United States Government Accountability Office

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Report to Congressional Requesters

November 2011

INTERNATIONAL CLIMATE CHANGE ASSESSMENTS

Federal Agencies Should Improve Reporting and Oversight of U.S. Funding

GAO-12-43

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GAO Accountability * Integrity * Reliability

Highlights

Highlights of GAO-12-43, a report to congressional requesters

Why GAO Did This Study

The Intergovernmental Panel on Climate Change (IPCC) is a United Nations (UN) body that assesses scientific and other aspects of climate change. Interest in IPCC's activities increased after the theft of e-mails among IPCC scientists was made public, and with the discovery of several errors in its 2007 set of reports. In 2010, the InterAcademy Council (IAC), a body representing the U.S. National Academy of Sciences and its international counterparts, recommended IPCC enhance its management and quality assurance processes. IPCC is funded by the UN and member nations, including the United States through the Department of State. In addition, the U.S. National Science Foundation (NSF), on behalf of itself and the 12 other federal agencies that participate in the U.S. Global Change Research Program (USGCRP), supports IPCC activities.

GAO was asked to report on (1) U.S. financial support to IPCC from 2001 through 2010, (2) conditions the United States places on its financial support to IPCC and how they help ensure these funds are spent accordingly, and (3) the IPCC quality assurance processes and IPCC's steps to address related IAC recommendations. GAO reviewed documents and interviewed officials from federal agencies and IPCC.

What GAO Recommends

GAO recommends that (1) State and NSF coordinate and inform Congress annually with accurate and consistent information on U.S. funding for IPCC and (2) NSF conduct timely project reviews as required by its cooperative agreement. State, NSF, and USGCRP generally concurred with these recommendations.

View GAO-12-43. For more information, contact David C. Trimble at (202) 512-3841 or trimbled@gao.gov.

What GAO Found

The United States provided a total of $31.1 million (in constant 2010 dollars) to IPCC for fiscal years 2001 through 2010, with average annual funding of about $3.1 million. State provided $19 million for administrative and other expenses. USGCRP agencies provided $12.1 million through NSF for a technical support unit that helps develop IPCC reports. GAO identified two key challenges with assembling the data on U.S. support for IPCC. First, the information was not available in budget documents or on the websites of the relevant federal agencies, and the agencies are generally not required to report this information to Congress. Second, the funding data that GAO obtained from State and NSF were inconsistent with data that State had previously reported to the House Committee on Energy and Commerce in June 2010. Regarding State funding, GAO determined that the information it provided to the committee incorrectly included about $3.5 million (in constant 2010 dollars) that was passed through the IPCC account but was not used for IPCC activities. Regarding the funding for the technical support unit, the information provided to the committee was consistent for fiscal years 2001 through 2008. However, GAO determined that data for the last 2 fiscal years provided to the committee were incorrect because funding for fiscal year 2009 was incorrectly labeled as fiscal year 2010 funding.

The United States places conditions on the funding that NSF provides for the technical support unit on behalf of all USGCRP agencies, including a project review required in a 2010 NSF cooperative agreement to help inform budgeting for 2011. However, required oversight of that funding was not completed on time in fiscal year 2010 because NSF officials said it was redundant with ongoing strategic planning for 2012 to 2021. As a result, NSF and USGCRP agencies did not have additional information to help inform decisions about funding needs for fiscal year 2011. State has not placed conditions on IPCC's funding because IPCC's activities have not triggered such restrictions. According to State officials, IPCC does not engage in restricted activities that are tied to the State account providing the funding. State officials provide input and monitor IPCC Trust Fund funding by approving annual IPCC budgets and reviewing audits.

IPCC uses several quality assurance processes for its assessment reports, including an expert selection process for report authors and review editors, a report review process, and a review of the quality and validity of literature and data used to support its findings. IPCC has begun to take steps to implement 14 of 15 IAC recommendations related to quality assurance, according to IPCC documents and officials. For example, IPCC changed its guidance to better specify the selection criteria for report authors and the roles and responsibilities of its leadership and author teams in response to IAC concerns regarding a lack of transparency in the report scoping and expert selection processes. In addition IPCC developed a draft conflict-of-interest policy to respond to IAC's concerns regarding, among other things, the independence of IPCC participants. While IPCC is fully implementing 14 of the recommendations, it is partially implementing 1 recommendation to enhance the scrutiny of non-peer-reviewed literature underlying its findings. According to IPCC officials, it will not identify each finding in the assessment report that was based on non-peer-reviewed literature, because there is no standardized way to differentiate between peer-reviewed and non-peer-reviewed sources.

Contents

Abbreviations

GCOS	Global Climate Observing System
IAC	InterAcademy Council
IPCC	Intergovernmental Panel on Climate Change
NSF	National Science Foundation
State	Department of State
UCAR	University Corporation for Atmospheric Research
UNEP	United Nations Environment Program
USGCRP	United States Global Change Research Program
WMO	World Meteorological Organization

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Accountability * Integrity * Reliability

United States Government Accountability Office
Washington, DC 20548

November 17, 2011

The Honorable Fred Upton
Chairman
Committee on Energy and Commerce
House of Representatives

The Honorable Cliff Stearns
Chairman
Subcommittee on Oversight and Investigations
Committee on Energy and Commerce
House of Representatives

The Honorable Joe Barton
The Honorable Michael C. Burgess
House of Representatives

Each year, the United States provides financial and technical support to the Intergovernmental Panel on Climate Change (IPCC), a scientific body established by the United Nations to assess the scientific, environmental, and socioeconomic aspects of climate change. Interest in IPCC's activities increased after the theft of internal e-mails from IPCC scientists was made public and errors were discovered in IPCC reports issued in 2007. IPCC reports contain assessments of available scientific and technical knowledge relevant to climate change and have been instrumental in informing national and international climate policy. In addition, they have raised public awareness of climate change. IPCC plans to issue its next set of reports in 2014.[1] The assessment reports cover (1) physical science; (2) impacts, efforts to adapt to climate change, and vulnerabilities; (3) efforts to mitigate the effects of climate change; and (4) a synthesis report.

IPCC receives funds from several sources such as the United Nations Environment Program (UNEP), the World Meteorological Organization

[1]IPCC publishes the results of the assessment in a set of four volumes. Since 1990, IPCC has published four sets of assessment reports, and the most recent set was published in 2007. For purposes of our report, we refer to each set as an assessment report. In addition to the assessment reports, IPCC produces special reports, methodology papers, and technical papers related to climate change.

(WMO), and IPCC member nations, including the United States, which provides funds through the Department of State (State).[2] In addition, the United States hosts one of four technical support units that assist with the development of the assessment reports. The U.S. National Science Foundation (NSF) provides funding for this technical support unit at Stanford University, on behalf of itself and 12 other federal agencies participating in the United States Global Change Research Program (USGCRP).[3] NSF has a cooperative agreement with the University Corporation for Atmospheric Research (UCAR) in Boulder, Colorado, to manage the unit's day-to-day operations.[4]

In light of attention IPCC received after winning the Nobel Peace Prize in 2007 and because of the internal e-mail thefts, the United Nations Secretary General and the IPCC Chairman asked the InterAcademy Council (IAC), a body representing the U.S. National Academy of Sciences and its international counterparts, to review the policies and procedures guiding IPCC's assessment process. In October 2010, IAC reported that the overall structure of the IPCC assessment process appeared to be sound but stated that improvements were both possible and necessary for the assessment reports. IAC made 22 recommendations to improve, among other things, IPCC's management and quality assurance processes. We analyzed the IAC recommendations and determined that 15 of the 22 are related to helping ensure the quality of IPCC's reports.

Within this context, you asked us to provide information on U.S. support for IPCC and measures IPCC is taking to ensure the quality of its work. Our objectives were to examine (1) financial support the United States has provided IPCC from fiscal years 2001 through 2010; (2) conditions

[2]IPCC information shows that 45 member nations provided funds to the organization at least once since it began in 1988. From calendar years 2006 through 2010, an average of 26 nations provided funds.

