: it focuses on more research - a \$34.1 million increase for global change research and soil carbon studies. Of this increase \$23.7 million is for carbon cycle research and carbon data collection.

The carbon cycle research will help us better understand how agricultural and forestry practices affect the net carbon balance, and help us develop methods which will assist farmers, ranchers, and forest landowners to increase carbon sequestration and improve soil quality.

We will measure the effects of management and conservation practices on carbon storage in forest, crop, and grazing lands and look at how soil carbon is lost to the atmosphere or transferred to stable carbon pools.

The carbon data collection research will identify and quantify carbon sources, sinks and fluxes for all US forest land, including marginal agricultural land and other potential conversion land use types. We will expand and digitize our soil survey data bases in order to be able to better evaluate the impact of policies directed at increasing the terrestrial carbon stock. And we will catalog and provide Internet access to carbon sequestration research data and information. Additional research will be directed at estimating the economic feasibility and benefits of carbon sequestration strategies.

Second: We ask for \$16 million for USDA's Climate Change Technology Initiative that focuses on carbon sequestration and biomass demonstration projects that will show how farmers can sequester carbon at the same time improve their productivity - and directs funds to help develop new technology for predicting and adapting to global climate impacts.

For example, our Natural Resources and Conservation Service will carry out pilot projects that look into carbon enhancing conservation systems. We will field test different combinations of financial incentives, planning tools, and technical assistance for conservation systems that enhance soil carbon sequestration, reduce greenhouse gas emissions, and also achieve water quality, wildlife and other environmental benefits. Pilot projects will be conducted on croplands, grazing lands, and animal feeding operations, using existing financial and technical assistance programs.

Third: We are asking for a \$6.0 million increase to support our biomass programs. This year, USDA, DOE and other Federal agencies and private partners will launch the bioenergy initiative, a national partnership to develop an integrated industry to produce

power, fuels and chemicals from biomass—crops, trees, and agricultural wastes.

This is an area with enormous potential - I recommend you all to read Senator Lugar's very interesting article in this month's issue of Foreign Affairs on the potential of biomass to replace oil as the world's main source of energy. And I know Senator Kerrey and Harkin are also particularly interested in this issue.

USDA and DOE will continue bioenergy research, development and deployment to, for example, test and demonstrate high-yield, low-cost biomass feedstocks; test and demonstrate biomass cofiring with coal; and seek to produce alternative fuels, such as ethanol, from biomass.

The USDA request includes funds for the Forest Service to help develop and demonstrate management practices for short-rotation woody crop production systems that provide near zero net carbon release and are sustainable across a range of geobiological systems. We will also work to identify barriers, economic benefits, and management regimes for farmers to grow trees for energy and carbon sequestration.

Our Agricultural Research Service will develop databases for determining the potential of selected pastures and rangeland renovation practices, growth of biomass crops such as switchgrass, and conventional forage production systems for storing soil organic carbon.

USDA's Economic Analysis Of the Kyoto Protocol

In closing I want to give you a quick update on the status of USDA's analysis of the economic impacts of the Kyoto Protocol on agriculture. In a nutshell it is currently going through the interagency review process and we expect to deliver it to you on April 15, 1999.

Our analysis is consistent with the Kyoto Protocol and the Administration's estimation of the impacts on energy prices when all the key provisions are taken into consideration: including emission trading, a multi-year commitment period, allowance for forestry carbon sinks, joint implementation, and the Clean Development Mechanism).

We take as a starting point that under the Kyoto Protocol, energy prices increase about \$23 per metric ton of carbon. These rising energy prices causes the cost of production to rise slightly, which reduces quantity demanded and boosts crop prices. Higher crop prices increase the value of production, but also reduce quantity demanded and hence produced, which reduces the value of production and leads to small declines in production.

On net, we find that implementing the Kyoto Protocol will have only a very slight negative effect on national farm income.

As you all know, there are several rather alarmist economic analysis out there that predict large energy price impacts (and hence bigger impacts on agriculture), but they are based on models that are either not consistent with the Administration domestic and international commitments and Kyoto Protocol strategy, or they ignore flexibilities in the agricultural sector - such as the likelihood that farmers will respond to slightly higher input prices by reducing output and shifting marginal resources to other uses.

When the study is released, our Chief Economist Keith Collins will walk you through the details including the results of our carbon price sensitivity analysis - which even at higher carbon prices does not find significant negative impacts on the agriculture sector.

I'll mention just one more thing - which is that our analysis also looks at the economic potential for including agricultural carbon sequestration in the Kyoto Protocol. Sequestering carbon in agricultural soils has potential economic benefit to farmers. Carbon sequestration activities in the Kyoto Protocol are limited to those considered in Article 3.3—afforestation and reforestation. But Article 3.4 provides for future consideration of other human induced carbon sequestering activities such as those associated with agricultural soils.

U.S. agricultural soils have a relatively high potential for being managed to store additional carbon. I know we'll talk more about this issue this afternoon.

I now want to turn to Under Secretaries Eisenstat and Loy to talk more about the international process and the strategy for dealing with the carbon sequestration issues within the Kyoto Protocol.

Presentation by Stuart Eizenstat -- Progress to Date

The Kyoto Protocol

- In December, 1997, in Kyoto, Japan, some 160 countries reached an historic agreement to cut greenhouse gas emissions in an effort to fight global warming.
- The Kyoto Protocol includes binding emissions targets for developed nations – 8% below 1990 emissions levels for the European Union; 7% for the United States; and 6% for Japan.
- The Protocol also includes U.S. proposals for flexible, market-based measures to ensure that these targets can be met in a cost-effective manner. The key market-based provisions are:
 - International emissions trading among nations with emissions targets. Under an emissions trading regime, countries or companies that find it relatively expensive to reduce emissions may purchase additional emissions units from those emitters that have more units than they need (because they have already met their targets with room to spare). Trading encourages reductions where they can be achieved at the lowest cost, thus getting the world the most greenhouse gas reductions for each available dollar, euro or yen.
 - Clean Development Mechanism (CDM). Industrialized countries will be able to use certified emissions reductions from projects in developing countries to contribute to their compliance with greenhouse gas reduction targets.
 - Joint implementation among developed countries. Countries with emissions targets may get credit towards their targets through joint project-based emissions reductions in other such countries.
- The Protocol includes some additional elements of flexibility:
 - Emissions targets are to be reached over a five-year commitment period. The first commitment period will be 2008-2012. Allowing emissions to be averaged over a commitment period will allow us to smooth out short-term fluctuations in emissions due to economic performance or weather. The lag before the start of the commitment period will allow time for economies to make the transition to greater energy efficiency and/or lower carbon technologies.
 - Emissions targets include all six major greenhouse gases (carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride), providing more comprehensive environmental protection and added flexibility for meeting targets.
 - , the Protocol provides that activities that absorb carbon can be used as offsets against emissions of greenhouse gases. Including these so-called “carbon sinks” will encourage activities such as afforestation, reforestation, and better forestry and agriculture conservation practices.
- Finally, the United States aggressively sought -- and we were ultimately successful despite limited support -- to include carbon sinks in the Protocol.
- Sinks are addressed in two separate paragraphs in the Protocol.
- The first, Article 3.3, recognizes 3 categories of sinks “activities” that can be counted as offsets against national emissions limits: afforestation, reforestation and deforestation.
- The second, Article 3.4, makes possible the inclusion of additional activities relating to agricultural soils and land use change and forestry categories. This will allow the Protocol to follow a comprehensive approach to human-based greenhouse gas emissions, expanding its coverage of sinks activities as our scientific understanding of those activities advances.

- 2 -

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- The Protocol's entry into force requires that it be ratified by at least 55 countries, accounting for at least 55 percent of the total 1990 greenhouse gas emissions of developed countries.
- Ratification by the United States will require the advice and consent of the Senate.
- The Protocol is a "work in progress;" still needed:
 - elaboration of provisions for the market-based mechanisms (emissions trading, Joint Implementation, CDM) to assure that they are cost-effective and not unduly burdened with bureaucratic structure or artificial constraints, and
 - meaningful participation by key developing countries.
- Members of the Administration have worked hard to engage developing countries more meaningfully in mitigation efforts, but we recognize that we have not yet achieved the meaningful participation by key developing countries to which the President is committed.
- It remains our intention to obtain such participation prior to submitting this agreement to the Senate for its advice and consent.

COP-4 in Buenos Aires (Nov. 2-13, 1998)

- We continued our efforts to advance the positive momentum of Kyoto at the last Conference of the Parties, COP-4, in Buenos Aires this past November. While we did not expect any historic breakthroughs, our principal specific aims were:
 - 1) to develop a workplan and timetable for further elaboration of the rules, modalities, and guidelines for all of the flexibility mechanisms;
 - 2) to continue the dialogue regarding the need for greater developing country involvement; and
 - 3) to explore further the issue of sinks, and increase understanding of this form of carbon sequestration.
- All three of these aims were achieved.
- The Parties agreed to an ambitious "Buenos Aires Action Plan," resolving to reach decisions by the end of 2000 on a number of key issues, including:
 - Rules and guidelines for Kyoto's market-based mechanisms (e.g., emissions trading, joint implementation, and the Clean Development Mechanism);
 - Compliance rules and procedures, including consequences for non-compliance;
 - Development and transfer of cleaner, climate-friendly technologies; and
 - Consideration of the adverse impacts of climate change and response measures
- In addition to this action plan, the Parties agreed to move forward with a process to define, measure, and verify various categories of carbon sinks, including commissioning a Special Report from the Intergovernmental Panel on Climate Change (IPCC) providing a comprehensive analysis of land-use, land-use change, and forestry activities. This process is to be aided by technical workshops and ongoing policy level dialogue which we hope will leave the Parties in a position to consider further decisions on the scope and use of carbon sinks under the Protocol at COP-6.
- I will leave it to Under Secretary Loy to discuss this process on sinks in greater detail as he talks about the road ahead in the international negotiations.
- I would like to close by noting a number of milestones:
 - In Kyoto, only a handful of companies would even acknowledge that the threat of climate change is real. Now a growing number of companies are becoming full

- 3 -

partners in our efforts and pledging real action to reduce emissions. And, for the first time, the Parties themselves recognized the value of directly involving the private sector in these proceedings. We have long believed that this is crucial – it is the private sector that will have to marshal the resources and technology to meet our goals.

- In December 1997, emissions trading was a novel concept to most nations. Now, there is growing recognition that international emissions trading will help us achieve maximum environmental gain for each dollar, peso, euro, or yen invested in greenhouse gas emissions reductions.
- Last year, many developing countries resisted the creation of the Clean Development Mechanism, one of the Protocol's market-based provisions that provides incentives for investment in clean technology projects. Now, one year later, countries from Latin America to Africa, and beyond, are expressing great interest in using this powerful tool to help meet both their environmental and economic needs.
- At COP-3 in Kyoto, developing countries resolutely repeated the 1995 Berlin Mandate's provision that developing countries were not to take on any new commitments in the Kyoto decision. At COP-4, when the President of the Conference of the Parties could not secure agreement to have an open discussion on developing country commitments included on the official meeting agenda, she took the bold step of holding numerous informal consultations with interested developing countries in an effort – albeit ultimately an unsuccessful one – to draw out developing countries and to have them pledge to participate more actively in mitigation efforts.

Loy TPs

- With the Buenos Aires Plan of Action now in hand, we are engaged in a multi-pronged effort to put more "meat" on the bones of the Kyoto agreement and define some operational rules by the sixth Conference of the Parties, which will take place late next year (2000).
- With regard to the Kyoto mechanisms of emissions trading, Joint Implementation, and the Clean Development Mechanism, our goal is to preserve their flexibility and to oppose all efforts to restrict their use in order to assure our ability to meet our target at the lowest possible cost.
- With regard to developing countries, we will stand by those countries such as Argentina and Kazakhstan that have announced their willingness to take emissions targets. At the same time, we are exploring other ways in which developing countries can contribute more meaningfully to the worldwide effort to mitigate global warming.
- And with regard to sinks, we are committed to pushing the envelope in making the Protocol as comprehensive as is scientifically feasible.
- It is important to recognize that while the role and the tremendous potential for carbon sinks in mitigating greenhouse gas concentrations -- and especially the potential for carbon sequestration in agricultural soils -- is unquestioned, the exact science of how best to measure this carbon storage, exactly which processes to consider and which particular agricultural practices to include, still contains a great deal of uncertainty.
- It is vital that we address these issues scientifically and with an eye toward avoiding creating inappropriate incentives to agriculture or counting processes as sinks that are, in fact, sources of greenhouse gases, or vice versa.
- As Under Secretary Eizenstat mentioned, the Intergovernmental Panel on Climate Change, comprised of over 2,500 of the world's top climate scientists, has been charged to do a

Arggh! powder problem. The rest of the TPs basically ~~summarize~~ summarize the process outlined in the handout (following) with additional points that their views (Ag. community) are important and that we intend to consult w/ them regularly.

The International Process as it Relates to Carbon Sinks

1992 UN Framework Convention on Climate Change (FCCC) Adopted

The UN Framework Convention on Climate Change (FCCC) aims to stabilize the concentration of greenhouse gases in the atmosphere in an effort to prevent human-caused disturbances to the global climatic system. The role of sinks is acknowledged.

"The Parties to the Convention must prepare national inventories of emissions by sources and removals by sinks (Article 4.1) ... and must submit national reports at certain intervals (Article 12).

1997 Kyoto Protocol to the Framework Convention Adopted at COP3

The Kyoto Protocol recognizes the potential for forest-based and agricultural-based carbon sequestration activities to reduce greenhouse gas emission and help countries meet their reduction commitment. Two sections are particularly relevant (Article 3.3 and 3.4).

"Article 3.3 provides a way to consider changes in net emissions from (land use, land use change, and forestry) LUCF activities (limited to afforestation, reforestation and deforestation) measures in terms of verifiable changes in carbon stocks in each commitment period....

"Article 3.4 provides a means whereby additional human-induced activities related to changes in greenhouse gas emissions by sources and removals by sinks in the agricultural soils and the land-use change and forestry categories shall be added to, or subtracted from, the assigned amounts for (developed country) Parties (FCCC/SBST/1998/INF.1)."

1998

June - At its Eight Session meeting in Bonn, the Subsidiary Body for Scientific and Technological Advice (SBSTA) of the Framework Convention *"requested the IPCC to prepare ... a special report... on land-use, land-use change and forestry... (to) address the methodological, scientific and technical implications of the relevant articles of the Protocol, particularly Article 3."*

September - SBSTA organized a Workshop on Article 3.3 at the Food and Agriculture Organization (FAO) Headquarters in Rome. Experts discuss issues pertaining to methodology used and definitions for key terms (e.g., reforestation, afforestation, deforestation) { <http://www.unfccc.de> }

November - During the 4th session of the Conference of Parties (COP4) held in Buenos Aires SBSTA requested the secretariat organize a second technical workshop to discuss carbon sequestration, including agricultural soil carbon, within the content of Article 3.4 and invites Parties to (1) provide submissions to the secretariat by February 1st 1999 on other issues to be considered at the workshop; (2) provide submissions to the secretariat by March 1st 1999 on requirements to fulfil the provisions of the first sentence of Article 3.4 (*"...each Party ... shall provide... data to establish its level of carbon stocks in 1990 and to enable an estimate to be made of its changes in carbon stocks in subsequent years."*) and (3) provide submissions to the secretariat by March 1st 1999 on policy and procedural issues associated with Article 3.3 and 3.4 { <http://www.state.gov> }

U.S. Activities Regarding Sinks and Proposed Calendar of Events

1999

January 29th USDA, serving as lead agency for the Federal outreach effort, host a meeting with U.S. constituency groups to discuss upcoming U.S. submission to SBSTA regarding issues to be discussed at the Indianapolis Workshop.

February 18th USDA, serving as lead agency for the Federal outreach effort, host a meeting with U.S. constituency groups to discuss upcoming U.S. submission to SBSTA regarding the two March 1st submissions.

April 8th Pre-Workshop Meeting: USDA and the White House Climate Change Task Force (WHCTF) to host and meeting in Washington D.C. with U.S. constituency groups to preview the U.S. interagency presentation that will be given at the SBSTA Workshop in Indianapolis.

April 26-28th U.S. to host the SBSTA Workshop on Land-use, Land-use Change and Forestry, to be held in Indianapolis. This meeting of scientific experts will focus on issues on technical and scientific matters, such as methodologies, uncertainties, and research and data needs related to carbon sequestration.

May 6th Post-Workshop Meeting: USDA and WHCCTF to host and meeting in Washington D.C. with U.S. constituency groups to review the outcome of the SBSTA Workshop in Indianapolis.

October 21 - December 3 IPCC sends out a draft for the First Government Review of the *IPCC Special Report on Land-Use, Land Use Change and Forestry*

2000

March 6 - April 3 Final Government Review of final draft of the Special Report

April 30 Coordinating Lead Authors Meet Prior to the IPCC Plenary to discuss the Summary for Policymakers

May 1 - 6 IPCC Plenary accepts the Summary for Policymakers of the Special Report

May 31 IPCC delivers final copies of the Special Report to SBSTA at its Eleventh meeting.

SENATORS HOSTING 3/22 MEETING WITH AGRICULTURE SECTOR

The idea for this meeting grew out of discussions with Senator Bob Kerrey after the Meeting of the Parties in Buenos Aires last fall. The purpose of the meeting is to further develop the dialogue between the Administration and the Farm Sector on the issue of climate change and to refocus the debate on the potential opportunities for this sector. The meeting is happening now simply because of scheduling delays. The meeting is being hosted by 5 Agriculture Committee Senators who believe that climate change is a problem we should be addressing.

1. Chairman Richard Lugar (R-IN)

- Lugar has been progressive on the issue of climate change.
- In the January issue of *Foreign Relations*, Lugar (with James Woolsey) published an article on the potential for biomass to replace oil as the world's main source of energy. The article asserts that countries would realize substantial national security, economic and environmental benefits from biomass.
- In the article, Lugar calls for increase investments in renewable energy research, tax credits, and a coordinated government-industry biofuels partnership.
- Senator Lugar is currently exploring legislative ideas for authorizing this partnership. In addition, his staff continue to host a variety of briefings to help educate committee staff on climate change issues.

2. Senator Tom Harkin (D-IA)

- As ranking member of the Agriculture Committee, Harkin and his staff have been actively engaged in the issue of climate change.
- His main interest is renewable energy, particularly hydrogen fuel cells, as well as biomass cofiring.

3. Senator Pat Roberts (R-KS)

- Roberts, after a trip to Antarctica where he apparently was briefed on the research being conducted by NSF, believes that climate change is a problem.
- He specifically is interested in promoting remote sensing - using airplanes to

measure carbon intake on rangeland.

- Roberts and his staff have been cautiously engaging on this issue; primarily working with Lugar and Kerrey.

4. Senator Bob Kerrey (D-NE)

- Kerrey will be the primary host of the meeting.
- Kerrey has been actively working to help restructure the climate change debate with the agriculture sector. He believes that climate change is a problem and that farmers can be part of the solution.
- Kerrey attended the last Meeting of the Parties in Buenos Aires where he focused on discussing the importance of sinks with developing countries.

5. Senator Max Baucus (D-MT)

- Baucus is interested in getting more involved in the issue of climate change. As a member of the Environment & Public Works, Finance and Agriculture Committees, he is uniquely situated to address this issue.
- Specifically, he is an original cosponsor of the Chafee, Mack, Lieberman Credit for Early Action legislation. At the meeting, he plans on discussing the legislation and opportunities for farmers to be sellers of credits under such a regime.
- Baucus is also currently contemplating introducing all or pieces of the Administration's climate change tax package.
- His agricultural/climate change interest is primarily from the forestry perspective.

CARBON SEQUESTRATION & AGRICULTURE

Carbon sequestration or carbon "sinks" will play a critical role in helping the world meet the challenge of climate change. Under the Kyoto Protocol, activities that absorb carbon, such as planting trees, can be used as offsets against emissions of greenhouse gases. Sinks potentially offer great opportunities for those engaged in sequestration activities as well as great capacity to help the United States address the risks of climate change.

What is carbon sequestration and what agricultural activities sequester carbon?