[3]USGCRP coordinates and integrates federal research on changes in the global environment and their implications for society. The 13 federal agencies that participate in USGCRP are the Departments of Agriculture, Commerce, Defense, Energy, Health and Human Services, Interior, State, and Transportation; the Environmental Protection Agency; the National Aeronautics and Space Administration; NSF; the Smithsonian Institution; and the U.S. Agency for International Development.

[4]Founded in 1960, UCAR is a nonprofit consortium of North American member universities and other affiliated organizations.

the United States places on its financial support to IPCC and how they help ensure these funds are spent accordingly; and (3) quality assurance processes IPCC has used in preparing its assessment reports and what steps, if any, IPCC is taking to address recommendations made by IAC to enhance the integrity of the assessment process and the accuracy of the reports produced.

To respond to the first objective, we obtained and reviewed documents from State, NSF, and USGCRP about the amount and type of U.S. support provided to IPCC. We also interviewed officials representing these agencies and IPCC. We assessed the reliability of budget data through discussions with cognizant agency officials and corroborated those discussions with agency reports and budget documents. We determined the data were sufficiently reliable for our purposes. To respond to the second objective, we reviewed relevant statutory requirements and obtained and analyzed relevant documents—including information on conditions placed on the funding, pledge letters State provides to IPCC, and NSF's cooperative agreement with UCAR—and interviewed State, NSF, and USGCRP officials. We also performed limited testing of transactions at NSF to verify that its process for receiving funds from USGCRP agencies was adequate. Additionally, we reviewed internal controls and oversight mechanisms that the agencies said were used to ensure U.S. financial support was spent according to any relevant conditions.

To respond to the third objective, we reviewed the policies and procedures guiding IPCC's assessment report process and the October 2010 IAC report. We summarized the categories of IAC recommendations and focused our review on the 15 recommendations related to quality assurance and IPCC's efforts to address those recommendations. We do not include in our review seven IAC recommendations related to IPCC's management structure, communications strategy, and deadlines for review comments, which do not relate directly to quality assurance. We also reviewed a 2007 report from the National Research Council related to IPCC's policies and procedures. We interviewed IPCC officials to better understand the application of those policies and procedures, including the internal controls in place to help ensure the quality of the reports. In addition, we interviewed officials from IPCC, IAC, and the National Academies concerning IPCC's progress in implementing IAC's recommendations for improving IPCC's management structure and internal controls. We reviewed updates to IPCC's policies and procedures made as a result of IAC's recommendations and discussed these updates

with senior IPCC officials. Appendix I provides more information on our objectives, scope, and methodology.

We conducted this performance audit from November 2010 through November 2011 in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

Background

IPCC was established in 1988 by WMO and UNEP to assess the scientific basis for human-induced climate change, its likely impacts, and opportunities for adaptation and reducing greenhouse gas emissions. IPCC's assessment work is divided among three working groups: Working Group I assesses the physical scientific aspects of the climate system and climate change; Working Group II assesses scientific, socioeconomic, and technical information on the vulnerability of humans, ecological systems, and socioeconomic sectors to climate change and evaluates information on their adaptive capacity and adaptation practices and options; and Working Group III assesses scientific, technical, and socioeconomic information on options to mitigate climate change.[5] The results of the assessment are published in a set of four volumes: three working group reports and a synthesis report. Working group reports each include a technical summary, which details the scientific basis for the report's findings, and a summary for policymakers, which synthesizes the findings from each technical summary. The synthesis report is a shorter document that integrates the overall findings in a less technical format. Since 1990, IPCC has published four sets of assessment reports, and the most recent assessment report was published in 2007.

IPCC's major decision-making body is a plenary group of 194 government representatives from member nations of WMO and UNEP, known as the Panel. IPCC's assessment process begins with scoping meetings, which establish the scope of the upcoming assessment. At these meetings, scientists, other identified climate experts, and the Panel discuss lessons learned from previous assessments and the needs that participating

[5]In addition to the three working groups, the IPCC Task Force on National Greenhouse Gas Inventories provides guidelines for methodologies and practices for preparation of the inventories by member nations.

governments have for the upcoming assessment. The Panel also elects the IPCC chair, three IPCC vice-chairs, and co-chairs and vice-chairs for the three working groups. Together, these individuals form the IPCC Bureau, which oversees the organization and preparation of IPCC products, including assessments, special reports, and technical papers. The activities of the Bureau are supported by the Secretariat, IPCC's administrative body, which is responsible for planning, overseeing, and managing IPCC activities. The majority of IPCC's work is undertaken by the scientists and experts who develop reports. For the current assessment report, over 800 scientists and experts volunteer to serve as coordinating lead authors, lead authors, and review editors. Additional experts contribute specific elements of chapters or review drafts of the reports. Table 1 describes IPCC participants' roles and responsibilities.

Table 1: Roles and Responsibilities of IPCC Member Nations and Participants

IPCC position	Role
Panel	Composed of 194 representatives of member nations of WMO and UNEP, determines the IPCC structure, principles, procedures, work program, and budget; nominates and elects the IPCC chair and Bureau members (i.e., the IPCC chair, three IPCC vice-chairs, and co-chairs and vice-chairs for three working groups); agrees on the scope, outline, and work plan for an assessment report; nominates authors and reviewers; approves the summary for policymakers; and accepts the final assessment report.
Observer organizations	Ninety-six United Nations bodies, intergovernmental organizations, and nongovernmental organizations that nominate authors and reviewers and, at the invitation of the IPCC Plenary, provide input on the scope of the assessment report.
IPCC Bureau	Composed of 31 members including the IPCC chair, 3 IPCC vice-chairs, 7 working group co-chairs, 18 working group vice-chairs, and 2 co-chairs of the Task Force on National Greenhouse Gas Inventories; provides guidance and leads the author teams through preparation of the assessment report.
IPCC chair	Plans, oversees, and guides all IPCC activities, including scoping and writing of the synthesis report; reports to the governing bodies of WMO, UNEP, and the United Nations Framework Convention on Climate Change; and speaks for the IPCC.
IPCC vice-chairs	Perform the duties of the IPCC chair when absent and other duties as mutually agreed.
Working group co-chairs	Lead the selection of authors and reviewers and the preparation, review, and finalization of their working group report.
Working group vice-chairs	Assist the working group co-chairs; bring together regional research efforts and approaches, and stimulate networking on relevant regional issues.
Coordinating lead authors	Ensure that major sections of the report are completed and conform to style standards and that cross-cutting scientific or technical issues are addressed in a coherent manner.
Lead authors	Synthesize material for their chapter in a consistent style and revise drafts in response to reviewer comments.
Contributing authors	Provide text, graphs, or data for incorporation into the report by lead authors.
Review editors	Assist in identifying expert reviewers, ensure that review comments receive appropriate consideration by lead authors, and ensure that controversial issues are adequately reflected in the report.
Technical support units	Each working group has a technical support unit to coordinate and administer its activities, including communicating with authors and reviewers, organizing author meetings, compiling and editing drafts, and coordinating the review process.
IPCC Secretariat	Plans, oversees, and manages IPCC activities, including organizing sessions of the IPCC Plenary and Bureau; facilitating Bureau elections; assisting with travel of developing-country scientists; communicating with governments; managing the IPCC Trust Fund, budget, and website; paying expenses; and coordinating report publication and outreach.

Source: IPCC.

Once the Panel has approved the outline and work plan for the assessment report, the co-chair and vice-chair of each working group select coordinating lead authors, lead authors, and review editors from nominees provided by member governments, observer organizations, and members of the Bureau. Working groups can also recruit contributing

authors to provide technical assistance or information on specific topics for incorporation into the reports. Each working group has a technical support unit to coordinate and administer its activities, including compiling and editing drafts and coordinating the review process. These units play a leadership role, both in content for expert meetings and the assessment reports, as well as in management of the communications and implementation of IPCC activities. For IPCC's 2014 assessment report, the technical support unit for Working Group II, which is funded by the United States, is located at the Carnegie Institution for Science at Stanford University. Switzerland and Germany provide support for Working Groups I and III, respectively, and the United Kingdom and the Netherlands supported technical support units in each of the two previous reporting cycles.

IPCC activities are supported by the IPCC Trust Fund, to which member governments provide voluntary contributions. Member governments provide further substantial support for IPCC activities, in particular through hosting technical support units, supporting the participation of experts in IPCC activities, organizing meetings, and contributing to report translations. WMO, UNEP, and the United Nations Framework Convention on Climate Change also provide financial support to IPCC. The Convention sets the overall framework for intergovernmental efforts to respond to the challenges posed by climate change.[6]

In response to increased scrutiny and criticism of the IPCC assessment reporting process, the United Nations Secretary General and the Chairman of the IPCC in 2010 requested that the IAC form a committee to conduct an independent review of IPCC's policies and procedures used to generate assessment reports.[7] To conduct its review, the IAC committee conducted meetings throughout the world with scientists and IPCC officials and gathered input from experts with a variety of views on the IPCC assessment process through interviews and a widely distributed

[6]The objective of the Convention is to achieve the stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system. There are currently 195 parties to the Convention, which entered into force on March 21, 1994.

[7]InterAcademy Council, *Climate Change Assessments: Review of the Policies and Procedures of the IPCC* (Alkmaar, The Netherlands: Bejo Druk & Print, October 2010).

questionnaire.[8] The IAC committee also relied on a 2007 National Research Council study on the characteristics of effective global assessments that included a case study on the IPCC assessment process.[9] In addition, the IAC committee reviewed the management and administrative structure of IPCC, IPCC's strategies for communicating with the media and public, and made recommendations for potential improvements. The review examined the procedures and processes used to carry out IPCC assessments, but it did not examine climate change science or the validity of its representation in the assessment reports.

U.S. Funding for IPCC Totaled About $31 Million for Fiscal Years 2001 through 2010, but Financial Data Were Not Readily Available or Accurate

The United States provided a total of $31.1 million (in constant 2010 dollars) in financial support for IPCC activities from fiscal years 2001 through 2010, using two funding streams, according to documents and senior officials from State and NSF. Average annual U.S. funding during this 10-year period was about $3.1 million. The State Department provides one of the two U.S. funding streams through its International Organizations and Programs Account, which provided $19 million to IPCC's Trust Fund from fiscal years 2001 through 2010. According to IPCC documents, contributions to the Trust Fund support IPCC's core staff in Geneva, Switzerland; participation among experts from developing nations; the organization of meetings; and the publication and translation of IPCC reports, among other activities.

In addition to the funding State provides to the IPCC Trust Fund, NSF and the 12 other USGCRP agencies provide the other U.S. funding stream, which supports the IPCC technical support unit at Stanford University using a complex funding mechanism. Specifically, all of the USGCRP agencies, including NSF, provide funding through NSF that, among other things, is used to support the IPCC technical support unit. To do so, NSF uses some of these funds to provide financial assistance to UCAR using a cooperative agreement, and UCAR administers the technical support unit's budget, which covers the unit's staff and equipment, in addition to

[8]The IAC's questionnaire was sent to IPCC government representatives, scientific leaders of the 2007 assessment and upcoming 2014 assessment reports, critics and proponents of the IPCC assessment process, and organizations with an interest in the content of the assessment reports, such as scientific societies and nongovernmental organizations. The IAC received more than 400 responses.

[9]National Research Council, *Analysis of Global Change Assessments: Lessons Learned* (Washington, D.C.: The National Academies Press, 2007).

other things.[10] The USGCRP agencies provided a total of $12.1 million from fiscal years 2001 through 2010. Overall U.S. support provided to IPCC from fiscal years 2001 through 2010 is shown in table 2.

Table 2: U.S. Support for IPCC from Fiscal Years 2001 through 2010

Constant 2010 dollars in millions[a]

Fiscal year	U.S. funding for IPCC activities	U.S. funding for IPCC technical support unit	Total
2001	$2.0	$0.0	**$2.0**
2002	2.5	0.0	**2.5**
2003	2.3	1.2	**3.6**
2004	1.9	1.7	**3.7**
2005	2.0	1.8	**3.9**
2006	1.8	1.8	**3.6**
2007	1.9	1.2	**3.1**
2008	1.3	0.5	**1.8**
2009	1.5	1.7	**3.2**
2010	1.7	2.1	**3.9**
Total	**$19.0**	**$12.1**	**$31.1**

Source: GAO analysis of State and NSF data.

Note: Total does not sum due to rounding.

[a]A gross domestic product price index was used to adjust for inflation.

We identified two key challenges assembling the data on U.S. support for IPCC. First, as of September 2011, the data were not available in budget documents or on the websites of the federal agencies that provide funding for IPCC activities, and these agencies are generally not required to report this information to Congress, which limits the transparency of U.S. spending on IPCC activities. Second, the funding data that State and NSF provided to us differed from data that State had previously reported

[10]UCAR, based in Boulder, Colorado, is a nonprofit consortium of North American member universities that grant PhDs in the atmospheric and related sciences. Since 1994, it has supported USGCRP's Integration and Coordination Office and other USGCRP activities. USGCRP activities and the IPCC technical support unit activities are all funded through the cooperative agreement NSF has with UCAR.

to the House Committee on Energy and Commerce in June 2010.[11] At that time, State reported on its contributions to the IPCC Trust Fund from fiscal years 2001 through 2009, and on funding that NSF provides to the technical support unit from fiscal years 2001 through 2010.

With respect to funding data for the IPCC Trust Fund from State, State provided us with data in January 2011 that were consistent with the information it reported to the House Committee on Energy and Commerce and that was updated to include funding for fiscal year 2010. The data State provided to us showed total funding to the Trust Fund from fiscal years 2001 through 2010 was $22.7 million (in constant 2010 dollars). However, in August 2011, we determined that the information State had provided to the committee was incorrect because it included about $3.5 million (in constant 2010 dollars) that State officials described as pass-through funding for the Global Climate Observing System (GCOS), a joint undertaking of several United Nations organizations and the International Council for Science.[12] State officials said that the GCOS funding was unrelated to core IPCC activities such as preparing assessment reports and agreed it should not be included as a core contribution to IPCC. Thus, State's funding for IPCC activities, after adjusting for the pass-through funding, totaled $19 million (in constant 2010 dollars) from fiscal years 2001 through 2010. According to IPCC data, these funds represented about 40 percent of contributions to the IPCC Trust Fund for the period.

With respect to funding for the technical support unit, NSF updated the information that was previously provided to the House Committee on Energy and Commerce and provided us with this information in April 2011. The information we received was consistent with the funding information provided to the committee for fiscal years 2001 through 2008. However, we determined in April 2011 that the data provided to the committee were incorrect for fiscal years 2009 and 2010 because of a timing issue. NSF officials said that that it had awarded the 2009 funding at the end of the fiscal year but that the funds could not be spent by

[11]In June 2010, State provided information to the House Committee on Energy and Commerce in response to the committee's March 2010 request to IPCC for information regarding U.S. support of IPCC.

[12]GCOS is an internationally coordinated system of networks and observing systems for meeting national and international climate observations. Two of the United Nations organizations that co-sponsor it, WMO and UNEP, provide funds to IPCC.

UCAR, which administers the technical support unit's operations, until fiscal year 2010. According to NSF officials, because information provided to the committee for the technical support unit funding originated from UCAR, we determined the fiscal year 2009 funding was incorrectly labeled as fiscal year 2010 funding.

The United States Places Conditions on One of Two Funding Streams for IPCC, but Not All of the Oversight of That Funding Was Timely

The United States places conditions on one of its two funding streams that financially support IPCC—the one provided by NSF on behalf of itself and the 12 other USGCRP agencies for the technical support unit—but a required annual project review to oversee that funding was not completed on time.