Carbon sequestration refers to the storage of carbon dioxide from the atmosphere by soils, trees, crops, and other plants. Carbon "sinks" such as farmland, rangeland, and forests can make a great contribution to reducing net greenhouse gas emissions. Conservation activities such as planting trees on marginal lands, restoring degraded soils, and adopting best management practices not only absorb carbon but also improve water quality, soil quality, and habitat protection.

Carbon Sinks and the Kyoto Protocol

Thanks largely to the diplomatic efforts of the United States, the Kyoto Protocol recognizes that sinks must be included as part of an economically and environmentally sound approach to climate change. Specifically, Article 3.3 of the Protocol allows land-use change and forestry activities - afforestation, reforestation and deforestation - to be counted toward a party's reduction commitments. Under Article 3.4, the Conference of the parties will decide whether and how other human-induced activities, including those related to agricultural soils, can be added to or subtracted from parties' assigned amounts. There is no need to amend the Protocol to accomplish this.

Making Progress Internationally:

In Buenos Aires, the Parties agreed to move forward with a process to define, measure and verify various categories of carbon sinks. This process includes:

The IPCC Special Report on Land Use Change Issues. The Parties tasked the Intergovernmental Panel on Climate Change (IPCC) (an international body of over 2000 of the world's leading climate scientists and experts) with conducting a comprehensive study on land-use, land-use change, and forestry activities. Authors of the Special Report include international

technical experts, including many from the United States. Once the IPCC report is finished in the spring of 2000, the Parties will be in a position, at the following Conference of the Parties, to consider further decisions on the scope and use of carbon sinks under the Protocol.

UN Workshops on Land Use Change and Forestry. The Subsidiary Body for Scientific and Technological Advice (SBSTA) of the United Nations Framework Convention on Climate Change (FCCC) is organizing several workshops on land use, land use change and forestry issues. The first workshop was held in Rome in September, 1998. The objectives of the Rome workshop were to outline the IPCC Special Report and give Parties the opportunity to discuss data, methods and interpretations of Article 3.3.

The United States is hosting the next workshop which will take place in Indianapolis, Indiana on April 26-28. This workshop will provide another opportunity for Parties to discuss methodological and technical issues related to additional sink categories, such as those created by improved conservation and management of agricultural soils, forests and grasslands. In preparation for this workshop, the Administration will host a meeting on April 8 with interested stakeholders to discuss the United State's presentation at the Indianapolis workshop. Following the workshop, there will be a May 6 stakeholder meeting to discuss the status of this process.

Making Progress Domestically:

The United States leads the world in understanding role of carbon sinks. However, more work is needed better understand how agricultural and forestry practices affect the net carbon balance and develop methods which will assist farmers, ranchers, and forest landowners in increasing carbon sequestration and improve soil quality.

To help further our understanding of carbon sinks and how they can be enhanced, the President's FY 2000 budget includes funding for the following initiatives:

- ***Demonstration Projects and New R&D.*** The Forest Service, the Agriculture Research Service and the Natural Resources Conservation Service will launch new R&D and demonstration projects to optimize farmland, rangeland, and forest carbon sinks.
- ***Carbon Cycle Initiative.*** The FY 2000 budget request establishes a new multi-agency initiative to improve our understanding of how carbon cycles between the atmosphere, the oceans, and land.

Included in this request are funds to study the role of farms, forests, and other natural or managed lands in capturing carbon. Such carbon "sinks" may provide the U.S. and other nations with new tools for offsetting greenhouse gas emissions. The initiative includes \$10 million in new funding for USDA and \$5 million for DOE.

- ***Soil Carbon Inventory.*** The FY 2000 budget request includes \$14 million to significantly expand efforts to conduct a comprehensive scientific inventory of carbon stored in U.S. soils and to develop methods to predict how soil carbon levels would be affected by different practices and policies.

Carbon Sequestration in Soils: Science, Monitoring and Beyond

**Conference Proceedings
St. Michaels Workshop, December 1998**

**Sponsored by
USEPA, NASA, USDOE, USDA, Monsanto Corp.**

Executive Summary

**The complete workshop proceedings will be published by
Battelle Press in May 1999**

For more information contact:

www.battelle.org/bookstore

**Cesar Izaurralde
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202-479-0500**

CONTENTS

Executive Summary

Introduction

1. Science Needs and New Technology for Soil Carbon Sequestration

F. Blaine Metting, Jeffrey L. Smith, Jeffrey S. Amthor

Commentaries

2. Monitoring and Verifying Soil Organic Carbon Sequestration

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Commentaries

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Commentaries

4. Soil Carbon: Policy and Economics

Gregg Marland, Bruce A. McCarl, Uwe Schneider

Commentaries

Report of Working Group 1: Science Needs and New Technology

Report of Working Group 2: Monitoring and Verifying

Report of Working Group 3: Desertification

Appendices:

List of participants in initial workshop

Agenda

List of participants in St. Michaels workshop

St. Michaels Workshop

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Carbon (in the form of carbon dioxide) is accumulating in the atmosphere at a rate of about 3.5 billion metric tonnes per annum as the result of fossil fuel combustion and tropical deforestation. The accumulation of carbon dioxide and other greenhouse gases in the atmosphere is expected to cause observable climatic changes in the coming century. The Kyoto Protocol to the United Nations Framework Convention on Climate Change, if ratified, will require developed nations to reduce their net carbon emissions in the period 2008-2012 to less than was emitted in 1990. Much effort is being devoted to developing strategies for reducing the emissions of the several greenhouse gases and in the case of carbon dioxide removing it from the atmosphere.

With regard to the option of removing carbon from the atmosphere, the Intergovernmental Panel on Climate Change (IPCC) has calculated that over the next 50 to 100 years, agricultural lands alone have the potential to remove anywhere from 40 to 80 billion metric tons of carbon from the atmosphere. A workshop to explore issues central to achieving this degree of sequestration was organized by the Pacific Northwest National Laboratory, the Oak Ridge National Laboratory and the Council for Agricultural Science and Technology and was held at St. Michaels, MD, in December of 1998. The workshop was attended by nearly 100 Canadian and US scientists, practitioners and policy-makers representing agricultural commodity groups and industries, Congress, government agencies, national laboratories, universities and the World Bank. Support for the workshop was provided by the U. S. Environmental Protection Agency, the U.S. Departments of Agriculture and Energy, the Monsanto Company and the National Aeronautics and Space Administration.

The St. Michaels workshop found that reductions in atmospheric carbon content can be achieved by large-scale application of tried-and-true land management practices such as reduced tillage; increased use of rotational crops such as alfalfa, clover and soybeans; and by an efficient return of animal wastes to the soil. Forests and grasslands afford additional capacity for carbon sequestration when established on former croplands. Programs to further soil carbon sequestration will provide ancillary benefits including improvements in soil fertility, water holding capacity, and tilth, and reductions in wind and water erosion. However, although practical and economically viable farming methods that increase carbon storage in soil already exist, research is needed to develop new methods that increase the amount stored and the length of time it remains in the soil. Promising research leads involving applications of molecular science, colloidal chemistry, bioengineering and traditional plant breeding are described in Chapter 1 and the associated commentaries and working group reports.

There is opposition to using soil carbon sequestration in the Kyoto Protocol calculations. One cause of the opposition is the perception that it will be difficult, if not impossible, to verify claims from around the world that carbon is actually being sequestered in soils. The

workshop concluded that it *is* currently possible to monitor changes in soil carbon content, but current methods are expensive and not well suited to global monitoring. Technology, it was concluded, can provide new and widely applicable methods at a reasonable cost. These methods can be based on applications of remote sensing, direct non-destructive sampling, carbon flux monitoring in the field and the use of simulation models validated against observations. Details on these opportunities are given in Chapter 2, its associated commentaries and working group report.

One special opportunity to link the objectives of two United Nations Conventions—the Framework Convention on Climate Change and the Convention to Combat Desertification—was discussed in considerable detail. The workshop concluded that there are vast areas of degraded and desertified lands throughout the world, many in developing countries, where improvements in rangeland management, dryland farming and irrigation can add carbon to the soil. Soil carbon sequestration can provide the impetus for changes in land management practices that will begin the essential process of stabilizing the soil against further erosion and degradation with concomitant improvements in fertility and productivity. Specific management practices, useful species and other appropriate steps in combating desertification are described in Chapter 3 and its associated commentaries and working group report.

Uncertainty about the costs, benefits and risks of new practices could impede the adoption of new technologies to increase carbon sequestration. The workshop concluded that financial incentives could increase the adoption of such practices and potentially provide an addition to farmer income. Government payments, tax credits, and/or emissions trading within the private sector are mechanisms that could be employed to overcome farmer reluctance. Impediment and adoption issues in need of clarification and research are discussed in Chapter 4 and its associated commentaries.

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8 April 1999

Dirk Forrister, Chairman
White House Climate Change Task Force
734 Jackson Pl., NW
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Mr. Forrister:

It is a great pleasure to have the opportunity to comment on the issue of carbon "sinks" and the Kyoto Protocol in preparation for the upcoming SBSTA workshop in Indianapolis.

Counterpart International is an international development organization involved in about 50 countries around the world in humanitarian assistance, micro-enterprise, NGO capacity building and environment. In the environmental area Counterpart works with EarthVoice, the global environmental arm of The Humane Society of the United States which has over 8 million members worldwide. Counterpart has a long history of working with the global Alliance of Small Island States (AOSIS) to address the unique developmental challenges of island nations, including the climate change issue.

We take a keen interest in climate change as it is arguably the greatest environmental threat facing the world – both developing and developed nations. Further, climate change represents a unique synergy between developed country industrialization and responsible development of emerging nations. The forest sector, under great pressure around the globe particularly in tropical areas, is in great need of improved management and conservation and the resources necessary for accomplishing such interventions.

Our *Climate Change Program* seeks to engage private industry in projects that reduce, avoid or sequester CO2. We are currently involved in 3 joint implementation projects. Further, in cooperation with COPEC and UTILITREE (of the Edison Electric Institute) and with support from US Generating and Texaco, Counterpart convened an October 1998 workshop on forestry and climate change in Sabah, Malaysia at the site of two carbon offset projects.

We view forestry as integral to addressing climate change. As such, we recommend the following:

- While there has been much controversy raised over technical problems in measuring project carbon, particularly with forestry projects, significant research and project experience shows that such claims of technical problems are overstated and, in fact, many of these quantification issues have been solved. Therefore, increased emphasis on and dissemination of information on the state of “monitoring, evaluation, reporting and verification” systems would be useful. The US EPA prepared a report entitled: *THE MONITORING, EVALUATION, REPORTING, AND VERIFICATION OF CLIMATE CHANGE MITIGATION PROJECTS: DISCUSSION OF ISSUES AND METHODOLOGIES AND REVIEW OF EXISTING PROTOCOLS AND GUIDELINES*. (<http://www.epa.gov/oppeoeel/globalwarming/reports/pubs/merv/index.html>) Project experience from Malaysia (both reduced impact logging and natural forest rehabilitation)) and Mexico (Scolel Te forest management and agroforestry) are two funded examples of measurable and credible projects.
- Objections to forestry over concerns that inclusion of forestry would lead to no domestic reductions “at the stack” or eco-imperialism (locking up a country’s resources) are overstated and unrealistic. The fact is that the world’s forest sector could stand to benefit greatly from an influx of investment in carbon projects. Further, carbon forest projects have demonstrated a higher standard of monitoring than traditional forest sector projects.
- Forest management, reforestation/afforestation and conservation have all demonstrated through research and project experience that they have a credible, quantifiable, and verifiable positive effect on carbon flows. SBSTA should make a positive finding for inclusion of the range of forestry options and SBSTA should evaluate the forest sector issues on their technical merit, not political considerations. Political considerations should be left to individual nations to determine for themselves.

We hope these ideas are useful to the Administration as it prepares for the Indianapolis meeting and future forums. Please do not hesitate to contact my staff with any questions or concerns at 202-721-1519. We look forward to working with you in the future.

Sincerely Yours,



Stanley W. Hosie
CEO



TROPICAL FOREST U · P · D · A · T · E

*A Newsletter from the International Tropical Timber Organization to Promote
Conservation and Sustainable Development of Tropical Forests*

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1998/4

Sink or Swim

Two of the 'hottest' topics of discussion in forestry during 1998 were climate change and forest fire. Ironically though, neither of these issues is included under the mandate of the Intergovernmental Forum on Forests (IFF), part of the remit of which is to review progress on the management, conservation and sustainable development of forests. A summary of the work of the IFF and its forerunner, the Intergovernmental Panel on Forests, and ITTO's involvement with these processes is included on page 23 of this issue.

The adoption of the Kyoto Protocol to the Convention on Climate Change a year ago established procedures to promote the reduction of greenhouse gas emissions by industrialised nations. However, application of the Articles, particularly those relating to the 'land use change and forests' sector, has given rise to not a little confusion in terms of definitions and eligibility. What constitutes a carbon sink? And which sinks merit carbon credits? The COP4 meeting

of the UNFCCC in Buenos Aires in November 1998 addressed some of these uncertainties but the debate continues (pp 5-8).

One of the issues regarding emission reductions which has not been resolved is agreement on the balance of responsibilities by developed and developing countries. There is resistance by developing countries to undertake the same commitments as those of the industrialised nations which are the principal carbon emitters. Furthermore, the proposed mechanisms for emissions trading which allow developed countries to gain credits for providing financial assistance or technology transfers without necessarily reducing their own emissions is seen by some as an 'easy way out'. For low-lying countries where the effects of climate change pose a real and immediate danger, such as the members of the Association of Small Island States (AOSIS), and which would be seriously threatened by a rise in sea level, substantial emissions cuts are vital.

If current predictions on global warming are right, we need to be not only protecting and managing the forests of today but actively planting trees to create the necessary carbon sinks to mitigate the mistakes of yesterday. The Kyoto Protocol encourages reforestation and afforestation activities by providing opportunities for gains to be made in the form of carbon credits; the intention is that these credits will then become tradeable between Parties. The first period of commitment is 2008-2012 and as Asumadu points out (pp 2-4), countries that wish to take advantage of these benefits should be starting their preparations now.

Catriona Prebble



Inside this issue:

- ◆ Implications of the Kyoto Protocol
- ◆ The need for forest management
- ◆ Interview with Ghana's forestry minister
- ◆ ITTO's forest fire mission

A 25-year old eucalyptus plantation in the Wauchope Lome State Forest, New South Wales, Australia. The New South Wales Government has recently signed deals for carbon credit trades using planted forests to offset greenhouse gas emissions (see pages 2-4). Photo: Image Library, State Forests of New South Wales.

Tropical Forests in the Kyoto Protocol

Prospects for Carbon Offset Projects After Buenos Aires

By Willy Makundi¹, Wan Razali², Don Justin Jones³ and Cyril Pinso⁴

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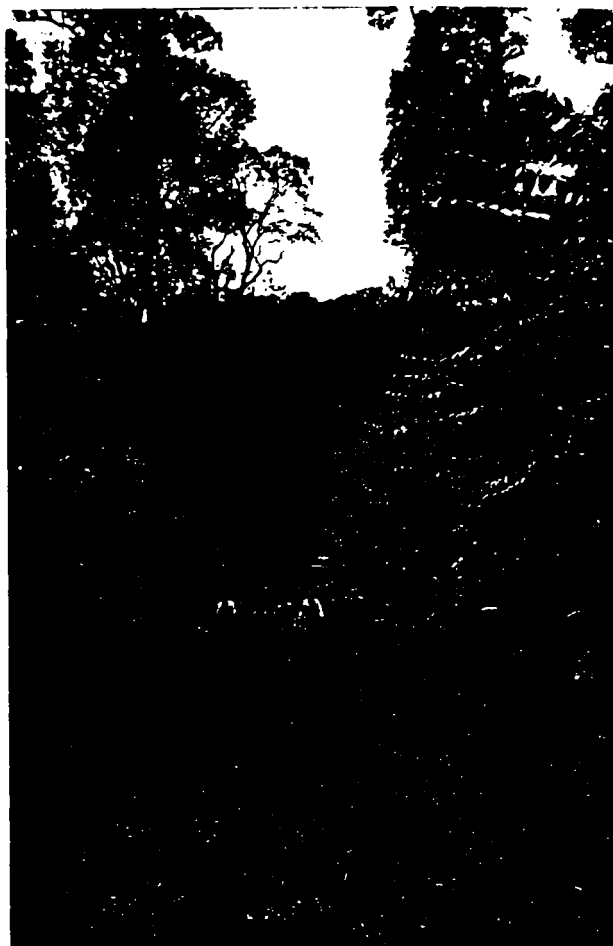
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The 1995 Intergovernmental Panel on Climate Change (IPCC) assessment concluded that rising atmospheric concentrations of major greenhouse gases (GHG) may lead to increases in global temperatures and other environmental changes (IPCC 1996a). Based on data estimating of GHG emissions for the 1980–90 period, the IPCC projected that emissions of GHGs could lead to a 1° to 3.5°C rise in global mean surface air temperatures by the year 2100—an increase which would surpass the cumulative change in global temperature over the past 10,000 years.

Emissions of GHGs, mostly carbon dioxide, methane and nitrous oxide, result from human activities in the energy sector, land use change and forestry sectors, and from industry and waste management. The IPCC report estimates that in the last decade, anthropogenic emissions totalled 7.1 ± 1.1 Gt C per year^a. The contribution of net emissions from land use changes and forestry is an estimated 1.6 ± 1.0 Gt C per year, mostly coming from the lower latitudes. A potential to release large amounts from this sector exists since there is about 1000 Gt C stored in the forests of the world.

However, the forestry sector also has the ability to remove carbon dioxide from the atmosphere through photosynthesis. The IPCC report states that if various measures are implemented in the forestry sector, it is estimated that between 1.1 and 1.8 Gt C per year can be sequestered in 50 years. As such, the possibility of emission reductions in forestry and the potential for increasing carbon sequestration gives the sector an elevated role in measures to mitigate climate change as envisaged in the Kyoto Protocol (see Box on page 7).

This paper aims to highlight some pertinent Articles of the Kyoto Protocol which have a bearing on forestry and forest practices, and to examine how innovative forest management



Under the reduced impact logging project in Sabah, 'water bars' have been constructed on this sloped trail to reduce water erosion and run-off. The water bar is the flat strip area in the foreground. Revegetation was relatively rapid, just four years after harvesting. Photo: A Dinicola, Counterpart International.

techniques fit in the Protocol, with a specific emphasis on a reduced-impact logging project (RIL[®]) and a carbon offset reforestation project, both in Sabah, Malaysia.

Land Use Change and Forestry under Kyoto

The Articles of the Kyoto Protocol of substantive relevance to land use change and forestry (LUCF) are Articles 3 (obligations), 5 (methodologies), 6 and 17 (Joint Implementation (JI) and trading), and 12 (Clean Development Mechanism (CDM)) (see Box on page 7).

The main role of forests as sinks and sources in the Protocol is described under Article 3.3. This Article specifies three areas in forestry to be used for meeting the Parties' commitments to reduce GHG emissions, that is, **afforestation**, **reforestation** and **deforestation** since 1990. These terms, together with the operational concepts "direct human-induced changes" and "measuring

of verifiable changes in stocks" pose some questions regarding definitions, and breadth of included activities. The use of existing definitions as given in the 1996 IPCC Guidelines (IPCC 1996b) or by the United Nations Food and Agriculture Organization would provide opportunities for subvention of the intent or the spirit of the Protocol. For example, if the definition of 'deforestation' does not include harvesting, then the associated emissions of harvesting will not be counted in the change in carbon stocks; yet the ensuing reforestation is counted as sink. However, it is expected that these issues will be resolved before the Protocol becomes law.

These issues are further complicated by Article 3.7 which does not discriminate between activities in LUCF for the purpose of determining base year inventory of GHG emissions which are critical in verifying compliance.

Although Articles 6 and 17 govern the provisions for transfer of emission credits from one Annex 1 Party^a to another through JI and emissions trading, these two do not involve non-Annex 1 countries, except where the credits involved are accrued from CDM. Activities in tropical countries which are pertinent to the commitments of Annex 1 Parties are those covered under Article 12.2 and 12.3(b).