NSF

With regard to funding provided through NSF to UCAR for the technical support unit, the cooperative agreement contains several financial and administrative terms and conditions. For example, the current agreement—which took effect in fiscal year 2010—states that UCAR must obtain written approval from NSF before purchasing nonbudgeted services and equipment exceeding $100,000. The cooperative agreement also references the general financial and administrative terms and conditions found in NSF's policies and procedures guide for awards and proposals.

To help ensure that IPCC technical support unit funds are spent accordingly, NSF monitors the funding. NSF reviews external audits of UCAR and also has an overall internal control process for receiving funds from other USGCRP agencies. For example, NSF assigns a unique program code to funds it receives from these agencies, which helps ensure the funds are used for the intended purposes.

In addition, NSF's 2010 cooperative agreement requires an annual project review of UCAR's efforts under the agreement, including its

administration of the technical support unit's budget.[13] According to the cooperative agreement, the review of UCAR's efforts is to be conducted at least once each year and the actual amount of support for fiscal year 2011 was to be decided after the first annual review. NSF, however, did not conduct a required annual review for fiscal year 2010 and did not complete the review until September 2011 when it combined it with the agency's fiscal year 2011 year review. NSF officials told us in April 2011 that normally the review would have been conducted at the end of fiscal year 2010. However, the officials said that performing a review at that time would have been redundant because USGCRP was developing a new strategic plan for 2012 through 2021 and all aspects of its structure were being assessed. When we asked the officials how the strategic planning activities of USGCRP would relieve it of the requirement to perform the review, they said that the review would be conducted within the next several months. NSF and the other USGCRP agencies made their fiscal year 2011 funding decision prior to completion of the annual review, rather than after it, as called for in the cooperative agreement. NSF officials told us that NSF and the other USGCRP agencies instead based their funding decision on UCAR's request for continued funding and the supporting documentation, which had been the process in previous years before the requirement for an annual project review.[14] However, without the review, the agencies lacked additional information that could have enabled them to better evaluate UCAR's progress and determine an appropriate funding level for the second year of the cooperative agreement that was based on results.

State

State has conditions for funding to international organizations, including IPCC. However, State officials said that the nature of IPCC's activities has not triggered such restrictions. The officials said that the department supports IPCC through its International Organizations and Programs account and that, in accordance with statutory direction, it has restrictions

[13]The cooperative agreement requires NSF to conduct the review in consultation with the other USGCRP agencies.

[14]According to USGCRP officials, this information included an annual project plan and information from the technical support unit.

on nations and activities that are eligible for funding from this account.[15] However, they noted that IPCC does not engage in any of the restricted activities. Nonetheless, State officials provide input and monitor the use of the IPCC Trust Fund. For example, State officials explained that they, along with other IPCC member governments, approve a detailed annual IPCC program and budget, normally following discussions with IPCC officials and other member countries on proposed expenditures. They also said that State reviews external audits of WMO, which cover IPCC's Trust Fund, and determines if the reports have any findings related to IPCC. IPCC reported that since the organization's inception in 1988, none of the findings from these external reports concerned the Trust Fund.[16]

IPCC Has Used Quality Assurance Processes and Is Improving Them in Response to Recommendations from IAC

IPCC has policies and procedures that seek to ensure the quality and integrity of its assessment reports. IPCC fully accepted 14 of the 15 IAC recommendations related to quality assurance and has begun taking steps to implement them. IPCC partially accepted the other recommendation and is taking steps to partially address it.

[15]For example, under the Foreign Assistance Act of 1961, State cannot provide funds from this account to international organizations to help pay the costs of developing or operating any volunteer programs related to the selection and training of volunteer manpower. However, because IPCC does not conduct such activities, State officials said the account funding restrictions did not apply. In addition, under section 307(a) of the act, none of the funds authorized to be appropriated from the account are available for the U.S. proportionate share for programs for Iran, Cuba, Burma, North Korea, Syria, or the Palestine Liberation Organization (PLO), or for projects whose purpose is to provide benefits to the PLO or entities associated with it. State officials said that they also implement this provision.

[16]We reviewed external audit reports for WMO from fiscal years 2001 through 2009. These reports, which were prepared by the Auditors General of either France or the United Kingdom, did not contain any audit findings related to the IPCC Trust Fund. In May 2011, IPCC decided to begin having an external audit of just the IPCC Trust Fund, conducted by the Auditor General of the United Kingdom. The first audit will cover calendar year 2010.

IPCC Has Policies and Procedures That Seek to Ensure the Quality and Integrity of Its Assessment Reports

IPCC has written policies and procedures that document its quality assurance processes. According to IPCC officials and guidance, IPCC attempts to ensure the quality and integrity of its reports through (1) a multistep expert nomination and selection process for report authors and review editors, (2) its report review process, and (3) efforts to help ensure the quality and validity of literature and data underlying its reports.

Expert Nomination and Selection Process

According to IPCC policies and procedures, the expert selection process begins with nominations from the Panel's member nations and other organizations. Working group co-chairs and vice-chairs then select experts from the list of nominations for three roles: coordinating lead authors, lead authors, and editors. Selection is based on a list of criteria, including expertise, geographic representation, and scientific views. Additional experts can be selected as coordinating lead authors or lead authors based on their publications, and working groups have the discretion to invite other experts, known as contributing authors, if their expertise is needed on a particular topic. Working groups also select two review editors for each chapter and technical summary of their respective working group reports. Each pair of review editors includes a member of the working group and an independent expert from the list of nominations mentioned above. For purposes of independence, the review editors are not involved in the preparation of any of the sections or chapters they edit, and IPCC aims to select review editors with a balance of scientific, technical, and socioeconomic views.

Report Review Process

According to IPCC's policies and procedures, the report review process has three guiding principles: (1) the best possible scientific and technical advice should be included to ensure assessment reports are comprehensive and represent the latest scientific, technical, and socioeconomic findings; (2) reports should be widely circulated, ensuring review and comment by a diverse set of independent experts from a range of developed and developing nations; and (3) the review process should be objective, open, and transparent. In addition to internal IPCC informal reviews, assessment reports go through two stages of formal, external review before they are finalized. First, working group co-chairs invite experts nominated by governments, member organizations, and other experts identified by IPCC participants to review the first draft. The reviewers include scientists with expertise on topics covered in the report, as well as those nominated to serve on the author teams or as review editors by governments or contributing organizations. According to IPCC guidance, working group lead authors, in consultation with the review editors, seek to ensure that each comment provided is properly addressed, and they are encouraged to organize meetings regarding key

points of contention when possible. After all comments have been addressed and the resulting changes are made, a second draft is prepared and submitted to the same reviewers for final review and comment. The draft is simultaneously circulated to governments for their review. Once the second set of comments has been addressed, a final draft is circulated to governments and the summary for policymakers section of the report is approved line by line in a meeting of the working group.

Efforts to Help Ensure Quality and Validity of Supporting Literature and Data

According to IPCC policies and procedures, to ensure the quality and validity of literature used to support findings in the final assessment reports, authors are expected to use peer-reviewed scientific, technical, and socioeconomic literature if available. When non-peer-reviewed literature is used, it is the responsibility of the report authors, review editors, and working group co-chairs to thoroughly review such literature before it is included in the final assessment report. Author teams are required to supply detailed information regarding a non-peer-reviewed document's origins and information on the availability of underlying data supporting its findings. Working group co-chairs and the IPCC Secretariat collect and index the non-peer-reviewed sources from authors and make them available to expert reviewers upon request during the draft review process.

IPCC Has Begun to Strengthen Quality Assurance by Fully Implementing All but One of the InterAcademy Council Recommendations

IAC's review of IPCC's policies and procedures concluded that IPCC's assessment process had been successful overall but that improvements were necessary to meet future challenges resulting from the increased public scrutiny on climate change science and policy. See table 3 for a summary of the 15 IAC recommendations related to quality assurance and their implementation status, and appendix II for more details on IAC's recommendations and IPCC's response.