Existing Collaborative Efforts Activities Jointly Implemented

In preparation for joint efforts by signatories of the UNFCCC to meet the objectives of the UNCED decisions made in Rio, a pilot phase of activities to reduce GHG emissions was initiated by various Parties, mostly between Annex 1 and other countries. These projects were intended to provide some answers to key questions, which would govern such joint efforts under the Convention, or under an ensuing Protocol. As of mid-1998, 113 pilot projects in both energy and land use sectors were either planned or under way, 99 of which had been reported to FCCC (JIQ 1998). These projects were to be the forerunners for those activities mentioned in Article 12 of the Kyoto Protocol.

Enhanced Natural Regeneration / Reforestation

In 1993, the Dutch FACE Foundation (Forests Absorbing Carbon dioxide Emissions) which was seeking to establish forest projects to sequester the equivalent carbon dioxide emitted by Dutch power companies, entered into a

collaborative agreement with Innoprise Corporation of Sabah, Malaysia (ICSB) to establish a pilot carbon offset project. The main purpose of the project was to undertake Enhanced Natural Regeneration/Reforestation (ENR) of degraded areas with native species (mostly dipterocarps), with an initial target of reforesting 2,012 ha by 1994 at a cost of about US\$1.3 million. In addition to the operational aspects (seeds, nursery, planting, tending etc), this project included a research and demonstration component. The carbon benefits from this project have been estimated at 183 tC/ha over a 60-year rotation, though there has been some question regarding the validity of the underlying assumptions (Moura-Costa 1996). On the basis of initial investment alone, it would seem to cost about US\$3.53 /tC sequestered which should qualify as an offset, depending on the fate of the sequestered biomass. If there were no temporal considerations with respect to the sequestered carbon, conversion of the area to other land uses

"...the possibility of emission reductions in forestry and the potential for increasing carbon sequestration gives the sector and elevated role in measures to mitigate climate change...."

of lower carbon density would eliminate the offset claim. However, if the area were used for sustainable timber production, and more so if this were to substitute for non-sustainably produced timber, this project would provide a real and certifiable way of meeting the Kyoto commitments at a relatively low cost.

The second phase of the project has now been completed and a new contract for phase three covering 4,500 ha was signed in 1998. The target is for the ICSB and FACE to expand the project eventually to cover 25,000 ha in Borneo, as a part of the Dutch power companies' plan to sequester carbon in 150,000 ha.

Reduced-Impact Logging

In 1992, the US electricity generating company, New England Power (NEP) (which has since been acquired by US Generating Company Inc), began a reduced-impact logging (RIL) project, also in collaboration with ICSB in Sabah, with the specific objective of reducing the amount of carbon emitted via the extensively

used conventional logging techniques (Anon 1998). This creative harvesting approach involves a reduction of collateral emissions from logging through operations, such as pre-felling tree marking and mapping, climber cutting and directional felling, as well as appropriate design and use of roads, skid trails and log landing sites. RIL also includes post-harvesting site operations, such as closure of logging roads, cross drains, and rehabilitation of landing sites.

The associated reduction in carbon emissions and enhanced sequestration is estimated at 65 tC/ha over the logging cycle of the coupe, at an estimated cost of less than US\$4.00 /tC. The initial phase of the project, which was concluded in 1995 covered 1,415 ha, and the project is in the second phase, with a total of 2,400 ha so far harvested using RIL. Initial indications from these pilot projects show that the cost of meeting part of Annex B country^a commitments through enhanced natural regeneration and RIL is much lower than the cost of meeting the commitments domestically. In fact, the current estimates by the US for meeting its commitments under Kyoto range between US\$14 /tC to US\$23 /tC, even after carbon trading, joint implementation and meaningful participation by non-Annex B countries are included (US Govt 1998). Despite the apparent cost-effectiveness of these GHG mitigation measures in tropical forestry, the question still remains as to how these two types of projects fit under the Kyoto Protocol, specifically after the fourth meeting of the Parties (COP4) in Buenos Aires in November 1998.

ENR and RIL under Kyoto

The ENR project is a 'reforestation' activity, which is explicitly included under Article 3. Since the project is located in a non-Annex B country, any accrued emission credits can only be used to meet Annex 1 Party commitments via CDM, and consequently they can be transferred through JI or trading. The legitimacy of the ENR project as a CDM project draws from the explicit recognition of this activity in the commitment clause though not explicitly mentioned under CDM. The only remaining issues would therefore seem to be technical, especially related to meeting the measurability, permanence, additionality and certification elements.

The Kyoto Protocol*

The United Nations Framework Convention on Climate Change (UNFCCC) was established in 1992 at the United Nations Conference on Environment and Development (UNCED) held in Rio de Janeiro, Brazil. Its main objective is "to stabilise atmospheric GHG¹ concentration at a level that would prevent dangerous anthropogenic interference with the climate system." The Convention is a treaty which provides a framework of principles and processes through which subsequent protocols or specific mechanisms and actions can be developed and agreed. The Kyoto Protocol, which emanated from the Third Conference of the Parties (COP3) to the UNFCCC held in Kyoto, Japan in December 1997, is one such agreement. The key elements of the Protocol can be summarised as follows:

- (i) It provides legally binding limits for Annex 1 countries (mostly industrialised countries) on their emissions of six GHGs, relative to emissions in 1990, based on a five-year average between 2008 and 2012.
- (ii) It allows Parties flexibility with respect to national implementation of their commitments through specifically sanctioned activities, with a possibility of additional activities.
- (iii) It provides flexibility in the international context by providing for the use of emissions trading and other mechanisms, including cooperative projects between developed and developing countries.
- (iv) It is comprehensive in that it covers GHG emissions by sources and removals by sinks, in all sectors, save for some restrictions in land use change and forestry.

The Protocol will enter into force 90 days after at least 55 Parties to the Convention have ratified it, including Annex 1 countries accounting for at least 55 per cent of total CO₂ emissions in 1990.

Articles of the Kyoto Protocol of Particular Relevance to Forestry

Article 3, Paragraph 3 – Included Activities

*"The net changes in greenhouse gas emissions by sources and removals by sinks resulting from **direct human-induced land-use change and forestry activities, limited to afforestation, reforestation and deforestation since 1990, measured as verifiable changes in stocks in each commitment period**, shall be used to meet the commitments under this Article of each Party included in Annex 1. The greenhouse gas emissions by sources and removals by sinks associated with those activities shall be reported in a transparent and verifiable manner and reviewed in accordance with Articles 7 and 8."*

Article 3, Paragraph 4 – Future Additional Activities

*"...The Conference of the Parties serving as the meeting of the Parties to this Protocol shall, at its first session or as soon as practicable thereafter, decide upon modalities, rules and guidelines as to how, and which, **additional human-induced activities related to changes in greenhouse gas emissions by sources and removals by sinks in the agricultural soils and the land-use change and forestry categories shall be added to, or subtracted from, the assigned amount for Parties included in Annex 1**, taking into account uncertainties, transparency in reporting, verifiability, the methodological work of the Intergovernmental Panel on Climate Change, the advice provided by the Subsidiary Body for Scientific and Technological Advice in accordance with Article 5 and the decisions of the Conference of the Parties..."*

Article 3, Paragraph 7 – Accounting for Baseline Emissions

"...Those Parties included in Annex 1 for whom land-use change and forestry constituted a net source of greenhouse gas emissions in 1990 shall include in their 1990 baseline emissions year or period the aggregate anthropogenic carbon dioxide equivalent emissions by sources minus removals by sinks in

1990 from land-use change for the purposes of calculating their assigned amount."

Article 6 – Joint Implementation

"For the purpose of meeting its commitments under Article 3, any Party included in Annex 1 may transfer to, or acquire from, any other such Party emission reduction units resulting from projects aimed at reducing anthropogenic emissions by sources or enhancing anthropogenic removals by sinks of greenhouse gases in any sector of the economy,..." [Article 6.1].

... "Any such project provides a reduction in emissions by sources, or an enhancement of removal by sinks, that is additional to any that would otherwise occur;..." [Article 6.1(b)].

Article 12 – Clean Development Mechanism

"...The purpose of the clean development mechanism shall be to assist Parties not included in Annex 1 in achieving sustainable development and in contributing to the ultimate objective of the Convention, and to assist Parties included in Annex 1 in achieving compliance with their quantified emission limitation and reduction commitments under Article 3." [Article 12.2]

"Parties included in Annex 1 may use the certified emission reductions accruing from such project activities to contribute to compliance with part of their quantified emission limitation and reduction commitments under Article 3 as determined by the conference of the Parties serving as the meeting of the Parties to this Protocol." [Article 12.3(b)]

Article 17 – Emission Trading

"...The Parties included in Annex B may participate in emissions trading for the purpose of fulfilling their commitments under Article 3. Any such trading shall be supplemental to domestic actions for the purpose of meeting quantified emission limitation and reduction commitment under that Article."

¹ Carbon dioxide (CO₂), methane (CH₄), nitrous oxide (NO₂), and HFCs, PFCs, and SF₆.

*Details of the Kyoto Protocol can be found at <http://www.unfccc.de>

On the other hand, the RIL project is not as easy to classify since it does not fit neatly under the three activities currently allowed under Kyoto in LUCF, i.e., reforestation, afforestation and deforestation. As the Protocol currently stands, emissions from "forest harvesting" (clear-cutting or selective logging), are not included and, by extension, credits from reducing emissions from harvesting would have no standing. The RIL project can still be included under a definitional argument which would consider conventional logging as a deforestation or forest degradation process for the purpose of GHG emissions. To make such a case, one runs into the problem of whether the concession area would have eventually been reforested without the project, and to what extent the carbon credit is "additional" to the projected baseline. Under Articles 3 and 6, credits for reforestation of a harvested area are counted, but under the CDM route, they must meet the additionality criteria. Thus without a broad interpretation of definitions, it seems less likely for RIL projects to be included under the current Articles of the Protocol.

The other avenue through which the RIL project could come under the umbrella of the Protocol is the clause in Article 3.4 on mechanisms and modalities for revising the list of activities currently included in LUCF and agricultural soils. To the extent that the RIL activity can be shown to lead to "verifiable changes in stocks" and that the credits will be awarded "for actions not circumstances", the project is a good candidate for inclusion under the Protocol since it will open an extensive avenue of emissions reduction in an area which encompasses the entire tropical biome.

Furthermore since Article 2 requires Parties to implement GHG mitigation policies and measures while taking into account prior commitments under relevant international environmental agreements and promotion of sustainable forest management practices, afforestation and reforestation, both the ENR and RIL projects would seem to enhance this objective.

However, the modalities have to be worked in such a way that any new activity promotes the core objective of the Convention and does not lead to subversion of the spirit of the Protocol. For example, they have to guard against a

perverse incentive which exists when a benefactor of a carbon offset project does influence the amount of credits obtained from a project by negatively affecting the extent of emissions from adjacent or designated baseline (without project) sites. As such, a concessionaire who has a RIL project financed under CDM but who also conducts conventional logging in an area which is being used as a baseline, will have an incentive to maximise damage on the non-project site. In this case, monitoring and evaluation and establishment of baseline sites must include adherence to known past practices and logging laws and regulations in order to avoid apparent conflict of interest.

Conclusion

The Kyoto Protocol for implementation of the UNFCCC includes the land use change and forestry sector as a source and sink of GHG, and identifies areas where emission reduction and carbon sequestration can be undertaken by Parties to the Convention under different obligations and arrangements. The Protocol also provides a mechanism for revising the list of included activities and modalities for elaboration of operational definitions and necessary methodologies for implementation of the Convention.

When examined under the Articles of the Protocol, the generic structure of the ENR project on reforestation is well covered under the Kyoto Protocol of the UNFCCC and should qualify for JI status and CDM financing. On the other hand, the RIL project only qualifies under a broad interpretation of the definitions of terms in the relevant Articles of the Protocol. However, RIL and similar projects would seem to be good candidates for activities to be included under CDM on account of their verifiable emission reduction potential and other environmental and resource benefits associated with them. As such, they should be strongly recommended to the Subsidiary Body for Scientific and Technological Advice of the IPCC for consideration under Article 3.4.

- * Gt C equals 1 billion metric tonnes of carbon, which is equivalent to 3.67 billion tonnes of CO₂.
- * Annex I countries are those Parties listed under Annex I of the FCCC signed in Rio in 1992.
- * Annex B constitutes 40 countries which have emission limitation and reduction commitment under the Kyoto Protocol.

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Letters to the Editor

'Chainsawmills'

I would like to comment on the letter by Andreas Kress in *TFU* Vol 8:3 in which he criticised the practice of 'chainsawing' and suggested that portable sawmills should be used instead.

For several years I was involved in a project in Vanuatu (South Pacific) which started by promoting portable sawmills, but finished by working with 'chainsawmills'. Why? Simply because we found that chainsawmills were much more appropriate to the needs of the people participating in the project. The significantly lower cost meant that operators did not have to become full-time sawmillers, but could cut trees on an occasional basis as they needed timber or income.

As d'Oliveira *et al* described in their original article (*TFU* Vol 8:1), their aim was to find a way in which small farmers could gain an income from sustainable management of the forests on their farms. Given the annual production levels that they describe, a small sawmill would be inappropriate.

Kress may be right to say that chainsawing produces high levels of waste (although d'Oliveira cites conversion figures of 41–61 per cent), and it is certainly an inefficient tool for large-scale timber production. However, it can be an efficient way of meeting the needs of people living in and near the forest, and of involving them in forest management.

While it would be inappropriate to promote chainsawing in all situations, it is equally inappropriate to ban it in all situations. Our objective should be to identify the tools that best meet the needs of the people and of the forest management.

Stephen Wyatt

Université Laval
Québec, Canada

Forest Management Workshop

On 22–24 October 1998, a workshop was held in Sabah, Malaysia, on Forest Management and Climate Change. It was jointly organised by COPEC, US-Generating Company New England, Counterpart International and Innoprise Corporation Sdn Bhd, and was sponsored by Texaco and US-Generating Company New England.

The participants of the workshop presented several findings based on the results of the Dutch FACE Foundation (Forests Absorbing Carbon dioxide Emissions) Enhanced Natural Regeneration/Reforestation Project and the New England Power's Reduced-Impact Logging Project. A discussion of these findings appear in the article by Makundi *et al* on page 5-8 in this issue.

At this workshop, I stated (for Texaco):

"Texaco is pleased to have been a co-sponsor of the workshop as we pursue a portfolio of approaches in managing emissions while we provide the energy that the world needs. In providing this energy, Texaco is a world leader in the development and application of innovative technologies in enhanced oil and gas recovery and production, power generation, and co-generation. This educational workshop with many distinguished forestry experts and the field visits made to the rainforest highlighted the importance of improved forestry management (including reduced-impact logging) and conservation as a credible and verifiable link to the sequestration of carbon dioxide."

In my *personal* opinion, I believe that the credibility and verifiability of the link between carbon dioxide sequestration and improved forestry management practices will be important to the development and acceptance of such practices as a viable sink under the Kyoto Protocol. The projects that are being conducted in Sabah, with the results that were highlighted during the workshop and the field visits, provide these critical links in the development of rigorous guidelines in the conduct of specific forestry management practices and the auditing of these practices. Further, methodologies to quantify the sequestration of carbon dioxide are being

applied during the conduct of these projects with a view towards continuous improvement in credible monitoring, evaluation, and verification. The results presented at the workshop are encouraging and critically important to the future discussions at the meetings of the Intergovernmental Panel on Climate Change and the subsidiary bodies under the United Nations Framework Convention on Climate Change.

Arthur Lee

Environmental Technical Coordinator (GHG/
Air/Energy), Texaco International Production
Houston, Texas U.S.A.

ITTO Fellowships

ITTO offers fellowships to promote human resource development and institutional strengthening in the forestry sectors of member countries. The priority areas are: Forest Industry; Economic Information and Market Intelligence; and Reforestation and Forest Management. Fellowship funds are provided for the following activities: (1) study tours to forests, mills and research institutions; (2) participation in conferences, workshops and training courses; (3) postgraduate programmes (partial tuition grants), not including PhDs; (4) short-term research; (5) technology transfer to producer member countries; and (6) preparation of technical documents.

Applications are required to conform to ITTO's general objectives in respect of sustainable forest management, utilisation and trade and, in particular, the Year 2000 Objective. The average award is US\$6,500 with a maximum of US\$12,000. Only nationals of ITTO member countries are eligible to apply.

The Fellowship Selection Committee appraises applications at the ITTO Council Sessions in May and November each year. Applicants are advised that fellowship activities may not commence until at least one month after the relevant Council Session. The next deadline for applications is **28 March 1999**.

Further details and application forms (in English, French or Spanish) are available from: Dr Chisato Aoki, Fellowship Programme, (see ITTO contact address on page 31).

Copies of Fellowship Reports are also available from the Secretariat.

AGENDA FOR SINKS MEETING

APRIL 8, 1999

Welcome

Todd Stern, Assistant to the President

International Context of Article 3.4 Workshop

Jeff Miotke, Deputy Director of Global Change Office, State Dept.

Introduction to Workshop Presentations

Margot Anderson, Director, USDA Global Change Office

Discussion of U.S. Presentations/Questions and Answers

Moderator, Dirk Forrister, Chairman, White House Climate Change Task Force

- Forest Management Presentation, Rich Birdsey, Forest Service, USDA

Break – 10 minutes

Discussion of U.S. Presentations/Questions and Answers Con't.

Moderator, Dirk Forrister

- Soil Management Presentation, Mike Jawson, ARS, USDA

Update on New Carbon Measurement Instruments

Bruce Kimball, ARS, USDA

- Rapid Measurement of Soil Carbon Concentration Using Infrared Techniques, Greg McCarty, ARS, USDA
- In Situ Nondestructive Soil Analysis, Imaging and Testing, Lucian Wielopolski, Brookhaven National Laboratory

FAX TRANSMISSION

SENATOR BOB KERREY
141 Hart Building
Washington, DC 20510
202-224-6551
Fax: 202-224-7645

To: Roger Ballentine
Fax #: 456-6468
From: Debbie Reed
Subject: May 18 Meeting Invite

Date: May 4, 1999
Pages: 6 (including this cover sheet)

COMMENTS:

Note that the last page is an FYI -- it is an incomplete list, but it's an eye-opener.

I gave a luncheon talk today to a DOE/national labs group that has convened to discuss the Battelle model, and how to move forward with this strategy -- and broached the idea of codifying this. It was well-received, and they were fully in agreement that we move forward in parallel with ongoing UNFCCC negotiations. (I expressed the sentiment that our greatest point of departure with the Murkowski bill is that it abandons the UNFCCC, and the Kyoto framework). As a matter of fact, one gentlemen rightly expressed the sentiment that if we abandon the Kyoto protocol we lose the Kyoto mechanisms, without which we lose the hook for industry involvement. We had a brief discussion following that. Overall, I think it was a good discussion.

Norm Rosenberg was there, and we talked about following up with you and Todd re: the Battelle Model. He is open to doing this, either before or after the May 18 meeting.

Finally, BK will address the group on the 18th for 10 minutes or so, and I fully expect that we'll talk about the Battelle strategy as the basis for legislation; Baucus will not be able to attend at all.

United States Senate

WASHINGTON, DC 20510

May 3, 1999

Ernest Mizek
Chief Executive Officer
Cargill
P.O. Box 5724
Minneapolis, MN 55440-5724

Dear Mr. Mizek:

Recognizing the need for effective, long-term policy making on climate change, we have organized a seminar designed to introduce and discuss sound, science-based strategies that we can use as the basis for policy initiatives. The seminar will be held on May 18, 1999, from 10 a.m. to noon in SC6 of the Capitol.

Studies have shown that technology is a critical determinant of the cost of implementing climate change policies. What has been missing is a strategic perspective. It is essential to get the long-term technology and the long-term policy right—to manage carbon over the next century so as to minimize human-caused climate change and to do so in the most economically effective ways possible.