Table 3: Summary of IAC Recommendations Related to Quality Assurance and IPCC's Implementation Status

Category	Number of recommendations	IAC recommendations to IPCC	Implementation status
Conflicts-of-interest	1	Develop and adopt a rigorous conflict-of-interest policy that applies to all individuals directly involved in the preparation of IPCC reports.	Implementing
Review process	2	Improve IPCC's process for responding to reviewer comments and ensure that reviewer comments are adequately considered.	Implementing
Characterizing and communicating uncertainties[a]	6	Improve and standardize the treatment of uncertainty in IPCC's assessment reports.	Implementing
Increasing transparency	4	Improve the transparency of the report scoping and expert selection process, and ensure the assessment process considers a wide range of views.	Implementing
Engaging the best regional experts	1	Ensure that the most qualified experts, both in and outside of the region, participate on the author teams for regional chapters of the Working Group II report.[b]	Implementing
Clarifying the use of unpublished and non-peer-reviewed sources	1	Strengthen and enforce procedures for the use of unpublished and non-peer-reviewed literature, including ensuring that unpublished and non-peer-reviewed literature is appropriately flagged in the report.	Partially Implementing

Source: GAO analysis of IAC and IPCC information.

[a]According to IPCC documents, uncertainty is an expression of the degree to which a value (e.g., the future state of the climate system) is unknown. Uncertainty can result from lack of information or from disagreement about what is known or even knowable. It may have many types of sources, from quantifiable errors in the data to ambiguously defined concepts or terminology, or uncertain projections of human behavior. Uncertainty can therefore be represented by quantitative measures, for example, a range of values calculated by various models, or by qualitative statements reflecting the judgment of a team of experts.

[b]The Working Group II report assesses the scientific, technical, environmental, economic, and social aspects of the vulnerability (sensitivity and adaptability) to climate change of, and the negative and positive consequences for, ecological systems, socioeconomic sectors, and human health, with an emphasis on regional issues.

According to IPCC officials and documents, to strengthen the quality assurance of its reports, IPCC plans to fully implement 14 of the 15 recommendations and has begun to take the following actions:

- Developed and approved a conflict-of-interest policy to better ensure the independence of its participants and, when possible, avoid the appearance of bias, in response to a recommendation by the IAC. The draft policy defines the purpose and scope of the policy, defines

conflicts-of-interest as they apply to the IPCC, and provides an implementation plan.

- Changed its guidance to respond to two IAC recommendations to strengthen the report review process and improve its transparency. As a result of the changes, draft comments and IPCC responses will be available to the general public once the report has been published.

- Developed draft guidance on the consistent treatment of uncertainties for lead authors of the 2014 assessment report, its fifth, in response to six IAC recommendations to improve and standardize IPCC's treatment of uncertainty in its assessment reports. A final draft was presented and approved at the 33rd Session of the IPCC Panel in May 2011.

- Changed its internal guidance to better specify the selection criteria and the roles and responsibilities of its leadership and author teams in response to four IAC recommendations to improve transparency and promote diverse participation in the report scoping, expert selection, and report drafting and review processes.

- Changed its expert selection criteria in response to an IAC recommendation to better ensure that the most qualified experts, both within and outside the geographic region in question, are selected as authors for the regional chapters of the Working Group II report.

According to IPCC documents and officials, IPCC is partially implementing one IAC recommendation to enhance the scrutiny of non-peer-reviewed literature that supports findings in the final assessment reports. In response to the recommendation, IPCC is changing its internal guidance to clearly delineate the responsibilities of participants at every level of the IPCC process when using non-peer-reviewed literature to support report findings. The revised guidance makes participants responsible for ensuring the quality and validity of non-peer-reviewed sources and for improving transparency by making these sources available to the public. However, IPCC will not identify each finding in the assessment report that was supported by non-peer-reviewed literature, as recommended by the IAC.[17] According to IPCC documents and officials,

[17]The IAC committee that reviewed IPCC's policies and procedures has disbanded and was not available to comment on IPCC's response to this recommendation.

there is no standardized way to differentiate between peer-reviewed and non-peer-reviewed sources. For example, there are non-peer-reviewed scientific reports by authoritative international institutes that have been thoroughly reviewed, and, conversely, there are articles published in peer-reviewed journals that have undergone less scrutiny than some non-peer-reviewed literature. As a result, the distinction between peer-reviewed and non-peer-reviewed literature is not always clear, and peer review may not be the most useful indicator of the quality of the underlying literature.

Changes in response to IAC's recommendations have already been integrated into IPCC's policies and procedures, but IPCC officials said that some of the changes will be more challenging to implement than others. For example, implementing a uniform conflict-of-interest policy across working groups will be challenging because of the different types of contributors that the IPCC relies on for the assessments. The IPCC relies primarily on participants who do not have financial interests in climate change policy, but some working groups must rely on experts from industries or interest groups, who often have such an interest.

Even with these challenges, IPCC officials told us they have begun to take steps to address IAC's recommendations and expect 14 of the recommendations to be fully implemented by the beginning of the next reporting cycle, in 2014. Because IPCC is implementing the recommendations in the middle of an assessment reporting cycle, it may be difficult to determine if they have been successfully implemented until the end of the next reporting cycle. For example, the report scoping and expert selection processes for the fifth assessment report were initiated prior to the issuance of the IAC report. As a result, some changes to IPCC's guidance improving the transparency of the report scoping and expert selection processes will not be applied until the beginning of the next reporting cycle.

Conclusions

The United States is a major contributor of funding for IPCC's climate assessment reports. Funding data from State and NSF showed that U.S. funding for IPCC totaled $31.1 million from fiscal years 2001 through 2010, with average annual funding of about $3.1 million during that period (in constant 2010 fiscal year dollars). However, these data were not readily available to congressional decision makers in budget documents or through other means, because federal agencies that support IPCC are generally not required to report to Congress on total spending for IPCC activities. This limits the transparency of U.S. spending on these

activities. In addition, funding data we obtained from State and NSF differed from information provided to the House Committee on Energy and Commerce in 2010. These differences stemmed from incorrect reporting of (1) funding that State provided to IPCC but that was not used for IPCC activities, and (2) funding that NSF awarded, on behalf of itself and the other USGCRP agencies, to UCAR for administering the technical support unit. Without data on U.S. funding for IPCC that are accurate, consistent, and transparent across the funding agencies, decision makers will not have critical data that could inform deliberations over funding for IPCC. Transparency is particularly important, given congressional interest in this spending and the complex mechanism used to fund the technical support unit.

In addition, NSF places several conditions on the funding provided through it to UCAR to administer the IPCC technical support unit, including a requirement for an annual project review of UCAR's efforts. However, NSF did not complete this review on time and did not have it completed prior to a funding decision that was made regarding UCAR's activities for fiscal year 2011, as required by NSF's cooperative agreement with UCAR. As a result, NSF lacked additional information that could have enabled it and the other USGCRP agencies to better evaluate UCAR's progress and determine an appropriate funding level based on results.

Recommendations for Executive Action

We are making two recommendations to improve the availability of budget information and oversight of this funding.

- To better ensure that information on U.S. funding for IPCC is accurate, consistent, and transparent, we recommend that the Secretary of State coordinate with the NSF Director to determine a method for providing consolidated annual information to Congress on U.S. funding for IPCC activities.

- To improve the information available to USGCRP agencies for evaluating UCAR's progress and determine an appropriate funding level based on results, we recommend that the NSF Director adhere to the provisions of NSF's cooperative agreement with UCAR and ensure that timely annual project reviews are conducted.

Agency Comments and Third-Party Views

We provided a draft of this report to State, NSF, USGCRP, and IPCC for review and comment, and all four entities generally concurred with our recommendations. For our first recommendation that the Secretary of State coordinate with the NSF Director to determine a method for providing consolidated annual information to Congress on U.S. funding for IPCC activities, in its written comments, State agreed and said that based on our recommendation and NSF's comments related to it, State would provide information on State's contributions to IPCC activities through USGCRP's annual report, *Our Changing Planet*. State did not comment on the second recommendation which involved NSF. State's written comments are included in appendix III.