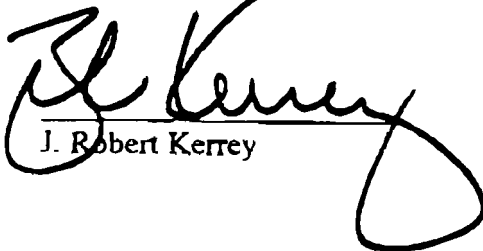
The objective of a project spearheaded by the Pacific Northwest National Laboratory [PNNL] is to identify, through a public-private research collaboration, global and regional technology portfolios that could minimize the cost of atmospheric stabilization. The Global Technology Strategy Project adds a new dimension to our understanding—a long-term, international energy technology strategy. The project uses the best current knowledge about present and potential future technology and embeds that knowledge in an economic and policy context to examine the potential value of alternative energy R&D portfolios and patterns of technology development.

As the attached graphic displays very well, the PNNL technology strategy identifies a unique opportunity for agriculture to contribute to solving the climate change problem. Agricultural soils around the world are capable of absorbing between 40 and 80 Pg (1 Pg=1 billion metric tons) of carbon (in the form of CO₂) from the atmosphere and sequestering it in soils over the course of the next century. An immediate and no-regrets option, soil carbon sequestration can play a particularly crucial role in the first two or

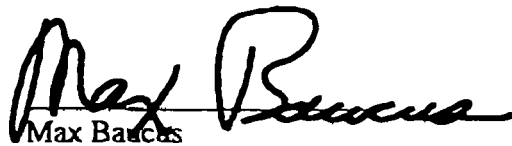
three decades of the next century allowing time, thereby, for the introduction of new, energy efficient, low carbon technologies. The Council for Agricultural Science and Technology (CAST), which has worked with PNNL in organizing a recent workshop on opportunities for and problems associated with soil carbon sequestration, will participate in the briefing.

We believe that the information to be provided at the seminar should be helpful in confronting the challenges of corporate planning and investment during this period of uncertainty about what the policy responses to potential climate change will be. We invite you and/or a top-level designee to attend this special informative seminar. Please RSVP to Debbie Reed or Rachel Birnbaum at (202) 224-6551 by May 11 if Cargill will participate in this special seminar. Attached for your information is a list of invitees.

Sincerely



J. Robert Kerrey



Max Baucus

Enclosures

cc: Rob Johnson

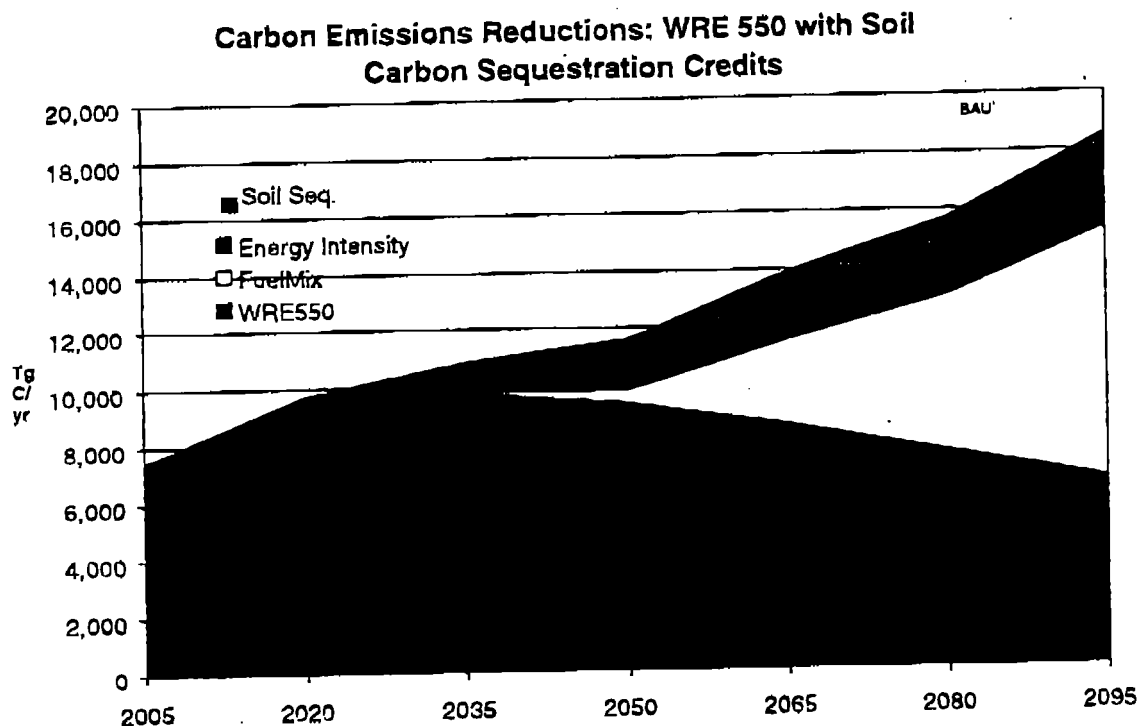


Fig. 1. Global Carbon Emissions Reductions: WRE 550 (Wigley et al, 1996, 550 ppmv atmospheric CO₂ concentration). This figure shows a hypothetical path to carbon emissions reductions from MiniCAM's business as usual (BAU) emissions pathway to the WRE 550 concentration pathway, under a scenario in which credit for soil carbon sequestration is allowed. Soil sequestration of carbon alone achieves the necessary net carbon emissions reduction in the early part of the century. From the middle of the century on, further emissions reductions must come from changes in the energy system (such as fuel switching and the reduction of total energy consumption).

MAY 18 SEMINAR INVITEE LIST

Robert Shapiro
Bruno Alesii
Monsanto Company

Hans W. Becherer
John Hickman
Deere & Company

Charles O. Holiday
DuPont

Bruce C. Rohde
Dick Gady
ConAgra, Inc.

Edward Shonnesy
Novartis AG

Charles S. Johnson
Pioneer Hi-Bred International, Inc.

John Doxsie
A.E. Staley

G. Allan Andreas
Archer Daniels Midland

Ernest Mizek
Rob Johnson
Cargill

Charles Fischer
Dow AgroSciences



The Battelle Technology Strategy Project:

An International, Public/Private, Technology Strategy Project To Address the Issue of Climate Change

Sponsored by:

Battelle Memorial Institute, Electric Power Research Institute, British Petroleum, Mobil Corporation, Japanese National Institutes for Environmental Research, Toyota, European Commission, PEMEX, NAFTA Commission for the Environment, . . .

With the participation of:

Beijing Energy Research Institute, Indian Institute of Management, International Institute for Applied Systems Analysis, Korean Energy Economics Institute, The National Autonomous University Mexico, US Council on Foreign Relations, Stanford China Project, Tata Energy Research Institute, Japan Science & Technology Corp., . . .

In collaboration with:

Intergovernmental Panel on Climate Change WG II, International Energy Agency, IAEA, USDOE, Other US Government Agencies, . . .

Carbon Sequestration Workshop April 1999

In late April, the United States hosted an international workshop in Indianapolis, Indiana on carbon sequestration. The workshop was the second of two organized by the Subsidiary Body for Scientific and Technological Advice (SBSTA) of the United Nations Framework Convention on Climate Change (FCCC). The workshop was intended to bring together experts on land use, land use change, and forestry from around the world. Representatives from over 40 countries and from U.S. and international stakeholders participated in the three day workshop.

Background

Carbon Sinks and the Kyoto Protocol. Carbon sequestration or “sinks” refers to the storage of carbon dioxide from the atmosphere by soils, trees, crops, and other plants. Carbon sinks could play a critical role in reducing net greenhouse gas emissions and helping the world meet the challenge of climate change. Conservation activities such as planting trees on marginal lands; restoring degraded soils; and adopting best management practices not only improve water quality, soil quality, and habitat protection but also sequester carbon. At the U.S.’ strong direction, under the Kyoto Protocol carbon sinks can be used to offset emissions of greenhouse gases. Specifically, under Article 3.3 of the Protocol certain forestry activities are counted toward a party’s reduction commitments. Moreover, under Article 3.4 the Parties can add additional sink activities such as those related to agricultural soils.

International Progress. The Indianapolis workshop was part of a process - agreed to by the Parties in 1998 - to define various categories of sinks and determine how they can best be measured, verified and included in the Kyoto Protocol. This process includes the IPCC Special Report on Land Use Change Issues. The Parties assigned the Intergovernmental Panel on Climate Change (IPCC) (an international body of over 2,000 of the world’s leading climate scientists and experts) with conducting a comprehensive study on land-use, land-use change, and forestry activities. Authors of the Special Report include international technical experts, including many from the United States. Once the IPCC report is finished in the spring of 2000, the Parties will be in a position at the following Conference of the Parties to consider further decisions on the scope and

use of carbon sinks under the Protocol.

Land Use & Forestry Workshops.

Technical workshops are an important part of the SBSTA process, allowing the Parties to come together to share the best available knowledge and form a sound scientific basis for policy decisions. The Indianapolis Workshop consisted of four parts:

IPCC Authors. Five of the lead authors of the IPCC made presentations on the contents of and progress on their chapters of the IPCC special report on sinks. The workshop participants engaged in a discussion of how the IPCC process could best inform SBSTA.

Party Presentations. Because sharing knowledge and information was one of the primary goals of the workshop, 15 of the Parties at the workshop provided presentations on a wide variety of subjects ranging from current inventory methods to specific sequestration activities.

Breakout Sessions. The participants split into smaller groups to further discuss both forestry and agriculture soil issues. For example, one forestry group compared the impact of using broad versus narrow approaches to defining carbon sequestration activities in the Protocol. The agriculture soils group discussed a variety of issues including the relationship between sequestration activities and verifiable changes in carbon and the permanence of agriculture soil sinks.

Field Trip. The U.S. also hosted a field trip to a no-till farm and the Morgan State Forest to see sequestration activities and measurement practices.

The workshop provided an important opportunity for the IPCC to receive guidance on their Special Report and for the Parties to discuss alternative approaches to defining sequestration activities under Article 3.4 of the Protocol. It also provided the Parties and U.S. and International stakeholders with the first opportunity to discuss both the technical aspects of sequestration as well as the policy and procedural issues related to including additional sequestration activities in the Kyoto Protocol.



Fax Transmission

U.S. SENATOR RICHARD LUGAR

To:

MICHELLE JOURN

OFFICE:

CEA

FAX #:

395 6958

PAGE 1 OF

5

DATE:

FROM:

JEFF BURMAN

228 0360

PLEASE NOTE: I ASSUME CARLIS SALISBURY,
OUR HEARING CLERK, HAS FAXED YOU THE
INVITE.

PLEASE FAX ME A COPY OF HER
RESUME AT YOUR EARLIEST CONVENIENCE.

YOU SHOULD KNOW THAT PRIVATE WITNESSES
AFB & WHARTON ECONOMIC FORECASTERS (WEFA) WILL
HAVE THEIR OWN ECONOMIC ANALYSIS & ROMINGER
WILL BE ON THE SPOT BECAUSE OF USDA HAS BEEN
AWAITING YOUR ANALYSIS BEFORE THEY CAN
DO THEIRS. 306 Hart Senate Office Building
Washington, D.C. 20510-1401
Phone (202) 224-4814
YOU MAY WANT TO
DISCUSS THIS WITH DIANNA WITH KEITH
COLLINS OF USDA AT 720 4169.

RICHARD D. LUGAR, INDIANA, CHAIRMAN
 JESSE HELMS, NORTH CAROLINA
 THOMAS COCHRAN, MISSISSIPPI
 MITCH MANDEL, KENTUCKY
 PAUL COVINO, ILLINOIS
 RICK SANTORUM, PENNSYLVANIA
 PAT ROBERTS, KANSAS
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 PHIL GRAMM, TEXAS
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 THOMAS A. DASCHLE, SOUTH DAKOTA
 MAX BAILEY, MONTANA
 J. ROBERT KERNEY, MICHIGAN
 TIM JOHNSON, SOUTH DAKOTA
 MARY LAMORHEU, LOUISIANA

United States Senate

COMMITTEE ON
 AGRICULTURE, NUTRITION, AND FORESTRY
 WASHINGTON, DC 20510-6000
 202-224-2035

March 14, 1997

The Honorable Al Gore
 Vice President
 The White House
 Washington, D.C.

Dear Mr. Vice President:

Farm state members of Congress have become increasingly concerned with the lack of adequate attention given to agricultural concerns as the Administration works on the United Nations Framework Convention on Climate Change (UNFCCC). As you know, this treaty, if ratified, could affect U.S. agricultural production and competitiveness.

American agricultural interests must be adequately represented during the upcoming negotiations. This representation will ensure the continued success of farmers and ranchers and allow them to maintain their productivity, which ultimately benefits consumers. We believe we can address the global greenhouse gas issue and protect the environment while carefully considering the interests of America's farmers, ranchers and consumers. However, before the United States is committed to a final international agreement to limit greenhouse gases, it is essential that we know more about the treaty's impact on our nation's largest employer and the world's most efficient producers of food and fiber.

We will be closely monitoring the negotiations as work continues on the final agreement before its submission to the Senate for ratification. We request an analysis and briefing by the Administration on the following issues as soon as possible:

- 1) The potential effects of climate change on U.S. agriculture and livestock production.
- 2) The estimated greenhouse gas emissions resulting from the production of crops and livestock in the U.S.
- 3) The net contribution of U.S. forests and crops in the sequestration of greenhouse gases.
- 4) Actions or controls necessary to reduce agricultural greenhouse gas emissions to comply with obligations that may arise under the treaty and an economic analysis of their impact on U.S. farmers and ranchers.

The Honorable Al Gore
March 14, 1997
page 2

- 5) Whether and to what extent greenhouse gas emission controls would disadvantage agricultural producers in this country compared to producers in other countries with less stringent emission controls or no controls at all.

We understand that serious discussions in preparation for the Kyoto meeting may commence during July and August of this year. We firmly believe this information, as well as the Administration's formal economic analysis, should be submitted to Congress well before then so that the various options for U.S. policy may be understood and their impact on American agriculture and the American economy may be carefully assessed.

We look forward to working with you on this important issue.

Sincerely,

Alicia Leger

Tom Vachek

Paul Cook

John Vachek
Debbie Helms

Rick Santorum

Max Baucus

Jim Johnson

Jeff Lund

Pat Roberts

Lyne

Chuck Stander

Al McConnell

Steve

cc: The Honorable Madeleine Albright
The Honorable Dan Glickman



OFFICE OF THE VICE PRESIDENT
WASHINGTON

May 22, 1997

The Honorable Richard G. Lugar
Chairman
Committee on Agriculture, Nutrition, and Forestry
United States Senate
Washington, D.C. 20510-6000

Dear Mr. Chairman:

Thank you for the letter from you and other members of the Senate Committee on Agriculture, Nutrition and Forestry regarding the climate change negotiations and the potential impacts of climate change on U.S. agricultural production and competitiveness.

The issue of global climate change is an important one for agriculture. Over the next 50 years, U.S. food and fiber producers face major challenges in keeping pace with the ever increasing demands of a growing world population. Climate changes, environmental degradation, and increasing competition for land and freshwater supplies will make these challenges even greater. Based on current trends the Intergovernmental Panel on Climate Change projects significant impacts to ecological systems and the economy, including food security, water resources, coastal zones, and human health.

Information on the potential impacts of climate change on agriculture and net greenhouse gas emissions from agriculture and forestry activities is currently available. The White House Climate Change Task Force can arrange a briefing on this at your earliest convenience.

In light of the potential environmental consequences of climate change, this Administration has called on developed countries to agree to realistic and achievable binding targets for greenhouse gas emissions in the current climate negotiations. We believe that each nation needs the flexibility to determine its own cost-effective means of reducing emissions. And finally, everyone -- all nations (including developing countries) and all economic sectors -- must contribute to the solution because climate change is a global problem. We must begin now to lead the way to a sustainable future.

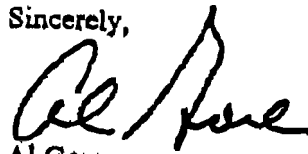
Further commitments under the United Nations Framework Convention on Climate Change must ensure that the U.S. economy remains strong and internationally competitive. To help find the best solution, the Administration is engaged in an assessment of the economic impacts of various emissions targets [coordinated by Dr. Everett Ehrlich, Undersecretary for

Economic Policy at the Department of Commerce.] This assessment includes a variety of aggregate national economic impacts, as well as sectoral and international economic impacts. This analysis is currently underway. As it progresses, it will be subject to a peer review process. Once this process is completed, we fully expect to brief Congress.

As part of this assessment, the Department of Agriculture will analyze the impact of any new agreement on America's food sector and our farmers, ranchers and consumers. Evaluation of the agricultural sector impacts of emissions reductions scenarios is contingent in some cases on national macroeconomic results. As a result, an agricultural sector analysis will follow Dr. Ehrlich's modeling results.

I appreciate your concerns and look forward to working with you on this important environmental issue.

Sincerely,



Al Gore

AG/pgu

United States Senate

WASHINGTON, DC 20510

May 11, 1998

Dear Colleague:

We plan to send the attached letter to President Clinton. The letter urges clarification of existing language regarding forestry and agriculture in the latest protocol to the climate change treaty. We ask the President to promote domestic policy initiatives that encourage investment in the credible and cost-effective mitigation capacity of forestry and agricultural sinks to reduce excess atmospheric carbon dioxide concentrations. We believe that fair market competition should determine which technologies and strategies are employed to reduce greenhouse gases.

Forestry and agricultural management strategies are proven and cost-effective methods for reducing atmospheric greenhouse gas concentrations and provide ancillary environmental benefits as well such as watershed protection, soil conservation, and reduced storm water runoff. We urge the adoption of credits for domestic forestry and agricultural management and conservation strategies and development of standardized accounting methods for carbon sequestration.

We hope that you will support us in our efforts to bring clarity to the next iteration of the climate change treaty scheduled for discussion in early June. If you would like to sign this letter, please have your staff contact Dave Verardo (4-3430) in Senator Wyden's office or Susanne Fleek (4-4242) in Senator Leahy's office by May 22, 1998.

Respectfully,



Senator Ron Wyden



Senator Patrick J. Leahy

United States Senate

WASHINGTON, DC 20510

May 11, 1998

The Honorable Bill Clinton
President
The White House
Washington, D.C.

Dear Mr. President:

The latest protocol to the climate change treaty that was negotiated in Kyoto was an important step towards international collaboration in addressing the environmental effects of rising concentrations of greenhouse gases in the atmosphere. It could be improved, however, by encouraging investment in the natural mitigation capacity of forestry and agricultural sinks. In a market-based system that encourages the most cost-effective methods for reducing net emissions of carbon, forestry and agricultural carbon sinks are a profitable pathway to reducing excess atmospheric concentrations of greenhouse gases.

Forestry and agriculture play a significant role in sequestering atmospheric carbon and economic analysis shows these strategies to be cost-effective. With costs of \$2-\$20 per ton of carbon, domestic forest conservation and management strategies achieve not only greenhouse gas mitigation but, a host of other environmental benefits such as protection of watersheds, water supplies, and critical wildlife and fish habitat, increased soil conservation, and reduction of storm water runoff and landslides.

Unfortunately, ambiguous language in the Kyoto Protocol appears to foreclose the highly effective, credible, and low-cost option of reducing carbon dioxide emissions through improved forestry and agricultural management and conservation practices. Without clarifying existing language, the treaty may have unintended negative impacts on vital forest resources and actually increase forest-based carbon emissions, both in this country and abroad. Such incentives are contrary to a number of national policies and international programs such as the Northwest Forest Plan, the Clean Water Act, the Endangered Species Act, the International Tropical Timber Agreement, the Montreal Process, the Gore-Chernomyrdin agreements and the recently convened Intergovernmental Forum on Forests. Consequently, the effectiveness of the treaty can be enhanced by simplifying the language to enable the use of forestry and agricultural practices.

We urge you to promote domestic policy initiatives and seek clarifications to existing Protocol language that would establish comprehensive accounting for forestry and agriculture and enable the issuing of credit for domestic forest and agriculture management and conservation strategies. Furthermore, we recommend directing the Environmental Protection Agency and the Department of Agriculture to help provide standardized methodologies and accounting principles for carbon

sequestration which are key to establishing the credibility of any action undertaken to mitigate excess atmospheric greenhouse gases. To this end, we strongly encourage development of pilot projects investigating the effectiveness of management approaches in selected forests and fields of the United States. As reflected by the sense of the United States Senate and expressed in a Wyden amendment to the FY 1999 Senate Budget Resolution, these elements should be among our initiatives to foster cost-effective and performance-based methodologies to reduce greenhouse gasses.