In its written comments, NSF said it concurred with the spirit of our recommendations and agreed that it was important for Congress to have information about U.S. support for IPCC that is accurate, consistent, and easily accessible. Concerning our first recommendation, NSF stated that including explicit IPCC funding information in USGCRP's annual report to Congress, *Our Changing Planet*, would provide Congress and the public with this information and that NSF would coordinate with State and USGCRP to ensure this information is included in the report. For our second recommendation that the NSF Director adhere to the provisions of NSF's cooperative agreement with UCAR and ensure that timely annual project reviews are conducted, NSF stated that given the long lead time required to effect timely interagency transfers of funds while also ensuring that project review findings inform future funding decisions, the annual review schedule, which had not been taken into account in the original cooperative agreement, has been adjusted. NSF also stated that it amended the cooperative agreement with UCAR so that the project review schedule now allows for any project review findings to be available for future funding decisions. NSF's written comments are included in appendix IV.

In its written comments, USGCRP said it agreed with our overall recommendations. With regard to our first recommendation, USGCRP said it would coordinate with State, NSF, and the other USGCRP agencies to help provide annual reporting to Congress on U.S. funding for IPCC. USGCRP said it also believed that its annual report to Congress, *Our Changing Planet*, and USGCRP's website (http://www.globalchange.gov) would be the most appropriate way to report U.S. funding for IPCC. USGCRP's written comments are included in appendix V.

In an e-mail received on November 7, 2011, from the Deputy Secretary of IPCC, IPCC generally agreed with our findings and conclusions. In its e-mail, IPCC stated, among other things, that the challenges posed by implementing some of the IAC recommendations did not get in the way of IPCC executing them expeditiously. For example, IPCC commented that revised procedures related to the IAC recommendations were approved by IPCC earlier this year and will be applied in their entirety. IPCC did not provide written comments for us to include in our report.

In addition, State and USGCRP provided technical comments and clarifications, which we incorporated as appropriate.

As agreed with your offices, unless you publicly announce the contents of the report earlier, we plan no further distribution until 30 days from the report date. At that time, we will send copies to the Secretary of State, the Directors of the U.S. National Science Foundation and the United States Global Change Research Program, the Deputy Secretary of the Intergovernmental Panel on Climate Change, the appropriate congressional committees, and other interested parties. In addition, the report will be available at no charge on GAO's website at http://www.gao.gov.

If you or your staff have any questions about this report, please contact me at (202) 512-3841 or trimbled@gao.gov. Contact points for our Offices of Congressional Relations and Public Affairs may be found on the last page of this report. GAO staff who made key contributions to this report are listed in appendix VI.

David C. Trimble
Director, Natural Resources
and Environment

Appendix I: Objectives, Scope, and Methodology

Our objectives were to examine (1) the financial support the United States has provided the Intergovernmental Panel on Climate Change (IPCC) from fiscal years 2001 through 2010; (2) conditions the United States places on its financial support to IPCC and how they help ensure these funds are spent accordingly; and (3) quality assurance processes IPCC has used in preparing its assessment reports and what steps, if any, IPCC is taking to address recommendations made by the InterAcademy Council (IAC) to enhance the integrity of the assessment process and the accuracy of the reports produced.

To respond to the first objective, we obtained and reviewed documents from the Department of State (State), the U.S. National Science Foundation (NSF), and the United States Global Change Research Program (USGCRP) about the amount and type of U.S. support provided to IPCC. This included (1) pledge letters State sends to IPCC listing the amount of support State provided, along with IPCC's acknowledgement of the funding; (2) prior information State provided in response to the March 2010 House Committee on Energy and Commerce request related to U.S. funding for IPCC; (3) approved and funded budgets related to NSF's funding for IPCC which involved the University Corporation for Atmospheric Research (UCAR); and (4) USGCRP correspondence related to IPCC funding for UCAR. We also interviewed State, NSF, and USGCRP officials about U.S. funding provided to IPCC. Additionally, we assessed the reliability of budget data through discussions with cognizant agency officials and corroborated those discussions with agency reports and budget documents. We determined the data were sufficiently reliable for our purposes.

To respond to the second objective, we reviewed relevant statutory requirements related to conditions that could be placed on U.S. financial support to IPCC. We also obtained and analyzed relevant documents, including (1) information on conditions on the funding; (2) pledge letters State provides to IPCC stating conditions on the funds provided; (3) NSF's cooperative agreement with UCAR; (4) external audit reports of the World Meteorological Organization that included the IPCC Trust Fund; and (5) external audit reports of UCAR. We also interviewed State, NSF, and USGCRP officials regarding the internal controls and oversight mechanisms the agencies have to ensure U.S. funds are spent according to relevant conditions. We also performed limited testing of transactions at NSF to verify its process for receiving funds from USGCRP agencies was adequate for the transactions that we tested.

To respond to the third objective, we reviewed the policies and procedures guiding IPCC's assessment report process and the 2010 IAC report that recommended improvements in IPCC's quality assurance framework. We focused our review on IPCC's efforts to address recommendations related to quality assurance. We reviewed the IAC report and IPCC's existing policies and procedures for preparing assessment reports, and identified the categories of IAC recommendations related to IPCC's primary quality assurance processes including recommendations aimed at (1) developing a uniform conflict-of-interest policy; (2) strengthening the review process; (3) characterizing and communicating uncertainty in the assessment reports; (4) increasing transparency; (5) engaging the best regional experts; and (6) clarifying the use of unpublished and non-peer-reviewed sources.[1] Seven recommendations related to IPCC's management structure, communications strategy, and deadlines for review comments do not relate directly to quality assurance and were beyond the scope of our review. We also reviewed a 2007 report from the National Research Council related to IPCC's policies and procedures. We interviewed IPCC officials to better understand the application of those policies and procedures, including the internal controls in place to assure the quality of the reports. In addition, we interviewed officials from IPCC, IAC, and the National Academies to determine IPCC's progress in implementing IAC's recommendations for improving IPCC's management structure and internal controls. The IAC Committee that reviewed IPCC's policies and procedures was not available for us to contact in an official capacity. According to the IAC Study Director for the review, the committee has completed their work and disbanded. We also reviewed updates to IPCC's policies and procedures made as a result of IAC's recommendations and discussed these updates with senior IPCC officials.

We conducted this performance audit from November 2010 through November 2011 in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

[1]The IAC did not identify conflict-of-interest as a separate category of recommendations, but given its relevance to quality assurance and transparency, we chose to emphasize it for the purposes of this report.

Appendix II: InterAcademy Council (IAC) Recommendations and Intergovernmental Panel on Climate Change (IPCC) Responses

Table 4: IAC Recommendations Related to Quality Assurance and IPCC's Response

Category	IAC recommendations	IPCC responses
Conflicts-of-interest	(1) The IPCC should develop and adopt a rigorous conflict-of-interest policy that applies to all individuals directly involved in the preparation of IPCC reports, including senior IPCC leadership (IPCC chair and vice-chairs); authors with responsibilities for report content (i.e., working group co-chairs, coordinating lead authors, and lead authors), review editors, and technical staff directly involved in report preparation (e.g., staff of technical support units and the IPCC Secretariat).	According to IPCC documents, IPCC is in the process of implementing a comprehensive conflict-of-interest policy. IPCC obtained input from multiple governments and multinational organizations to develop a policy catered to the specific needs of the IPCC. The draft defines the purpose and scope of the policy, conflicts-of-interest as they apply to the IPCC, and provides an implementation plan. The draft was submitted and approved at the 33rd Session of the IPCC.
Review process	(2) The IPCC should encourage review editors to fully exercise their authority to ensure that reviewers' comments are adequately considered by the authors and that genuine controversies are adequately reflected in the report. (3) The IPCC should adopt a more targeted and effective process for responding to reviewer comments. In such a process, Review editors would prepare a written summary of the most significant issues raised by reviewers shortly after review comments have been received. Authors would be required to provide detailed written responses to the most significant review issues identified by the review editors, abbreviated responses to all noneditorial comments, and no written responses to editorial comments.	According to IPCC documents, IPCC made changes to its policies and procedures specifying that all written expert and government review comments and the responses by IPCC authors be made publicly available upon completion of the report. Further, review editors will be responsible for ensuring that all review comments are adequately addressed by the authors.
Characterizing and communicating uncertainties	(4) Each working group should use the qualitative level-of-understanding scale in its summary for policymakers and technical summary, as suggested in IPCC's uncertainty guidance for the fourth assessment report. This scale may be supplemented by a quantitative probability scale, if appropriate. (5) The confidence scale should not be used to assign subjective probabilities to ill-defined outcomes. (6) Quantitative probabilities (as in the likelihood scale) should be used to describe the probability of well-defined outcomes only when there is sufficient evidence. Authors should indicate the basis for assigning a probability to an outcome or event (e.g., based on measurement, expert judgment, and/or model runs).	According to IPCC documents, in November 2010, IPCC developed draft guidance notes for lead authors of the fifth assessment report on consistent treatment of uncertainties to implement the recommendations and to provide consistent guidance on uncertainties across working groups. A final draft was presented and approved at the 33rd Session of the IPCC.