We appreciate your attention to our call for expanding the role of forests and agriculture in the scientific strategy for mitigating atmospheric greenhouse gases and look forward to working with you on this important matter.

Respectfully,



Senator Ron Wyden



Senator Patrick J. Leahy

USDA's Economic Analysis on Climate Change & Agriculture

USDA's economic analysis concludes that U.S. compliance with the Kyoto Protocol would have a relatively modest impact on agriculture. Even if energy prices were to rise a good deal higher than the Administration projects, the impact on farm income would be far less than what other studies have claimed. Moreover, taking action to mitigate climate change could create opportunities for farmers to supplement their income through sequestering carbon or producing biomass for use in fuels, energy and chemicals.

The Rationale for Taking Action. There is a broad scientific consensus that climate change could lead to serious adverse consequences, such as intense floods and droughts, disease, and rising sea levels. For agriculture, it will likely mean changes in growing seasons, water availability, soil moisture, precipitation, and the incidence of pests. While most studies project that total food production will not be substantially altered, there will be regional and sectoral winners and losers.

Complying with Kyoto would have relatively modest impacts on U.S. agriculture.

The Administration's 1998 analysis of the costs of complying with the Kyoto Protocol found that those costs would be relatively modest if we take advantage of the cost-cutting provisions of the Protocol, such as international trading of emissions permits. Based on the permit price arrived at in that analysis, \$23 per ton of carbon equivalent, the economic impact on agriculture of meeting the U.S. Kyoto target would be relatively small. The U.S. Regional Agricultural Sector Model (USMP) suggests modest declines in production ranging from 0.1 percent for soybeans to 0.9 percent for rice. Moreover, these small declines would be partially offset by increased commodity prices, so net cash returns to farmers would fall by around 0.5 percent. Competitiveness effects would also be minimal. Further, this analysis does not count the potential opportunities for farmers to earn income through sequestering carbon or through the production of biomass that can be used to make fuels, energy, and chemicals.

Even at permit prices far higher than projected by the Administration, the impact on agriculture would be far lower than several recent studies assert. Studies by Sparks (1999) and Francl (1997) use emission permit prices that do not take into account the key cost-cutting mechanisms in the Kyoto Protocol, such as international permit trading. The USMP, however, finds that even at these high permit prices, declines in farm production and income would be a fraction of those estimated by these studies. This is because the Sparks and Francl studies employ analytical techniques that assume farmers fail to respond to changes in production costs, leading to a substantial overstatement of the impacts of reducing greenhouse gas emissions.

Addressing climate change could create substantial economic opportunities for farmers. Because the Kyoto Protocol includes certain so-called "sink" activities that

store or sequester carbon, such as planting trees, farmers may be able to supplement their income by sequestering carbon through improved conservation practices or converting marginal agricultural lands to forests. Bioenergy – using trees, crops, and agricultural wastes to produce power, fuels or chemicals – also represents a potentially significant opportunity both to reduce net emissions and supplement farm income.

BUSINESS

By Dan Looker, Business Editor

I felt sorry for Farm Bureau economist Terry Francel. He spoke at the National Forum for Agriculture last month at Iowa State University, where the topic was "Climate Change and the Implications for Agriculture and Energy." He disagreed with scientists who believe the earth is heating up from global warming caused by burning fossil fuels. Francel said trying to slow global warming with a tax on fuels would hurt agriculture by increasing farm production costs.

For that, Francel was attacked by another speaker, a British member of the European Parliament, Thomas Spencer. Besides being an authority on global warming, Spencer helped start an academic think tank in Oxford, England, that studies lobbying.

Farm Bureau is being used by the energy lobby in the U.S. to keep this country from fighting global warming, Spencer said. And it's using a proven lobbyist's ploy — confuse people about the science of climate change. If that fails, call for studies.

"If you [Farm Bureau] win as a lobby, the losers will be the USA and the primary victims will be farmers," he said.

The biggest opportunity for agriculture

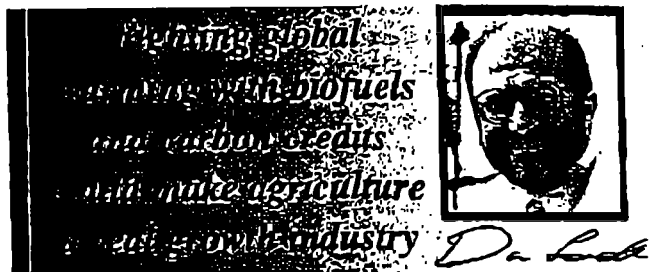
Attacking Francel by name seems crass if you're not used to rough British parliamentary debate. But I have to admit that I think Spencer is right. Farm Bureau does a lot of good things for its members, but on this issue they're tragically behind the curve, working more for your suppliers than for you.

The rest of the world finds evidence of warming convincing already. Europeans worry about millions of refugees displaced by melting polar ice caps and rising oceans (that could cover most of Florida).

"You have to be preparing for big ethanol, for renewable fuels of all kinds — now!" Spencer said in Ames.

So what if the scientists are wrong on the details of global warming? Worldwide interest in fighting warming sounds like a great opportunity for farmers, not a threat.

The size of the opportunity is astounding. The fight against global warming is more than a bigger market



for ethanol, soy diesel and other bio-fuels. It could answer a question I heard from a Minnesota farmer at a meeting to start a farmer-driven set-aside to push up corn prices. He liked the idea, but wished he could plant something besides corn or beans on "idle" acres. "There's no doubt that we need a third crop up here, but what is it?" he asked.

How you'll grow a brand new crop

Walk outside to your nearest field. You'll be standing on the next miracle crop. It's soil humus. Humus is full of carbon. We've lost humus, or soil organic matter, in the last 200 years. Rebuilding it can recapture the carbon in carbon dioxide that comes from burning fossil fuels. Carbon dioxide is a greenhouse gas that traps the sun's energy in the atmosphere and may drive global warming. In the next century, you could be paid for building up soil humus — with no-till, rotational grazing, or new CRP programs.

The problem of global warming is so big that we can't possibly raise enough biofuels or capture enough carbon in soil humus to solve it. A market that big sounds like good news to me.

Influential farm state members of Congress are already looking at building up soil carbon as part of the next Farm Bill. And some groups are out in front promoting a "carbon-based" farm policy.

Dan Specht, a McGregor, Iowa, producer, recently went to Washington for Minnesota's Land Stewardship Project (LSP) to explain his rotational grazing system. "It's raising soil organic matter," he says. LSP is part of the Sustainable Agriculture Coalition. If you want to help them make agriculture a growth industry again, call them at 202/547-5754. **EW**

BUSINESS Highlights

Side by Side:
Strategic planning guides . . . 24

SUCCESSFUL FARMING, APRIL 1999

To	Bill Menner	From	OSG
Subject	SPDC	Co	DNR
Phone #	243-5941	Phone #	261-5234
Fax #		Fax #	261-6994
Date	7/671	Date	
Post-it Fax Note		Pages	1 of 1

were selected by the IPCC, of which 5 had previously been nominated by the U.S. government to a list of FCCC experts. American scientists and experts constitute nearly a third of the authors, far more than any other nationality.

In September 1998, the IPCC held an experts scoping meeting in Rome and developed a proposed outline for the LUCF Special Report. The IPCC's 14th plenary session was held in Vienna following the scoping meeting in Rome, where the governmental representatives approved the terms of reference and the work plan for the LUCF report.

An authors' meeting in Geneva was held recently in Geneva to further refine the outline and to discuss schedules. The next plenary meeting of the IPCC will be in April in Costa Rica.

SBSTA Workshops

As noted above, SBSTA is holding its own separate workshops on Articles 3.3 and 3.4 of the Kyoto Protocol. The SBSTA workshops are intended to give the governmental representatives of SBSTA a broader view of the policy issues associated with the scientific and technical issues surrounding terrestrial sinks and to help IPCC representatives understand the policy context of their work. The first SBSTA workshop on Article 3.3 was held in Rome in late September 1998; the next, on Article 3.4, is scheduled in April in Indianapolis.

IPCC Background

The IPCC: History and Purpose

The Intergovernmental Panel on Climate Change (IPCC) was established in 1988 by the World Meteorological Organization (WMO) and the United Nations Environment Program (UNEP) to assess the available scientific, technical, and socio-economic information in the field of climate change.

The IPCC works at two related levels: as a formal intergovernmental body, and as a scientific and technical assessment body. Approximately 120 governments that belong either to WMO or UNEP currently participate in the IPCC process. The governmental delegates elect the IPCC Chair and Bureau Members, approve the terms of reference of IPCC reports, workshops and expert meetings, “accept” Working Group Reports and “approve” Summaries for Policymakers. The scientific and technical experts meet in Working Groups to draft reports, and hundreds of other scientists are involved in contributing to and reviewing those draft reports before they are submitted for governmental acceptance and approval. (The structure and governance of the IPCC is described in Attachment 1.)

The IPCC is an independent intergovernmental body and separate from the Framework Convention on Climate Change (FCCC). The IPCC can and does prepare reports on its own, and all of its reports are approved by the IPCC itself. However, the FCCC -- usually through the FCCC’s Subsidiary Body for Scientific and Technological Advice -- often turns to the IPCC for its scientific and technical expertise in climate change.

IPCC Reports

One of the IPCC's major roles is to prepare comprehensive periodic assessments of scientific knowledge on climate change, as well as to prepare special reports and technical papers. A list of IPCC Assessments, Special Reports, and Technical Papers is attached as Attachment 2.

The IPCC has adopted rules and procedures for the drafting and review of all of its reports, in order to ensure that the reports reflect the best available scientific and technical information. Recognizing the complexity and broad scope of the climate change issue as well as the potential for controversy, the IPCC process was developed around a set of principles meant to ensure accuracy and wide acceptance of its reports. These principles include:

- Openness and transparency: Making draft reports freely and publicly available to experts and stakeholders for review and comment.
- Comprehensiveness: Providing information on all aspects of the climate change issue.
- Inclusiveness: Assessing the full range of scientifically-grounded views, establishing consensus when possible, highlighting scientific disagreements when contradictory evidence cannot be reconciled, and characterizing uncertainties.

- Policy relevance and neutrality: Presenting information relevant to decisionmakers without making policy recommendations.

Report Process

To ensure that the above principles are met, the IPCC report drafting and approval process is complex and lengthy. Typically, reports are assigned to one of three “standing” Working Groups. (See Attachment 1.) The typical report process consists of the following steps: 1) identification and selection of report authors and contributors; 2) drafting of the technical sections of the report; 3) initial review of the technical drafts by scientists and experts, followed by revisions as needed; 4) a review of the technical materials by governmental representatives and a second expert review; 5) acceptance of the technical reports in a Working Group plenary session; 6) drafting of a “Summary for Policymakers” – a summary of the most policy-relevant conclusions from the technical chapters – by the IPCC and lead authors, followed by a line-by-line approval by governmental representatives at a full IPCC plenary. A more detailed description of the report process is set out in Attachment 3.

The LUCF report

In 1998, at its eighth session, SBSTA requested the IPCC to prepare a special report on land-use, land-use change and forestry to provide technical and scientific assistance to its policymaking role relating to articles 3.3. and 3.4 of the Kyoto Protocol. (The SBSTA charge to the IPCC is set out in Attachment 4.) The IPCC’s goal is to have the report approved for the SBSTA session prior to the Conference of the Parties scheduled in November 2000 so that the parties can use the report in making decisions on articles 3.3 and 3.4.

Following informal consultations with governmental representatives on the IPCC, the Chair of the IPCC determined that the LUCF Special Report would require a process that departed from the usual procedure of delegating the initial report preparation to a Working Group because the LUCF report would cut across issues in all three Working Groups. Under this procedure, the Chair of the IPCC would himself chair the report along with a Bureau (i.e., executive committee) consisting of the two co-chairs of each of the working groups. Because of the importance of the Report, the prior Chair of the IPCC, Bert Bolin, along with two other experts, have been appointed as “Report Coordinators” to oversee analysis, content and process. The Bureau approves the coordinating lead authors and lead authors. (See Attachment 3.) When completed, the report will be submitted to the full IPCC – not just a working group – for acceptance, and the full IPCC will approve the Summary for Policy Makers line-by-line.

Prior to the IPCC plenary in September 1998, the IPCC solicited nominations for coordinating lead authors and lead authors. USDA and other U.S. agencies solicited and prepared nominations for authors for the U.S. government to submit to the IPCC. The U.S. nominated 39 authors. Of the 39, 16 were from U.S. federal agencies, 4 were from industry, two were from nonprofit institutes or foundations, and 17 were from universities.

Of those 39, sixteen have been selected by the IPCC to serve either as the Lead Author or the Convening Lead Author. Eight other U.S. scientists or experts not nominated by the U.S.

Attachment 1

STRUCTURE OF THE IPCC

A Chairman, who is elected by the Panel in plenary session – that is, by the governmental representatives that serve on the IPCC, heads the IPCC. The Panel also elects the IPCC Bureau, which operates as an Executive Committee. The Bureau includes 5 vice-chairs, the co-chairs of the three Working Groups (see below) and regional representatives. Presently, the Chair of the IPCC is Bob Watson, an American scientist who previously worked at NASA and in the White House Office of Science and Technology Policy.

The IPCC is also organized into three Working Groups. Working Group I focuses on the scientific aspects of the climate system and climate change; Working Group II assesses the potential impacts of climate change and technical options for adaptation and emissions reduction and sequestration; and Working Group III assesses the social and economic implications of climate change.

IPCC

Dr. Robert Watson, Chair
Dr. N. Sundararaman, Secretary of the IPCC
World Meteorological Organization

Working Group I

Dr. Ding Yihui (China) Co-Chair
Dr. John Houghton (UK) Co-Chair
Dr. David Griggs, Head, Technical Support Unit

Working Group II

Dr. Osvaldo Canziani (Argentina) Co-Chair
Dr. James McCarthy (US) Co-Chair
Dr. Neil Leary, Head, Technical Support Unit

Working Group III

Dr. Ogunlade Davidson (Sierra Leone) Co-Chair
Dr. Bert Metz (Netherlands) Co-Chair
Rob J. Swart, Head, Technical Support Unit

PLENARY

IPCC Bureau

IPCC Chair – R.T. Watson (USA)
Five Vice Chairs
IPCC Secretariat

PLENARY

PLENARY

PLENARY

Working Group I: Scientific Assessment of the Climate System

Bureau
Co-Chair – J.T. Houghton (UK)
Co-Chair – Ding Yihui (China)
Six Vice Chairs
Technical Support Unit (UK)

Working Group II: Impacts and Adaptation

Bureau
Co-Chair – J. McCarthy (USA)
Co-Chair – O. Canziani (Argentina)
Six Vice Chairs
Technical Support Unit (USA)

Working Group III: Mitigation and Cross-Cutting Issues

Bureau
Co-Chair – B. Metz (The Netherlands)
Co-Chair – O. Davidson (Sierra Leone)
Six Vice Chairs
Technical Support Unit (The Netherlands)

EXPERT COMMUNITY

Attachment 3

IPCC REPORTS

Ongoing Activities of the IPCC

At the request of participating governments, IPCC is currently conducting a number of Special Reports and other activities:

- *Special Report on Methodological and Technological Issues in Technology Transfer.* This report will examine the role of governments, international organizations, and the private sector in diffusion of technology for adaptation to and mitigation of climate change. The approximately 200-page report will analyze previous experience with technology transfer and options for accelerating diffusion of climate-friendly technology. The report is expected to be completed by late 1999 and is being prepared under the auspices of Working Groups II and III.
- *Special Report on Aviation and the Global Atmosphere.* The report will provide an overview of recent research on the potential effects of aircraft emissions on atmospheric composition and climate change, and will include discussion of potential technology and management options for reducing emissions, including potential tradeoffs between reduced NO_x and increased CO₂ emissions. Responsibility for preparing this Special Report is shared between Working Groups I and II. The report is expected to be completed by early 1999.
- *Special Report on Emissions Scenarios.* This report will assess changes in our understanding of the factors affecting greenhouse gas emissions at regional and global scales, and will revise the IPCC emissions scenarios. The report is led by Working Group III and is expected to be completed in 1999.
- *Climate Scenario Task Force.* This activity, conducted under the auspices of Working Group I and II, is compiling an integrated set of emissions and climate scenarios for use in the Third Assessment Report (TAR). A Data Distribution Center is currently under development and is scheduled to be online in mid-1998.
- IPCC Workshops. Recent IPCC workshops include the *Workshop on Adaptation to Climate Variability and Change* (29 March - 1 April 1998 in San Jose, Costa Rica) and the *Workshop on Rapid Non-linear Climate Change* (31 March - 2 April 1998 in Noordwijkerhout, The Netherlands). Brief reports describing the workshops are available from Working Group I (Rapid Non-linear change) and Working Group II (Adaptation).

The Third Assessment Report

The IPCC's Third Assessment Report (TAR) will cover the complete range of scientific, technical, economic, and social issues associated with the climate system and climate change deemed important by the expert or policy-making communities. The TAR will primarily assess information generated since the Second Assessment Report and will emphasize the assessment of the regional aspects of climate change. Working Group I will focus on the scientific aspects of the climate system and climate change. Working Group II will assess the scientific, technical, environmental, economic, and social aspects of the vulnerability of ecological systems, socio-economic sectors, and human health to climate change. Working Group III will assess the scientific, technical, environmental, economic, and social aspects of the mitigation of climate change, and the Synthesis Report will provide a policy-relevant synthesis and integration of the three Working Group reports. The author nomination process is now underway. The three Working Group reports should be approved/accepted by late 2000/ early 2001; the Synthesis Report should be completed during the second quarter of the year 2001.

Completed Reports and Projects

Reports

The Regional Impacts of Climate Change: An Assessment of Vulnerability.

Intergovernmental Panel on Climate Change, Working Group II Special Report (eds R.T. Watson, M.C. Zinyowera, and R.H. Moss), 1998. 518 pp.

The Regional Impacts of Climate Change: Summary for Policymakers (SPM).

Technologies, Policies, and Measures for Mitigating Climate Change: IPCC

Technical Paper 1. Intergovernmental Panel on Climate Change, Working Group II (eds. R.T. Watson, M.C. Zinyowera, and R.H. Moss), 1996.

Technical Paper II: An Introduction to Simple Climate Models Used in the IPCC Second Assessment Report. Intergovernmental Panel on Climate Change, Working Group I. February 1997.

Technical Paper III: Stabilization of Atmospheric Greenhouse Gases: Physical, Biological and Socio-Economic Implications. Intergovernmental Panel on Climate Change, Working Group I. February 1997.

Technical Paper IV: Implications of Proposed CO₂ Emissions Limitations. Intergovernmental Panel on Climate Change, Working Group I. October 1997.

Climate Change 1995: The Science of Climate Change. Contribution of Working Group I to the Second Assessment Report of the Intergovernmental Panel on Climate Change.

Climate Change 1995: Impacts, Adaptations and Mitigation of Climate Change: Scientific-Technical Analyses. Contribution of Working Group II to the Second Assessment Report of the Intergovernmental Panel on Climate Change.

Climate Change 1995: Economic and Social Dimensions of Climate Change. Contribution of Working Group III to the Second Assessment Report of the Intergovernmental Panel on Climate Change.

Climate Change 1994: Radiative Forcing of Climate Change and an Evaluation of the IPCC IS92 Emission Scenarios (Eds. J. T. Houghton, L. G. Meira Filho, J. P. Bruce, Hoesung Lee, Bruce T. Callander, E. F. Haites, N. Harris, K. Maskell.), 339 pp.

The **Summaries for Policymakers and the Technical Summary** are also available in Arabic, Chinese, French, Spanish, and Russian.

Preparing to Meet the Coastal Challenges of the 21st Century, Conference Report of the World Coast Conference, 1993.

Climate Change 1992: The Supplementary Report to the IPCC Scientific Assessment. Report of the IPCC Scientific Assessment Working Group (Working Group I) (Eds. J.T. Houghton, B.T. Callander, and S.K. Varney), 200 pp.

Climate Change 1992: The Supplementary Report to the IPCC Impacts Assessment. Report of the IPCC Impacts Assessment Working Group (WGII).

Global Climate Change and the Rising Challenge of the Sea. Report of the Coastal Zone Management Subgroup of the IPCC Response Strategies Working Group (Working Group III), 1992.

Proceedings of a Workshop on Assessing Technologies and Management Systems for Agriculture and Forestry in Relation to Global Climate Change, Canberra, 1992.

Climate Change: The IPCC 1990 and 1992 Assessments. IPCC First Assessment Report Overview and Policymaker Summaries, and 1992 IPCC Supplement.

Climate Change: The IPCC Scientific Assessment, 1990. Report of the IPCC Scientific Assessment Working Group (Working Group I). (Eds. J.T. Houghton, G.J. Jenkins, J.J. Ephraums), 365 pp.

Climate Change: The IPCC Response Strategies, 1990. Report of the IPCC Response Strategies Working Group (Working Group III). 273 pp.

Observed Climate Variations and Change: Contribution in Support of Section 7 of the 1990 IPCC Scientific Assessment, 1990.

Strategies for Adaption to Sea Level Rise: Report of the Coastal Zone Management Subgroup of the IPCC Response Strategies Working Group (Working Group III), 1990.

Methodologies

IPCC Technical Guidelines for Assessing Climate Change Impacts and Adaptations, 1994, 59 pp.

Carbon Balance of World Forested Ecosystems: Toward a Global Assessment

IPCC Guidelines for National Greenhouse Gas Inventories (3 volumes), 1994

Preliminary Guidelines for Assessing Impacts of Climate Change, 1992. IPCC Working Group II.

Assessment of the Vulnerability of Coastal Areas to Sea Level Rise - A Common Methodology. Report of the Coastal Zone Management Subgroup of IPCC Working Group III, 1991

Compilation of References to the Spectroscopic Database for Greenhouse Gases. Prepared for IPCC Working Group I by Nicole Husson, France, 1991.

Attachment 3

IPCC REPORT PREPARATION AND APPROVAL PROCESS

1. Compilation of lists of lead authors, contributors, expert reviewers, and government contacts. The chair of the relevant IPCC Working Group requests all countries and participating organizations to identify appropriate experts, who can act as potential coordinating lead authors, lead authors, contributors, or reviewers.

- Coordinating lead authors have the overall responsibility for coordinating major sections of a report; lead authors work with the coordinating lead author to draft sections of the report, drawing on the scientific literature. The IPCC selects CLAs and LAs from those nominations as well as from list of experts developed by the FCCC. CLAs and LAs are selected by the IPCC for their expertise and willingness to devote the required significant time on the report, taking into account the need to ensure that the group of Lead Authors reflects a fair balance among points of view.
- Contributing Authors prepare technical information for use by the Lead Authors into the draft sections of the report. Contributions to the report are broadly solicited. Lead authors can solicit Contributing Authors, but, as noted in the IPCC procedures, “unprompted contributions are encouraged.”. Any expert can contribute so long as the basis for his/her contribution is a peer-reviewed scientific article. Depending on the nature of the report, hundreds of Contributing Authors might be involved.

2. Drafting of Technical Materials of the Report. The chapters of the reports -- technical in nature -- are prepared by scientists and researchers, acting as lead authors, based on information openly available in the scientific literature and supplied by contributing authors.

3. Drafting of Summary for Policymakers. The “Summaries for Policymakers” present the most policy-relevant conclusions from the technical chapters. They are drafted jointly by the governmental representatives and expert lead authors -- whose participation ensures consistency between the Summaries and the underlying technical chapters.

4. Review. Drafts go through a two-stage review process. The first stage is an expert review. For the large Assessments, hundreds of outside scientists can be involved in the initial expert review. Expert reviewers review the draft text based on their own expertise and can be nominated by governments, national and international organizations, the IPCC Bureaus, or by Lead Authors or Contributing Authors. After the initial expert review, the drafts are revised and distributed for simultaneous government and a second expert review. Normally the review period is six weeks but no less than a month. Governments may use their own mechanisms to ensure outside expert review of the draft report. “Review Editors” ensure that all review comments are dealt with objectively.

5. Acceptance and Approval. Each Summary for Policymakers is “approved” by governments on a line-by-line basis. The lead authors participate in the meetings to approve the Summaries to ensure that any changes are consistent with the findings of the chapters and that the information is balanced. Underlying technical chapters are “accepted” by the Panel if they are judged to have been prepared according to IPCC procedures and represent a balanced assessment of the state of knowledge.

Attachment 4

SBSTA Charge to the IPCC: LUCF Special Report

FCCC/SBSTA/1998/6

12 August 1998

45 (e). The SBSTA requested the IPCC to prepare and provide information to the SBSTA and the COP, in particular a special report as defined by IPCC procedures, on land-use, land-use change and forestry, in order to enable the COP to take decisions on recommendations on these issues to the COP/MOP at its first session. The special report should address the methodological, scientific and technical implications of the relevant articles of the Protocol, particularly Article 3. The special report should consider the anthropogenic implications of full carbon stock accounting, set the overall scientific context for consideration of land-use, land-use change and forestry activities, and consider the initial list of scientific and technical questions contained in FCCC/SBSTA/1998/INF.1 as well as comments to be provided by the Parties to the secretariat by 15 August 1998;

(f) The SBSTA requested the IPCC to examine, to the extent possible, the scientific and technical implications of carbon sequestration activities related to land-use, land-use change and forestry activities for water, soils, biodiversity, and other environmental and socio-economic effects, to be included in the special report as appropriate. Other issues not covered in the special report could be included in the Third Assessment Report and in any other relevant IPCC products.

Special Report on Land Use, Land Use Changes, and Forestry
List of Lead Authors (as of 13 January, 1999, 16:14)

Chapter 1: Introduction and Mandate

Robert Watson only current author

Chapter 2: Global Perspectives

1 of 7 authors from U.S. (14%)

1 nominated by USG (as FCCC expert)

U.S. Authors

H. Khesgi

USG nominee; FCCC

Chapter 3: Implications of Different Definitions and Generic Issues

7 of 19 authors from U.S. (37%)

5 nominated by USG

U.S. Authors

Donald Goldberg

Richard Houghton

USG nominee; FORESTS

Anthony Janetos

USG nominee; FORESTS

William Schlesinger

USG nominee; FORESTS

David Skole

USG nominee; FORESTS

Daniel Lashof

Brian Murray

USG nominee; FORESTS

Chapter 4: Afforestation, Reforestation, and Deforestation Activities—Article 3.3

3 of 16 authors from U.S. (19%)

3 nominated by USG (2 for this report, 1 for FCCC)

U.S. Authors

Richard Birdsey

USG nominee; FORESTS

Steven P. Hamburg

USG nominee; FCCC

Stephen P. Prisley

USG nominee; FORESTS

Chapter 5: Additional Human-Induced Activities—Article 3.4

7 of 19 authors from U.S. (37%)

7 nominated by USG (2 in forests, 4 in soils, 1 in FCCC)

U.S. Authors

Neil Sampson (CLA)

USG nominee; FORESTS

John Kimble

USG nominee; SOILS

Rattan Lal

USG nominee; SOILS

Greg Marland

USG nominee; FORESTS

Keith Paustian

USG nominee; SOILS

Allen M. Solomon

USG nominee; FCCC

Susan Trumbore

USG nominee; SOILS

Chapter 6: Project Based Activities

5 of 11 authors from U.S. (45%)

5 nominated by USG (3 forests, 2 FCCC)

U.S. Authors

Sandra Brown (CLA)

USG nominee; FORESTS

Jayant Sathaye (CLA)

USG nominee; FORESTS

Ken Andrasko

USG nominee; FORESTS

Paige Brown

USG nominee; FCCC

Peter Frumhoff

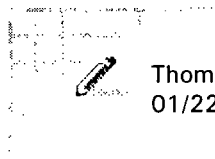
USG nominee; FCCC

Chapter 7: Implications of the Kyoto Protocol for Reporting Guidelines

1 of 8 authors from U.S.

U.S. Authors

Edward Vine



Thomas D. Peterson
01/22/99 12:24:06 PM

Record Type: Record

To: Todd Stern/WHO/EOP, Meagan M. Earley/WHO/EOP
cc: Dirk Forrister/WHCCTF/EOP, Roger S. Ballentine/WHO/EOP, Michael L. Rodemeyer/OSTP/EOP, Julie M. Anderson/WHCCTF/EOP
Subject: weekly

White House and agency staff met with a group of forest activists from New England, the Pacific Northwest, and the Southeast on sinks issues, including upcoming submissions on article 3.4. This grassroots group is in its early stages of formation and just recently focused on climate issues. It is organized by former IN Democratic Rep. Jim Jontz, who heads the American Land Alliance (based in DC).

Key issues for them include:

- a desire to see full carbon accounting for forests that includes effects of logging, site prep, stand conversion and old growth protection - and generally an accounting process that avoids the creation of perverse incentives (which they believe exist under article 3.3)
- reconciliation of top down and bottom up sequestration measurement methods, with strong consideration of applying project based systems to national inventories
- priority for protection of natural forest stands vs. conversion to fast growing plantations
- policies that increase rotation length on all forests
- opposition to increased logging on industrial or public forests in the name of enhanced carbon sequestration
- permanent protection for large forest systems in private ownership; a few timber companies are liquidating millions of acres in the Northeast and Southeast that could be sold and developed for nonforest uses, and they would like the federal government to consider acquisition for parks, recreation and climate friendly management
- joint consideration of biodiversity, watershed and climate needs in forest management and sequestration policies
- focus on natural grasslands as well as forests
- focus on restoration of degraded nonindustrial forest, farm and grasslands
- concern that early action credit does not reward poor industrial land practices

This group was not aware of our climate budget/tax initiative (and got a briefing on it), and is interested in reviewing the fy 2000 package and getting back with reactions and ideas. They had very favorable reaction to the \$6 b green bonds package and the \$1b LWCF package (based on media reports) and would like to work with the administration on these - as well as tax credit ideas for nonindustrial forests. They also were favorable to the administration's overall increase in attention to agriculture and forestry in the climate arena.

RICHARD G. LUGAR
INDIANA

200 HART SENATE OFFICE BUILDING
WASHINGTON, DC 20510
202-224-4914

COMMITTEES
AGRICULTURE, NUTRITION, AND FORESTRY
CHAIRMAN
FOREIGN RELATIONS
SELECT COMMITTEE
ON INTELLIGENCE

United States Senate

WASHINGTON, DC 20510-1401

January 5, 1999

Honorable Dan Glickman
Secretary of Agriculture
200 A Whitten Building
Washington, D.C. 20250

Dear Mr. Secretary:

We wish to offer the following comments on the Administration's initiative to demonstrate the feasibility of enhancing the carbon storage of our nation's agricultural and forest soils.

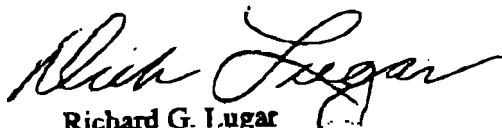
We suggest that the implementation of this initiative be limited to a few established agricultural conservation programs, such as the Conservation Reserve Program (CRP), the Environmental Water Quality Initiative (EQIP) and Conservation Technical Assistance (CTA). Furthermore, the importance of the State and Private Forestry Programs of the USDA Forest Service should not be lost sight of in view of the fact that only 20% of our nation's nonindustrial private forest land is under any sort of management plan. ✓

Our concern is that the numbers of programs involved in the carbon storage initiative be restrained so that the initiative can be well coordinated and its results documented. We also believe that the initiative should focus on programs that also offer water quality, soil retention and other environmental benefits. This would underscore the point that improving the carbon storage content of our agricultural and forest soils is yet another benefit of many existing agricultural and forest conservation programs, which are also justified on their own terms. And soils whose carbon content is enhanced will be more productive in the future, thus addressing the emerging crisis in world food supplies occasioned by a growing and more prosperous world population.

With 30 million acres enrolled in the CRP, this program is already an excellent mechanism for enhancing carbon sequestration. We urge you to review the CRP continuous sign up to allow the sequestration of carbon to be part of the enrollment criteria. Additional tree planting on CRP acreage could also add permanent value to the potential of CRP to store carbon.

We appreciate your consideration of these suggestions and we look forward to working with you as you develop this important initiative.

Sincerely,



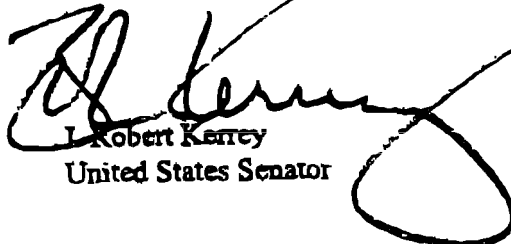
Richard G. Lugar
United States Senator



Tom Harkin
United States Senator



Pat Roberts
United States Senator

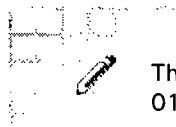


J. Robert Kerry
United States Senator



Ron Wyden
United States Senator

cc: Honorable Richard Rominger, Deputy Secretary of Agriculture
Honorable Stuart Eizenstat, Under Secretary of State for Economic,
Business, and Agricultural Affairs



Thomas D. Peterson
01/06/99 05:26:02 PM

Record Type: Record

To: Todd Stern/WHO/EOP

cc: Roger S. Ballentine/WHO/EOP, Dirk Forrister/WHCCTF/EOP, Julie M. Anderson/WHCCTF/EOP

Subject: afforestation tax credit

The status of this is as follows:

Gerri and her staffer Laura are talking with Len now about it and will be getting back to you/us following that conversation (if not we should check in). Gerri and Laura seemed OK with the proposal - no killer objections. The Forest Service is highly supportive. The main questions raised by Treasury are:

- can we certify projects cost effectively - FS says yes at five acres and above (FIP has a minimum 10 acre limit, and SIP has no minimum)
- what is the additional budget burden for certification of projects - FS says \$1.5 million under the highest case scenario. Linda Delagado would need to approve this obligation. It would be distributed under the existing cooperative agreement to 50 state Forestry Departments who do the federal certifications. Gerri felt this was a relatively low expense, provided USDA approves.
- does the 10 percent cost share stimulate enough tree planting - FS thinks it should be raised to 50 percent but can't predict response precisely. Gerri thinks we should focus on this percentage number - too low it doesn't do enough to make program worth it. She's concerned about lack of good scoring numbers on a higher level, but overall this program is probably not a big one.
- what should the minimum acreage (of tree planting) cutoff be - Gerri thinks 10 acres to keep out suburban acreages, FS thinks 5 to pull in forest lands in North East. If we want urban forests in we need to go much lower. If the minimum is too high we'll keep a lot of available rural land out of this - a five acre afforestation project is actually very large according to FS, and it may take more than one year to complete (an acre is the size of a football field - labor cost is significant).

My take is that the politics are very good to do a version of this, and very bad to do nothing. The analytics on scoring will be fuzzy, but the overall highest-case numbers aren't going to be an issue given the levels we've been willing to play with. An overly restrictive program may not look sincere - I'd at least go for the middle of the road if not a higher level. I think this could sell very well. Most of the land will be degraded farm land and flood plains that isn't in any other program - a good target. I think our weakest link on this is the predictive research on landowner behavior, but it's not an empty box by any means. We have a good grip on the number, size and location of these potential lands, and can make some reasonable guesses on response to guide us.

If Len reacts unfavorably, I think we should get a very clear picture on his objections and consider an appeal. Please let me know if this turns south - I'm willing to work it through.



Thomas D. Peterson
01/06/99 03:20:15 PM

Record Type: Record

To: Todd Stern/WHO/EOP

cc: Dirk Forrister/WHCCTF/EOP, Julie M. Anderson/WHCCTF/EOP, Roger S. Ballentine/WHO/EOP

Subject: afforestation tax credit

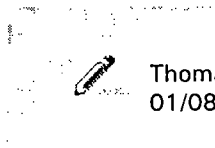
I have made a proposal to Gerri Gerardi that we are vetting thru Treasury and Forest Service today, as follows:

expand the existing \$10k reforestation tax credit as follows:

- expand to include noncommercial forest uses (deals with the corporate welfare and additionality issues)
- expand to include nonindustrial forest landowners (also deals with the corporate welfare and additionality issues)
- limit to afforestation (bare land - deals with the additionality issue and the perverse incentive to reforest natural stands to pine monoculture; requires certification by State Service Foresters who are under cooperative agreement with USDA and already responsible for certifying the federal Forestry Incentives Program and Stewardship Incentives Program to private nonindustrial forest landowners)
- limit to a minimum acreage or number of trees (eliminates backyard operations and tailors to the available funding - data to be provided by FS/Bob Moulton ASAP)

Gerri's initial reaction is favorable pending further discussions on scoring and the certification procedure. The size of the overall credit can be set by adjusting the minimum acreage size and years. The afforestation limitation steers most of this to marginal farmland (farmers), trashed out floodplains (large cobenefits), and other abandoned lands where the carbon benefits are clearest and highest. So far, no one has shot this out of the saddle. We'll keep you posted.

Any reactions?



Thomas D. Peterson
01/08/99 02:45:51 PM

Record Type: Record

To: Todd Stern/WHO/EOP
cc: Dirk Forrister/WHCCTF/EOP, Julie M. Anderson/WHCCTF/EOP, Roger S. Ballentine/WHO/EOP, John D. Gibson/WHCCTF/EOP
Subject: sinks letter from 5 senators

I just received a letter from Lugar, Roberts, Wyden, Kerrey and Harkin to Glickman on sinks and fy 2000 budget that is being forwarded to you. It suggests that we focus on a couple of key ag programs for sinks incentives (CRP, EQIP, CTA -- we do a good job of this in our 2000 proposal) and that we focus on state and private forestry programs that serve private nonindustrial forest landowners (FIP, SIP, Forest Legacy - we don't do much above baseline and don't have a great story). This is the first time that the group beyond Wyden has indicated a need to focus on state and private forestry for climate - altho this is consistent with past positions the group, plus Lehy, have had in budget debates.

This latter point underscores the need, perhaps, to look at ways to get new money into forest conservation/sequestration on PNFL's. We can do so by: 1) using some of the \$7 OMB/USDA skim for SIP or Forest Legacy; 2) putting in an afforestation tax credit formulation that works (at least a 50% cost share up to \$10,000), or 3) both.

I have askekd Margo to get back with me about the fy 2000 numbers on FIP, SIP and Forest Legacy. Let me know what additional actions are needed.



Thomas D. Peterson
12/17/98 01:23:06 PM

Record Type: Record

To: Todd Stern/WHO/EOP, Roger S. Ballentine/WHO/EOP, David B Sandalow/CEQ/EOP, Rosina M. Bierbaum/OSTP/EOP

cc: Dirk Forrister/WHCCTF/EOP, Julie M. Anderson/WHCCTF/EOP

Subject: sinks alert

I've just received three calls from Senate ag staff who are in receipt of the IPCC special sinks report outline and authors list. They are upset with it in several ways and are in the process of calling at the White House level. Expect calls from Kerrey, Roberts, possibly Harkin offices today. I have talked with all but Roberts and asked them to: direct calls to Roger B. first; that we are aware of the concerns and working on it; please hold off drastic action while we work on this.

We should talk thru the issues, which include:

Concern: IPCC process on sinks lacks credibility and will result in negative outcome on future negotiations - **Answer:** USG strongly supports IPCC special reports on sinks and is confident it can support negotiations in an objective and helpful manner. We also support improvements to the current process, which is in its very early stages. ?

Concern: about half the "US" authors were not nominated by USG and came from other sources - **Answer:** IPCC makes selections independently and not necessarily from government recommendations. USG is aware of concerns with "US" author list and proposing additional nominations. ?

Concern: USG is funding authors who oppose its policies and goals, and whom it did not nominate. - **Answer:** USG has some discretion over funding of authors, particularly those it did not nominate. Nonetheless, we fund this exercise both generally and specifically so funding requests will be/have been made for "US" authors.

Concern: anti sequestration bias of two NGO reps - **Answer:** USG did not nominate these reps and is proposing additional nominations to provide balance.