Category	IAC recommendations	IPCC responses
	(7) The likelihood scale should be stated in terms of probabilities (numbers) in addition to words to improve understanding of uncertainty. (8) Chapter lead authors should provide a traceable account of how they arrived at their ratings for level of scientific understanding and likelihood that an outcome will occur. (9) Where practical, formal expert elicitation procedures should be used to obtain subjective probabilities for key results.	
Increasing transparency	(10) The IPCC should make the process and criteria for selecting participants for scoping meetings more transparent.	According to IPCC documents, IPCC amended its policies and procedures to clearly delineate the selection criteria for participants in scoping meetings. Bureau members from each working group will make selections using criteria including expertise, range of views, geographical representation, and gender balance. Bureau members report to the IPCC Panel detailing the selection process and providing a list of selected participants.
	(11) The IPCC should develop and adopt formal qualifications and formally articulate the roles and responsibilities for all Bureau members, including the IPCC chair, to ensure that they have both the highest scholarly qualifications and proven leadership skills.	According to IPCC documents, IPCC drafted a “Terms of Reference” document defining the necessary qualifications of Bureau members, as well as the roles and responsibilities of Bureau members and the Bureau as a whole. The draft document was submitted and approved at the 33rd Session of the IPCC.
	(12) The IPCC should establish a formal set of criteria and processes for selecting coordinating lead authors and lead authors.	According to IPCC documents, IPCC plans to enhance the implementation and transparency of the existing selection criteria. In addition, IPCC revised its policies and procedures to add additional selection criteria and to require working groups to report on the author selection process.
	(13) Lead authors should explicitly document that a range of scientific viewpoints has been considered, and coordinating lead authors and review editors should satisfy themselves that due consideration was given to properly documented alternative views.	According to IPCC documents, IPCC adjusted its policies and procedures to better specify that it is the responsibility of authors to consider the full range of scientific views while drafting the report, even if they contradict one another. In addition, IPCC integrated a similar degree of specification into the guidance for author selection and the review process.
Engaging the best regional experts	(14) The IPCC should make every effort to engage local experts on the author teams of the regional chapters of the Working Group II report, but should also engage experts from countries outside of the region when they can provide an essential contribution to the assessment.	According to IPCC documents, Working Group II writing teams have already integrated the recommendation into their criteria for lead author selection for the fifth assessment report. In addition, IPCC made changes to its guidance on selection criteria that are verbatim from IAC’s recommendation.

Category	IAC recommendations	IPCC responses
Clarifying the use of unpublished and non-peer-reviewed sources	(15) The IPCC should strengthen and enforce its procedure for the use of unpublished and non-peer-reviewed literature, including providing more specific guidance on how to evaluate such information, adding guidelines on what types of literature are unacceptable, and ensuring that unpublished and non-peer-reviewed literature is appropriately flagged in the report.	According to IPCC documents, IPCC agreed with the recommendation but decided that it wouldn't be feasible to flag all unpublished and non-peer-reviewed literature in the assessment reports. Specifically, IPCC said that the distinction between "peer-reviewed" and "non-peer-reviewed" is not always clear, and that flagging thousands of titles could lead to the risk of misjudgments. However, IPCC changed its internal guidance on the use of non-peer-reviewed sources to clearly delineate the responsibilities of participants at every level of the IPCC to ensure the quality and validity of those sources, and to promote transparency by making the sources available to the general public.

Source: GAO analysis of IAC and IPCC information.

Table 5: IAC Recommendations Not Related to Quality Assurance and IPCC's Response

Category	IAC recommendations	IPCC responses
Modernizing the management structure	(1) The IPCC should establish an Executive Committee to act on its behalf between Plenary sessions. The membership of the committee should include the IPCC chair, the working group co-chairs, the senior member of the Secretariat, and three independent members who include individuals from outside of the climate community. Members would be elected by the Plenary and serve until their successors are in place.	According to IPCC documents and officials, IPCC has established an Executive Committee. The IPCC chair, vice-chairs, and the co-chairs of IPCC Working Groups I, II, and III and the Task Force on Inventories serve as voting members. Advisory members include the Head of Secretariat and the heads of the technical support units.
	(2) The IPCC should elect an executive director to lead the Secretariat and handle day-to-day operations of the organization. The term of this senior scientist should be limited to the time frame of one assessment.	According to IPCC documents, IPCC, citing inconsistencies with United Nations policy and the potential for overlap with other senior posts in the Secretariat, is not planning to create an executive director position. Instead, the roles and responsibilities of the secretary will be expanded to emphasize external relations and internal and external communication. In addition, the secretary position will continue to be an appointed position that will be reviewed by the Executive Committee on a biannual basis.
	(3) The IPCC should redefine the responsibilities of key Secretariat positions both to improve efficiency and to allow for any future senior appointments.	According to IPCC documents, IPCC began reviewing the functions of the Secretariat in 2008. However, the draft terms of reference detailing the roles and responsibilities of senior Secretariat positions are still being reviewed and will be submitted for consideration at the 34th Session of the IPCC in November 2011.

Category	IAC recommendations	IPCC responses
	(4) The term of the IPCC chair should be limited to the time frame of one assessment. (5) The terms of the working group co-chairs should be limited to the time frame of one assessment.	According to IPCC documents, IPCC changed its policies and procedures to limit the term of the chair and co-chairs to one reporting cycle, with the provision that the IPCC Panel has the right to extend the tenure of individuals in certain cases. To ensure a smooth transition, the new IPCC chair will be elected 6 months to a year before the sitting chair leaves office.
Developing an effective communications strategy	(6) The IPCC should complete and implement a communications strategy that emphasizes transparency, rapid and thoughtful responses, relevance to stakeholders, and that includes guidelines about who can speak on behalf of IPCC and how to represent the organization appropriately.	According to IPCC documents, IPCC is in the process of recruiting a senior communications manager who will report directly to the head of the Secretariat. The Secretariat will work with the Executive Committee to develop a comprehensive communications strategy that reflects the expectations of the Panel for outreach and media communications. The Executive Committee will ultimately be responsible for ensuring that IPCC's communications are appropriate and that the strategy meets the Panel's requirements. IPCC has developed some guiding principles to serve as an outline for the strategy which will be written and submitted to the Panel at the 34th Session of the IPCC in November 2011.
Expediting approval of the summary for policymakers	(7) The IPCC should revise its process for the approval of the Summary for Policymakers so that governments provide written comments prior to the Plenary.	According to IPCC documents, IPCC practice already allowed participating governments to provide written comments prior to the Plenary session, but IPCC amended its policies and procedures to clarify that written comments should be submitted prior to the session.

Source: GAO analysis of IAC and IPCC information.