Concern: failure to select key USG nominations - **Answer:** USG nominated a strong group but is not in control of final selections or other, independent nominations by IPCC. USG is working with IPCC on additional nominations, including Birdsey, Kimble, Lal.

Concern: lack of industry representation - **Answer:** USG is working with IPCC on additional nominations, and we are aware that Neil Sampson is not an industry rep.

Concern: lack of NGO/Industry representation on each chapter of the report - **Answer:** USG not in control of the outline but recommending additional authors to improve NGO/industry representation throughout the report.

Concern: IPCC special report is short on ag experts. - **Answer:** USG is working with IPCC on additional nominations, including John Kimble and Rattan Lal.

Debbie & Stephanie

- too weighted toward forestry
- not enough applied scientists in soils field
- too many people disposed against sequestration
 - Lashof
 - Bill Schlesinger

FAX FROM:



GLOBAL CHANGE PROGRAM OFFICE

To:

Tom Peterson

From:

Margot

Fax Number:

395 - 2311

Message:

As requested

Phone: (202) 720-1977

Fax: (202) 401-1176

manderson@oce.usda.gov

jgraham@oce.usda.gov

USDA/OCE/GCPO
1400 Independence Avenue, S.W.
STOP 3814
Washington, D.C. 20250-3814

10/1

At our (EPA, USOA) meeting
on Monday with State we
argued that State needs to
push (request) Wabon to add

- | | | |
|---|---------------------|----------|
| ① | R. Bindsey (FS) | Chapt 4 |
| ② | J. Kimble (NRES) | " 5 |
| ③ | Forest Products Rep | " 5 |
| ④ | B. Murray | " 3 |
| ⑤ | R. Lal | ANYWHERE |

Dan R. knows about this via

Jean

August



United States Department of State
Bureau of Oceans and International Environmental and Scientific Affairs
Office of Global Change OBS/EGC - Rm. 4330
2201 C St. NW
Washington, D.C. 20520

FAX TO: Ad Hoc LUCF Nomination Group

NAME:	FAX:
Bill Hohenstein (EPA)	260-6405
Heather Huppe (USAID)	216-3174
Bill Breed (DOE)	586-4763
Larry Campbell (DOC)	482-0325
Margot Anderson (USDA)	401-1176
Adele Morris (Treasury)	622-1294
Ann Kinzig (OSTP)	456-6025
Ken Andrasko (EPA)	260-6405

NUMBER OF PAGES, INCLUDING THIS PAGE 5

FROM: Jean Brennan
OFFICE OF GLOBAL CHANGE OBS/EGC
TEL: (202) 647-4069
FAX: (202) 647-0191

.....
Please attend a meeting to discuss the USG nominations for authors on the IPCC Special Report on LUCF. Apparently the IPCC is willing to include more American as co-authors. We need to review our initial nomination list and, based on the preliminary list of authors, we must resubmit our nominations.

The preliminary list of invited authors has been prepared by Bob Watson's office and is attached. Please review this list. (Also, please limit the redistribution of this list since it is preliminary.) I am also attaching a copy of the final copy of the list of nominations the USG. (This copy was sent to you on Nov 27th.)

MEETING: on Monday Dec 14th from 3:15 - 4 pm, at State, room 3519

(I will prepare our official reply immediately following this meeting. So if you can not attend please fax me your comments and I will distribute these in the meeting.)
.....

DEC-11-1998 13:37

202 647 0191

007

0 21

**IPCC Special Report
Land Use, Land Use Change and Forestry**

List of CLAs and LAs

Chair: R. Watson
Report Coordinators: B. Bolin (Sweden), I. Noble (Australia), N. Ravinandhrath (India)

Chapter 1: Introduction and Mandate (2 pages)
CLA R. Watson

Chapter 2: Global Perspective (10 pages)
CLA B. Bolin (Sweden), Sukumar (India)

LA W. Cramer (Germany), W. Steffen (Australia), P. Jarvis (UK):
P. Ciais (France), H. Khosravi (US), S. Saemenev

Chapter 3: Implications of Different Definitions and Generic Issues (30 pages)
CLA I. Noble (Australia), M. Apps (Canada), W. Makundi (Tanzania)

CLA (Defin) W. Sombroek (Netherlands), R. Persson (Sweden)
LA (Defin) H. Gyde Lund (US), M. Amano (Japan), D. Goldberg (US),
A. Shvidenko (Russia)

CLA (Methods) R. Houghton (US), R. Valentini (Italy)
LA (Methods) D. Skole (US), T. Janetos (US), G. Nabuurs (Netherlands),
W. Schlesinger (US), N. Higuchi (Brazil)

CLA (Account) D. Lashof (US), D. Murdiyaro (Indonesia)
LA (Account) P. Fearnside (Brazil)

Chapter 4: Afforestation, Reforestation and Deforestation Activities—Article 1.3 (25 pages)
CLA

B. Schlamadinger (Austria), T. Kujalainen (Finland)

LA D. Schulze (Germany), Y. Yamagata (Japan),

Woods Hole

Scientist

NASA

DOKE

enviro

balanced, respected

academic
→ balanced.

S. Hamburg (US), S. Nilsson (Sweden), M. Cannel (UK),
M. Kirshoosum (Australia), W. Kurz (Canada),
T.P. Singh (India), B. Jallow (Gambia)

Chapter 5: Additional Human-Induced Activities - Article 3.4 (10 pages)

CLA

B. Scholes (S. Africa), N. Sampson (US)

from enviro group, but
maybe pro-industry.

LA

Academic

P. Forst (Zimbabwe), D. Hall (UK), K. Minami (Japan),
M. Honda (Japan), P. Sanchez (Kenya), S. Trumbore (US),
A. Solomon (US), M. Howden (Australia),
B. Solberg (Norway), L. Brda (China), G. Merland (US),
P. Reed (New Zealand), D. Xu (China),
O. Van Cleemput (Belgium), K. Paustian (US)

academic

Chapter 6: Project Based Activities (10 pages)

CLA

S. Brown (US), J. Bathayr (US), O. Masera (Mexico)

Berkely

LA

B. Tipper (UK), P. Moura Costa (Brazil),
S. Halloy (New Zealand), B. Lasco (Philippines),
P. Frumhoff (US), G. Philips (UK), P. Brown (US)

Nature Conservancy

UCS

Chapter 7: Implications of the Kyoto Protocol for the Reporting Guidelines (10 pages)

CLA

N. Ravindranath (India), G. Farquhar (Australia), B. Lim (UK)

LA

G. Inoue (Japan), Y. Sokona (Senegal), A. Kokorin (Russia),
J. Ford-Robertson (New Zealand), P. Frost (Zimbabwe),
E. Vins (US)

?

Winnick
Int'l
(?)

USG Nominations for IPCC Special Report on Land Use, Land Use Change and Forestry

Name Affiliation

Soil Carbon

Government

Ron Follett	USDA, ARS
Bruce Kimble	USDA, ARS
John Kimble	USDA, NRCS
Keith Paustian	USDA, NRCS
David Schimel	NCAR

University

Eric Davidson	Woods Hole Research Center
Eric Fernandez	Cornell University
Sarah Hobbie	University of Minnesota
Rattan Lal	Ohio State University
Jerry Melillo	Marine Biological Lab
William Schlesinger	Duke
Sue Trumbore	University of California

27-Nov-98

Page 2 of 2

TOTAL P.05
TOTAL P.07

Memo

To: Roger
From: Tom
Re: Senate ag feedback on ag/forestry climate budgets
Date: 11/5/98

Concerns with FY 99 submission by USDA:

- \$10 m CCTI amount too small relative to overall request; signifies low priority and lack of willingness to provide incentives
- current research funding is not implementation oriented; basic research phase needs to evolve quickly and proactively into policy and program support
- current funding lacks demos and pilots for sequestration and bioenergy
- FY 99 budget not a product of dialog with constituencies, and not well understood or supported
- FY 99 budget not a product of dialog with the Hill despite earlier requests

Senate Ag Committee Guidance for FY 2000 submission:

- overall request needs to be higher, perhaps by order of magnitude
- package needs to provide financial incentives for farm and forest management of carbon sequestration and bioenergy; these should be achieved through increased funding to existing programs under the 1996 Farm Bill (EQIP, CRP, etc.). New programs should not be the focus of this effort. Recommendation is to increase funding for programs that effectively increase sequestration and/or bioenergy as a co-benefit of another objective, such as water quality.
- Don't reprogram existing conservation funds away from established priorities. Instead, increase overall funding such that additions to the base will benefit climate.
- sequestration research needs to be implementation driven, and include: pilots and demos; systematic ground level assessment inventories for all types of forests, cropland and grassland
- emissions abatement programs that are "no regrets" should be continued and possibly expanded
- funding should be provided for technical education and consensus building, and the agencies should more aggressively develop dialog on key issues with constituency groups
- agencies should increase communications with trade and local and regional media
- senior political reps in relevant areas of jurisdiction at the agencies should be directly involved in budget formulation and Hill dialog.

Summary themes for budget action:

- significantly increased sequestration incentives (over base) via existing ag/forest conservation programs, with demos and pilots
- policy-driven measurement and inventory systems for sequestration
- increased bioenergy development, with demos and pilots
- increased ag emissions abatement assistance for N2O and methane (no regrets)
- increased technical workshops and education

FAX TRANSMISSION

SENATOR BOB KERREY
141 Hart Building
Washington, DC 20510
202-224-6551
Fax: 202-224-7645

To: Roger Ballentine
Fax #: 202/456-6468
From: Debbie Reed
Subject: Article 3.4 Workshop

Date: November 23, 1998
Pages: 2 (including this cover sheet)

COMMENTS:

Roger, the Washington Post story prompted this, given that the article mentions Atlanta as the definitive venue. (I know, I know, but....) Please share it with Todd.

Note that the 'suggestions under separate cover' are coming out in an ad-hoc fashion -- Burnam doesn't want to send anything, I've sent a memo to Anderson and Delgado, and I'm quite sure that Harkin and Wellstone will send something. I made a pitch to do one consolidated list, but there was little interest.

The wording is deliberately vague in order to get PR on; this is not public, but you understand the issue. Engagement is key, though, in my estimation.

Lastly, given the stance of Farm Bureau on this, and given that they've not yet had a positive dialogue with USDA/the administration, I think the best way to proceed with Sandor or others would be to get them a private audience with some of these guys **prior** to a larger meeting with your guys; that way, they'll have some constructive notions, and be able to engage in a positive dialogue, I hope. At this point, however, they're still trying to get up to speed on the possibilities of this, and I think they're not yet ready for the Sandor pitch. I'll keep checking their pulse, though. Today's article did wonders with that crowd, you've got to know!

Enjoy the holiday. Let's catch up soon.

Debbie

United States Senate

WASHINGTON, DC 20510

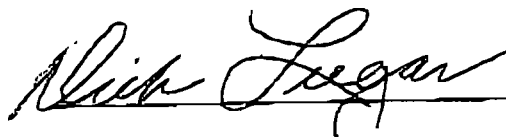
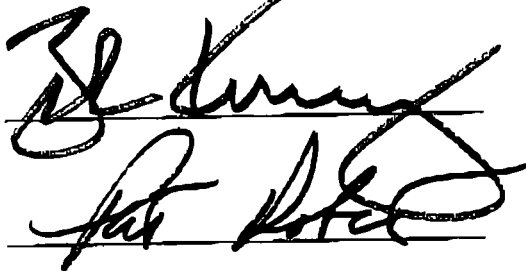
November 23, 1998

Stuart Eizenstat
Under Secretary of State for Economic, Business
and Agricultural Affairs
U.S. Department of State
Washington, D.C. 20520

Dear Ambassador Eizenstat:

We understand that a technical meeting is planned in March or April of 1999 on the topic of agricultural sinks and greenhouse gas sequestration activities, and that a group of international experts will participate in the meeting. It appears that there is great potential for environmental benefits to be secured by the agricultural sector in this arena, and scientists with expertise on the topic will further explore these opportunities at the meeting. We feel strongly that the midwestern United States, the heart of American farmland, is the proper venue for this meeting, and that we can use the opportunity of the meeting to commend our nation's agricultural sector for producing the safest, most abundant, and economical food supply in the world, while also acting as environmental and resource stewards. The American midwest boasts cropland, rangeland, prairies and forests, thus providing the proper locale to host a meeting that will highlight these riches. Under separate cover, we are submitting suggestions for specific locations we think would best serve the purpose of the meeting. We appreciate your consideration of these suggestions.

Sincerely,



cc: Todd Stern
Dan Glickman

FAX COVER SHEET

From: Stephanie Mercier
Minority Economist
Senate Agriculture Committee
Fax: (202) 224-9287
Ph: (202) 224-0014

To: Tom Peterson
w/ Climate Change Task Force
395-2311

Subject: Iowa sites for IPCC workshop

Date: 12/9

No. of pages:
(Cover sheet not included)

2

Tom,

I am also sending this to
Margot Anderson & David Sindelov.
Any other suggestions?

Stephanie

Iowa Projects/Sites Relating to Carbon Sequestration and Renewable Fuels

To facilitate selection of Ames, Iowa as the site for the IPCC technical workshop on Article 3.4, we have identified the following sites and projects which might be of interest to participants in the workshop.

- The **USDA/ARS National Soil Tilth Laboratory** is located in Ames, Iowa. Among other projects, they are studying the CO₂ flux of row crop agriculture, the impact of adoption of CRP land on carbon sequestration, and the forms of carbon in soil.
- The **Iowa Energy Center** was established by the Iowa Legislature as part of the 1990 Iowa Energy Efficiency Act. Its mission is to help Iowans reduce their reliance on non-renewable fuels and increase the use of renewable fuels. The center conducts and sponsors research and helps Iowans assess technology related to energy efficiency and renewable energy sources. It also supports energy education and demonstration programs throughout Iowa. Located on the Iowa State University campus in Ames, it includes the Biomass Conversion Facility (BECON), which will have five systems operating next year: anaerobic digestion, thermal gasification, pyrolysis, biodiesel and ethanol production, and secondary energy processing technologies (i.e., microturbines, fuel cells, sterling engines, etc.)
- The **Chariton Valley Switchgrass project** is being conducted in southern Iowa to show the amount of carbon captured by an alternative fuel. This project has approximately 4000 acres under contract for switchgrass production. Nearly 3,000 of these acres are already established in switchgrass. Project partners are creating preliminary models and using Geographic Information systems technology to target acres in the Rathbun Lake watershed that are ideal for establishing switchgrass to protect water quality, provide wildlife habitat, and sequester carbon. In cooperation with Alliant Power, this project is intended to produce switchgrass to co-fire with coal in a coal-burning utility plant. The earliest possible date for the test burn is the spring of 2000, based on the number of acres of switchgrass needed to provide the 4,000 tons for a week-long test burn. Project partners include the U.S. Dept. of Energy, U.S. Dept. of Agriculture, and the Iowa Farm Bureau.
- The **Iowa State Nursery**, under the direction of the Iowa State Forester, is located outside of Ames. The nursery grows seedling trees for use in state and federally funded agricultural conservation programs.
- A **Monsanto Center of Excellence** site for testing no-till cultivation techniques is located in Rippey, Iowa, less than an hour drive from Ames. The farm owner is a past official of the American Soybean Association, and would likely be in planting stage during an early spring conference.
- The **Aldo Leopold Center for Sustainable Agriculture** is located on the Iowa State Campus in Ames. The Center is conducting basic research on the dynamics of soil

organic matter and the implications for soil carbon storage.

- The state NRCS offices are engaged in a project to evaluate the potential of Iowa and Midwestern soils to store carbon, in cooperating with the National Association of Conservation Districts. This project is attempting to calibrate the Century model, under development at the NREL labs at Colorado State, to specific soil and climatic conditions in the Midwest.
- The Biofuels Corporation operates a biomass conversion facility in Cedar Rapids Iowa (about two hours from Ames) that is gasifying clean industrial by-products and producing electricity for commercial consumption.
- The Great Plains Chemical Plant in Omaha, Nebraska is engaged in an effort to collect corn stover (crop residue) from Western Iowa farmers as a raw input for processing into furfural (use as a feedstock for furfuryl alcohol production, most of which is used in the production of furan resins which in turn are used to produce foundry sand binders) at their Omaha plant.

DRAFT

December , 1998

Stuart Eizenstat
Under Secretary of State for Economic, Business
and Agricultural Affairs
U.S. Department of State
Washington, D.C. 20520

Dear Ambassador Eizenstat:

I want to commend you for the positive achievements and announcements made at the recently concluded negotiations of the U.N. Framework Convention on Climate Change (UNFCCC) in Buenos Aires, Argentina. In particular, the decision by the President to sign the Kyoto Protocol, while not binding, will enhance our ability to gain additional developing country participation in global activities to mitigate against climate change. The announcements by Argentina and Kazakhstan to take on future commitments is a signal that the U.S. has been successful in promoting global participation, and I am confident that continued efforts will yield additional, significant commitments.

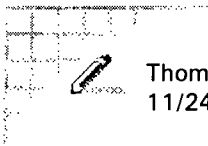
I am also particularly pleased regarding your announcement that the Administration will ensure that the Protocol will fully account for carbon sinks on agricultural lands. Ensuring that farmers and the agriculture sector are rewarded with credits and incentives for their efforts in combatting global warming has been the focal point of my involvement in this issue, and was a primary goal that I hoped to see achieved while I was in Buenos Aires for the negotiations. It is my understanding that what was negotiated in Buenos Aires, regarding Article 3.4 (sinks, including agricultural sinks) is a major first step toward that goal.

In regards to these two achievements, however, there is some uncertainty regarding how, and whether, each can occur under the current Kyoto Protocol framework, and I would like clarification on these two issues.

First, it is my understanding that although the Protocol does not now allow for agricultural soil sinks to count towards a country's reduction commitments, Article 3.4 of the Protocol leaves open the possibility that clarifying language can be added to the protocol at a future date, without requiring an amendment. I understand that the decision taken in Buenos Aires regarding Article 3.4 will provide for a scientific assessment of the soil sinks issue by a panel of experts from the Intergovernmental Panel on Climate Change (IPCC), and adoption of the IPCC findings, once completed, will then be considered at the next meeting of the Conference of the Parties (COP).

Second, I would like clarification on how a developing country such as Argentina or Kazakhstan can accede to the Kyoto Protocol without amending the Protocol. It is my understanding that the U.S. has utilized a mechanism for countries to accede to treaties in the past, and that such precedents have been established. I am seeking an explanation of how this would work.

I greatly appreciate your consideration of this request, and look forward to continued interactions on this complex but critical issue in the future. Please feel free to call me or Debbie Reed of my staff to discuss this in greater detail, or if you should have any questions.



Thomas D. Peterson
11/24/98 01:58:06 PM

Record Type: Record

To: Todd Stern/WHO/EOP, Elliot J. Diringer/CEQ/EOP, Bradley M. Campbell/CEQ/EOP, John D. Gibson/WHCCTF/EOP
cc: Dirk Forrister/WHCCTF/EOP, Julie M. Anderson/WHCCTF/EOP, Roger S. Ballentine/WHO/EOP, Shelley N. Fidler/WHCCTF/EOP
Subject: farm forum talking points

Talking Points For National Farm Forum 12/1/98:

Bad Weather - 1998 was not only the warmest year on record, but had some of the most severe weather ever seen. Unfortunately, US farm producers bore the brunt of this, and suffered severe losses for many top commodities while foreign production remained high. The administration responded with a \$6.2 billion relief package for US farmers, and stands ready to assist them in the future. At the same time, we fear that the worst is yet to come, as scientists warn that severe weather and warming trends will continue and worsen from an enhanced greenhouse effect. So we must take prudent and precautionary action today to reduce net emissions of the persistent gases that cause this problem. In Kyoto, Buenos Ayres, and at home we have worked hard to protect US agriculture from excessive climate change risk, as well as economic risks from inflexible climate mitigation policies that some might propose.

Sequestration - Agriculture and forestry are unique as the only sectors that both emit and sequester greenhouse gases, and agriculture is at the forefront of a great opportunity to cash in on the need for vastly increased natural storage of carbon, much of which can be accomplished through conservation practices that are well known and widely used in the US. Increasing carbon storage in soils, trees, and grasslands not only reduces the concentrations of CO₂ in the atmosphere, it also enriches the soil, saves money, provides habitat and reduces runoff. Farmers could benefit widely from the need for major emitters of greenhouse gases to invest in farmland sequestration programs that the Farm Journal has written so much about lately. And the administration is committed to greater support of agricultural conservation incentives in this area.

Bioenergy - Agriculture and forestry can also produce carbon neutral fuels and electricity from energy crops, residues and waste. Not only does this offset fossil fuel use that emits CO₂, but it capitalizes on a large, emerging market for bioenergy in the US. The administration is committed to fostering this process to the benefit of its agricultural and forestry sectors with enhanced R&D support, federal procurements, and other initiatives.

Energy Prices - Of course many farmers see themselves more immediately as consumers of fuel and electricity, and energy intensive farm inputs, and are rightfully concerned about the impact of climate change solutions on their production expenses. The US has made a centerpiece of flexible, market-based solutions, coupled with aggressive R&D, conservation incentives, and voluntary commitments as a way to hold energy price increases to a minimum. In Argentina we held the line on attempts to limit our freedom under the Kyoto protocol to reduce emissions in the most cost-effective manner, and we advanced our opportunities for sequestration credit for existing land use conservation practices. These approaches will remain a top priority.

Trade - Farm producers benefit from, and can be hurt by, the global commodities market, as we found out the hard way from this year's severe weather in the US. The administration has committed to bringing key developing nations into the Kyoto protocol before submitting it for congressional approval to keep this playing field level. The announcements in by Argentina and Kazakhstan in Buenos Ayres were significant breakthroughs that we believe represent the tip of the iceberg. Our efforts to blossom this movement into more comprehensive participation in the Kyoto Protocol is a top White House and State Department priority. At the same time, we must continue to tackle this problem at home to convince the rest of the world we are committed to continued leadership in solving this problem.

Background Issues:

energy price impacts: ag producers see themselves as highly consumptive of fuel and electricity, and captive to the prices of farm inputs that are energy intensive (e.g. fertilizer, chemicals, equipment). It is essential that they understand that the administration has searched for climate mitigation policies that would hold energy price increases to a minimum (e.g. international trading, energy technology development, alternative fuel development). They will be very interested to know how hard the US is pursuing international rules on trading and enforcement.

trade impacts: ag producers, and ag input suppliers, also see themselves competing in global commodities markets at potential disadvantage with competitors that do not have binding targets and timetables under the Kyoto protocol. It is essential that they understand that the administration is committed to participation of key developing countries, and will not submit for congressional approval without it.

regulations: farmers see themselves as highly regulated entities and chafe at the prospect of more as a means to battle climate change. It is essential that they understand the relatively low proportion of emissions they are responsible for in the US, and that the administration has adamantly rejected international proposals for "mandatory policies and measures." The US can implement flexible market based mechanisms, as opposed to regulation.

sequestration: farmers are just now waking up to the potential for carbon sequestration from soils, forests and grasslands to mitigate climate change and generate farm level income - either through direct conservation incentives, or through sale of credits in a trading market. The potential for sinks revenues is emerging as large and widespread for US farmers and forest land owners. They would be very interested in knowing that emissions traders are looking seriously at forest and soils as primary investment markets in the US, and that the administration is seriously committed to larger federal investments in conservation incentives for farmers. They also will be heartened to know that the US considers further development of sinks as a "must have" in international negotiations given Stu Eizenstat's work in BA.

bioenergy: farmers do not, generally, see themselves as fuel and electricity producers, but are waking up to the potential to market renewable energy in future fuel and electricity markets through management of waste materials, residues, and energy crops. They are anxious to learn more about the administration's work on market development and engineering in this area.

emissions abatement: crop and livestock producers know relatively little about win-win possibilities from technology programs that; increase energy efficiency on the farm; increase weight gain of livestock while reducing methane; reduce overapplication of fertilizer and save money and reduce N2O pollution; etc. They do, however, know how important ag technology has been in the past due to federal investments in labs and land grant universities. They would be greatly interested in knowing of the administration's commitment to improvements in this area.

cart before the horse: some ag groups (such as rice producers) complain that they don't know how climate mitigation will affect them until the administration has a plan for them. It is essential for them to know that the administration intends to allow the market to make as many investment decisions as possible, and that we will develop policies for market based approaches in collaboration with congress and constituent groups. It is also essential to understand that farmers can come out on top in the climate mitigation game because the sector is able to sequester carbon and produce carbon neutral energy from bio sources as a means to offset emissions.

weather impacts: this year US farm producers were shellacked by bad weather and received \$6.2 billion in compensation for weather related damages in FY99. Foreign competitors did not suffer such losses and were able to flood world commodity markets (no pun intended), thus depressing US prices. Farmers are beginning to realize that severe weather may be beyond their ability to handle in the future - as it was this year - as a consequence of climate change, and that these bad years may become more common without climate mitigation. They also were shocked by Hurricane Mitch and are yet more sensitive to the prospects of severe weather in the future.

COP 4
Land Use Change and Forestry Decision

General:

Agreed on actions to move LUCF decisions forward. Endorsed: decisions taken in Bonn regarding interpretation of components of Article 3.3; IPCC Special Report; a SBSTA workshop on 3.4 activities; and to additional discussion on policy and procedural issues that will not be addressed in the Special Report but will be required to implement 3.3 and 3.4.

Agreed to:

- ▶ SBSTA workshop hosted by U.S. focusing on Article 3.4. Submissions on agenda items, requested by February 1, 1999.
- ▶ Request for submissions on policy and procedural issues. These are issues that Special Report will not address. Submissions will be compiled by SBSTA and available for SBSTA 10. Submissions due March 1, 1999.
- ▶ Request SBSTA to consider, requirements needed to operationalize first sentence of 3.4 (deals with requirement that Parties report 1990 carbon stocks). Submissions due March 1, 1999.
- ▶ Agreed to made recommendations at first COP after SR to the COP/MOP on: 1) Article 3.3 definitions; and 2) rules, modalities, and guidelines necessary to add additional activities under Article 3.4.
- ▶ Agreed to made recommendations at first COP practicable, after SR to adopt guidelines the COP/MOP for inventory information needed in connection with Articles 3.3 and 3.4.



CONFERENCE OF THE PARTIES

Fourth session

Buenos Aires, 2-13 November 1998

Agenda item 5(a)(i)

MATTERS RELATED TO THE KYOTO PROTOCOL

MATTERS RELATED TO DECISION 1/CP.3, PARAGRAPH 5

LAND-USE CHANGE AND FORESTRY

Recommendation of the Subsidiary Body for Scientific and Technological Advice

At its ninth session, the Subsidiary Body for Scientific and Technological Advice decided to recommend the following draft decision for adoption by the Conference of the Parties at its fourth session.

Land-use, land-use change and forestry

The Conference of the Parties,

Recalling Decision 1/CP.3 on the adoption of the Kyoto Protocol to the United Nations Framework Convention on Climate Change, in particular its paragraph 5(a);

Noting the conclusions on land-use, land-use change and forestry adopted by the Subsidiary Body for Scientific and Technological Advice at its eighth session;

Noting also with appreciation the decision of the Intergovernmental Panel on Climate Change to prepare a special report on land-use, land-use change and forestry;

Having considered the report¹ prepared by the secretariat on a Subsidiary Body for Scientific and Technological Advice workshop on data availability based on definitions used by Parties and international organizations in relation to Article 3.3 of the Kyoto Protocol, which was held coincident with an Intergovernmental Panel on Climate Change expert meeting from 24 to 25 September 1998, and the submissions by Parties on land-use, land-use change and forestry²,

1. *Decides* to confirm the understanding expressed in the conclusions of the Subsidiary Body for Scientific and Technological Advice at its eighth session that the meaning of Article 3.3 of the Kyoto Protocol is as follows: the adjustment to a Party's assigned amount shall be equal to verifiable changes in carbon stocks during the period 2008 to 2012 resulting from direct human-induced activities of afforestation, reforestation and deforestation since 1 January 1990. Where the result of this calculation is a net sink, this value shall be added to the Party's assigned amount. Where the result of this calculation is a net emission, this value shall be subtracted from the Party's assigned amount;

2. *Decides* to endorse the other relevant conclusions on land-use, land-use change and forestry made by the Subsidiary Body for Scientific and Technological Advice at its eighth session;

3. *Decides* to recommend that the Conference of the Parties, at its first session following the completion of the special report of the Intergovernmental Panel on Climate Change and its consideration by the Subsidiary Body for Scientific and Technological Advice, adopt a draft decision to be forwarded to the Conference of the Parties serving as the meeting of the Parties to the Protocol at its first session on definitions related to activities under Article 3.3;

4. *Decides* to recommend that the Conference of the Parties, at its first session following the completion of the special report of the Intergovernmental Panel on Climate Change and its consideration by the Subsidiary Body for Scientific and Technological Advice, adopt a draft decision to be forwarded to the Conference of the Parties serving as the meeting of the Parties to the Protocol at its first session on modalities, rules and guidelines as to how, and which, additional human-induced activities related to changes in greenhouse gas emissions by sources and removals by sinks in the agricultural soils and the land-use change and forestry categories might be included under Article 3.4;

¹ FCCC/CP/1998/INF.4.

² FCCC/CP/1998/MISC.1 and Add.1-2, and FCCC/CP/1998/MISC.9 and Add.1-2.

5. *Further decides* to adopt, at the first session of the Conference of the Parties practicable following the completion of the special report of the Intergovernmental Panel on Climate Change and its consideration by the Subsidiary Body for Scientific and Technological Advice, a draft decision to be forwarded to the Conference of the Parties serving as the meeting of the Parties to the Protocol at its first session on guidelines for necessary supplementary information with respect to annual greenhouse gas inventories under the provisions of Article 7.1 and 7.4 for reporting required in connection with Article 3.3 and 3.4;

6. *Requests* the Subsidiary Body for Scientific and Technological Advice to consider, at its tenth session, the requirements necessary to fulfil the provisions of the first sentence of Article 3.4, and *invites* Parties to provide submissions on such requirements to the secretariat by 1 March 1999;

7. *Affirms* the importance of broad participation by Parties, particularly developing country Parties, in the work of the Subsidiary Body for Scientific and Technological Advice on land-use, land-use change and forestry;

8. *Requests* the secretariat to compile, for consideration by the Subsidiary Body for Scientific and Technological Advice at its tenth session, a list of policy and procedural issues associated with Article 3.3 and 3.4, based on existing submissions by Parties and any further submissions by Parties, and *invites* Parties to provide submissions on these issues to the secretariat by 1 March 1999;

9. *Also requests* the Subsidiary Body for Scientific and Technological Advice at its tenth session to give further consideration to planning its work on land-use, land-use change and forestry;

10. *Invites* the Intergovernmental Panel on Climate Change to continue to provide progress reports on its activities related to land-use, land-use change and forestry to the Subsidiary Body for Scientific and Technological Advice.

**Matters related to Article 3.4 of the Kyoto Protocol:
Additional Human-Induced Land Use Change and Forestry (LUCF) Activities**

The U.S. greatly appreciated the thoughtful and open discussion on land use and forestry accounting issues related to Article 3.3 that occurred in Rome at the workshop. We support the work of the IPCC to undertake a Special Report on LUCF activities, and commend the IPCC's solid start to date at the Rome workshop and otherwise on this important work. The U.S. thanks our Italian hosts, our UN FAO hosts, and the other Parties that participated in the productive, informative exchange. To build on this excellent beginning, we look forward to welcoming interested Parties to [insert attractive location] in February or March of 1999 for a second workshop to focus on issues arising from Article 3.4, the comments submitted by Parties, and issues arising from the first workshop.

We believe that including additional activities under Article 3.4 is likely to offer many Parties opportunities to use their wide range of forest and agricultural resources and national circumstances to help meet some portion of their commitment under the Kyoto Protocol, through activities at home and potentially through the three flexible mechanisms. Some Parties' circumstances limit the applicability of Article 3.3 activities, and Article 3.4 activities can help fill the gap. For example, Parties with significant agricultural and range/pasture lands, but small areas in forest, may benefit from the addition of new Article 3.4 activities. Many of these activities can also provide ancillary environmental and economic benefits. For us to overlook opportunities to verifiably increase long-term carbon pools on a variety of land types would not only disregard key national circumstances, but also conflict with the principles of the Framework Convention that call on Parties to cover all relevant sources and sinks, comprise all economic sectors, and take into account policies and measures that are cost effective.

The workshop's technical exchange can further a number of mutual goals:

- The workshop would improve our collective understanding of various Parties' particular national circumstances and their unique opportunities for verifiably increasing long term land-based carbon pools. The Rome workshop provided valuable information of this kind regarding activities specified in Article 3.3, and the U.S. looks forward to extending the discussion to additional activities for consideration under Article 3.4.
- The workshop could provide valuable input to the IPCC's Special Report on Land Use, Land Use Change and Forestry. Since the draft chapters for the Special Report are scheduled to be completed in April of 1999, timely provision of relevant data and information to the IPCC is critical. We propose that the convening lead authors for each chapter of the IPCC Special Report be invited to give SBSTA a status report on their chapter. Given that this Special Report in many ways breaks new ground in the relationship between the SBSTA and the IPCC, we should strive to ensure that there is ample opportunity for the SBSTA and IPCC experts to communicate.

- The workshop will address important issues such as methodologies, uncertainty, and research and data needs for activities for consideration under Article 3.4. Some of the activities we think should be part of the discussion are outlined below.

Recommended topics for the workshop and IPCC Special Report

In the U.S. Submission to SBSTA on "Methodological Issues Related to Land Use Change and Forestry and the Kyoto Protocol," included in FCCC/CP/1998/MISC.1, the U.S. noted that other activities that should be considered under Article 3.4 should include three broad categories: soil carbon management of forest lands, crop lands, range lands and pasture lands; improvements in forest management; and conservation. Under each of these categories, a range of potential land use practices and technologies should be evaluated for potential inclusion under Article 3.4 by the COP/MOP. Examples of practices and technologies that the report should consider and evaluate are:

- 1) soil carbon management
 - forest lands, including enhanced regeneration
 - crop lands (e.g., reduced tillage techniques, incorporation of crop residues into soils, cover crops and other practices to reduce erosion)
 - techniques for increasing carbon stocks in wetland rice cultivation
 - range and pasture lands (e.g., including restoration, riparian corridor establishment, reduced grazing pressure techniques)
- 2) improvements in forest and forest product management
 - harvest techniques (e.g., reduced impact logging, selective harvest)
 - efficiency of forestry activities (including harvest, transport, and milling) to reduce loss of fiber per unit of product
 - forest stand production techniques (e.g., tissue culture, genetic improvements, enhanced nutrient inputs)
 - strategies to reduce mortality from various pressures, e.g. pests, fire, and pathogens
 - ways to increase use of wood and paper wastes to reduce their input to landfills
- 3) conservation and restoration of existing forest and other lands
 - preservation, enhanced regeneration, and restoration techniques and policies
 - techniques to intensify management to conserve standing vegetation
 - policies and economic incentives to encourage land owners and users to conserve or increase carbon stocks

In our August 1998 submission to the IPCC, "Methodological Issues Related to Land Use Change and Forestry and the Kyoto Protocol," we recommended that the IPCC consider a set of objective questions in evaluating alternative interpretations of key terms. We think the IPCC should consider similar questions in evaluating additional activities for consideration under Article 3.4:

- Can inventory methods and reporting guidelines be developed and made available (or are they already available)?
- What are the data requirements and uncertainties for the inventory methods and reporting guidelines?
- What structural problems and accounting gaps exist?
- What are the greenhouse gas mitigation options that are included and excluded? How significant might they be in terms of effects on carbon stocks and other factors?
- What uncertainties exist in our scientific understanding of the effects of the activities on the carbon cycle?
- How can risk and uncertainty be incorporated into the accounting system?
- What ancillary environmental and economic costs and benefits might the activities incur?

Ag Only

(Dollars in Thousands)

Program Type		1998 Estimate	1999 Budget	1999 Current Estimate
Conservation Programs				
NRCS	Conservation Technical Assistance	541,361	589,110	549,105
	Forestry Incentives Program	6,325	0	16,325
(from CCC)	EQUIP	200,000	300,000	174,000
	Farmland Protection	18,000	15,000	0
	Wildlife Habitat Incentives	30,000	20,000	20,000
	Conservation Farm Option	11,000	25,000	0
	Wetlands Reserve	236,797	127,741	94,100
	CRP	1,908,516	1,718,352	1,599,826
	PL 566 (Program for Watershed Protection)	86,036	101,452	99,443
	Total, Conservation Programs	3,038,035	2,896,655	2,552,799
Climate Change Technology Initiative (Includes CCAP)				
ARS	Biomass for Energy	0	4,000	0
	Agricultural Industry Practices	0	3,000	0
FS	Biomass for Energy	0	2,000	0
	Carbon Sequestration	0	1,000	0
NRCS	Improve Fertilizer Use Efficiency	1,000	1,000	1,000
	AgStar	1,000	1,000	1,000
	Ruminant Productivity	1,000	1,000	1,000
FS	Forest Research: Recycling	200	200	200
	Forest Stewardship: Reduced Stand Depletion	800	800	800
	SIP: Tree Planting *	6,500	8,500	0
	Total, CCTI	10,500	22,500	4,000
Global Change Research Program				
ARS	Methyl Bromide	14,600	16,600	14,600
	Regions/Sectoral Assessment	0	0	0
	Other	12,100	11,300	11,300
CSREES	UV-B Monitoring	1,000	1,600	1,000
	Improved Response Models (NRI)	10,600	10,600	10,600
ERS	Economics of GC and Agriculture	800	800	800
	Economic Incentives: Carbon Sequestration	0	0	0
	Regions/Sectoral Assessment	0	0	0
NRCS	Soil Carbon Studies	1,200	1,500	1,500
	Regions/Sectoral Assessment	0	0	0
FS	Global Change Research	16,900	16,900	16,900
	Total, GCRP	57,200	59,300	56,700
Total, USDA Climate Change Related Programs		3,105,735	2,978,455	2,613,499

"Forest Legacy" program? (politically popular)

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Briefing Papers from the Union of Concerned Scientists

Linking Solutions to Climate Change and Biodiversity Loss Through the Kyoto Protocol's Clean Development Mechanism

By Peter C. Frumhoff, Darren C. Goetze and Jared J. Hardner

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The Kyoto Protocol's Clean Development Mechanism creates an opportunity to motivate investments in projects that reduce greenhouse-gas emissions by helping developing countries conserve and restore their forests. Properly designed and implemented, forest-based CDM projects could support climate, biodiversity conservation and sustainable development objectives by paying the incremental costs of protecting parks and watersheds, reducing the impacts of logging, restoring forests on degraded lands, and other measures. This report highlights several key challenges and strategies for realizing the potential of CDM projects to support these objectives.

Tropical forests are globally significant reservoirs of both carbon and biological diversity. Yet land conversion for agriculture—coupled with fires, and high-impact logging and mining—continue to rapidly destroy, fragment, and degrade forests across the tropics. Collectively, these activities contribute more than 15 percent of annual

anthropogenic emissions of carbon dioxide, the principal greenhouse gas and drive the marked decline and extinction of forest species and genetically distinct populations (Brown et al. 1996, Orians et al. 1995, Hughes et al. 1997, Laurence et al. 1997). A principal obstacle to slowing current trends is that markets generally fail to capture the values of biodiversity, carbon storage, and the other “ecosystem services” that tropical forests provide. Because these values are typically unmonetized and primarily benefit the broader national and global community, individual and industrial forest users rarely have sufficient financial incentives to protect and more sustainably use forest resources. (Pearce and Moran 1994, Kishor and Constantino 1993, Myers 1997).

The Clean Development Mechanism (CDM) of the recently negotiated Kyoto Protocol creates a significant new opportunity to correct this market failure by motivating payments for the carbon storage and sequestration values of tropical forests. Through the CDM, the ratified Protocol would allow public and private sector entities from industrialized countries to receive credit towards their greenhouse gas (GHG) emissions reduction obligations by investing