Appendix III: Comments from the Department of State

United States Department of State

Chief Financial Officer

Washington, D.C. 20520

NOV 04 2011

Ms. Jacquelyn Williams-Bridgers
Managing Director
International Affairs and Trade
Government Accountability Office
441 G Street, N.W.
Washington, D.C. 20548-0001

Dear Ms. Williams-Bridgers:

We appreciate the opportunity to review your draft report, "INTERNATIONAL CLIMATE CHANGE ASSESSMENTS: Federal Agencies Should Improve Reporting and Oversight of U.S. Funding," GAO Job Code 361247.

The enclosed Department of State comments are provided for incorporation with this letter as an appendix to the final report.

If you have any questions concerning this response, please contact Trigg Talley, Office Director, Bureau of Oceans, and International Environmental and Scientific Affairs at (202) 647-3984.

Sincerely,

James L. Millette

cc: GAO – David C. Trimble
OES– Kerri-Ann Jones
State/OIG – Evelyn Klemstine

Department of State Comments on GAO Draft Report

INTERNATIONAL CLIMATE CHANGE ASSESSMENTS
Federal Agencies Should Improve Reporting and Oversight of U.S. Funding
(GAO-12-43, GAO Code 361247)

Thank you for the opportunity to comment on your draft report entitled "*INTERNATIONAL CLIMATE CHANGE ASSESSMENTS*: *Federal Agencies Should Improve Reporting and Oversight of U.S. Funding.*" We appreciate GAO's work in this area.

The Intergovernmental Panel on Climate Change's (IPCC) purpose is to produce periodic comprehensive assessments on the state of scientific and technical knowledge regarding climate change. In much the same way that the National Academy of Sciences and other bodies bring together scientists and experts to provide scientific assessments to inform U.S. decision makers, the IPCC organizes teams of scientists and technical experts who author such assessments for an international audience. This function is essential for informed international decision making on climate change, and IPCC reports in this sense have served a critical role in assessing the immense body of scientific findings relating to climate change in ways that are useful to the many institutions and individuals around the world involved in developing an appropriate response to this issue. The IPCC also coordinates the crucial task of developing guidelines for national greenhouse gas inventories, which serve as the basis for worldwide reporting of greenhouse gases.

Given U.S. preeminence in scientific research on the earth's climate system, the United States government has a unique responsibility to lead in the IPCC, and we have played this role across four successive administrations. U.S. scientists have served in leadership positions in organizing and producing IPCC assessments, and the U.S. government both has supported strong engagement by U.S scientists and an administrative process within the IPCC that is designed to produce assessments of high quality. IPCC assessments attract U.S. scientists and experts who are well-regarded within their fields as IPCC authors and review editors. Like all scientists involved in IPCC products, U.S. scientists contribute what often amounts to months of their time and expertise on an entirely voluntary basis. This is a testament to the importance ascribed to the IPCC's role by the expert community, and the commitment of the U.S. scientific community to assessments of high quality.

The United States is committed to continuous improvement in IPCC processes. Following the discovery of several errata in the Working Group 2 volume of the IPCC's Fourth Assessment Report, the United States encouraged and supported an independent review of IPCC processes and procedures by the InterAcademy Council, a consortium of major national science academies around the world (http://reviewipcc.interacademycouncil.net/). The resulting report found that the IPCC's assessment process has been successful, and made a number of recommendations in order that IPCC could continue to serve society well in the future. The review identified a number of concrete areas for improvements in IPCC processes, and as the GAO report highlights, the IPCC has responded to the recommendations in a comprehensive and timely manner. In the case of all recommendations, the IPCC response has been in line with the U.S. view of an appropriate response. It should be noted that none of the handful of errors found in the regional sections of the Working Group 2 volume of the Fourth Assessment Report change the IPCC's broader findings on climate change, which are entirely consistent with more recent assessments, including U.S. assessments by the National Academy of Sciences, the U.S. Global Change Research Program (USGCRP), and other assessment efforts.

The State Department concurs with the recommendation to provide consolidated annual information to Congress on U.S. funding for IPCC activities. The figures provided to Congress in 2010 did not provide a detailed breakdown of such activities, but we subsequently provided this information to GAO.

Consistent with the recommendation on page 21 of the draft report and the comments of the National Science Foundation, we will provide information on the State Department's contributions to IPCC activities through the USGCRP's annual report "Our Changing Planet.

With respect to State Department oversight of IPCC activities, we note that the United States, as a member government of the IPCC, reviews and approves the annual budget, approves each proposed meeting and senior staff member in the IPCC secretariat. The IPCC is also subject to rules and conditions governing USG voluntary contributions to international organizations.

Appendix IV: Comments from the National Science Foundation

NATIONAL SCIENCE FOUNDATION
4201 WILSON BOULEVARD, Room 1270
ARLINGTON, VIRGINIA 22230

OFFICE OF THE
DIRECTOR

November 8, 2011

Mr. David C. Trimble
Director, Natural Resources and Environment
United States Government Accountability Office
Washington, D.C. 20548

Dear Mr. Trimble:

The National Science Foundation (NSF) appreciates the opportunit[illegible] the Government Accountability Office's (GAO's) draft report *International Climate Change Assessment: Federal Agencies Should Improve Reporting and Oversight of U.S. Funding.*

For more than a decade, NSF has managed, on behalf of the federal agencies involved in the U.S. Global Change Research Program (USGCRP), awards to the University Corporation for Atmospheric Research (UCAR) for activities in support of the Program. These awards have included support for Intergovernmental Panel on Climate Change (IPCC) Technical Support Units (TSUs) and travel support for non-federal, U.S. scientists participating in the development of IPCC assessments and special reports. While the interagency funding support for this activity is coordinated through the USGCRP Subcommittee on Global Change Research under the National Science and Technology Council, NSF is ultimately responsible for management and oversight of the award.

NSF concurs with the spirit of GAO's recommendations—namely, regular and transparent reporting of U.S. funding support for the IPCC and timely performance reviews—but is concerned that the report, as written, misleads readers regarding both the accuracy of the funding information provided to Congress and the adequacy of information available for the USGCRP agencies' funding decision in FY2010. We are providing the following comments to help clarify and improve the report in these areas and to eliminate any confusion.

U.S. Funding for the IPCC Technical Support Unit

NSF agrees that it is important for Congress to have information about U.S. support of the IPCC that is accurate, consistent and easily accessible. It is unfortunate that an artifact of the fiscal year boundary, which underlies the discussion on pp. 8-11 of the GAO report, led to confusion regarding the year in which funds to support the IPCC TSU were provided (i.e., FY 2009 and FY2010). As we noted in previous documentation, the apparent "discrepancy" arises from the fact that a new cooperative agreement with UCAR for support of USGCRP activities, awarded at the end of FY2009, had an effective date of 10/1/09 (i.e., FY2010). Since the source of the information provided to Representative Barton regarding the IPCC TSU funding was the awardee rather than NSF, it was reported by the fiscal year in which the funds could be expended by the awardee institution (and so the fiscal year reported was, in fact, correct) rather than by the fiscal year in which the funds were obligated by the USGCRP agencies.

NSF anticipates that including explicit IPCC funding information as part of USGCRP's annual report to Congress, *Our Changing Planet (OCP)*, would provide Congress and the public with the desired information. NSF will coordinate with the State Department and the USGCRP Office to ensure this additional information becomes a part of the OCP report.

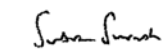
Information for the FY2010 Funding Decision Regarding Support of the IPCC TSU in FY2011

The annual project review is used to help NSF in carrying out its ongoing oversight and management responsibilities. A funding decision must be made a number of months prior to the end of the fiscal year in order to allow sufficient time for the USGCRP agencies to execute interagency transfers of funds and to ensure the availability of funding at the start of the next fiscal year. In order to meet this requirement for the second-year funding decision of the cooperative agreement, the first project review would have needed to have been completed in the first few months of the first year of the award. A review after such a short period of performance would have been of little value. NSF and the USGCRP followed long-standing review procedures of UCAR's proposed plans and budgets. During this same period, discussion of UCAR-provided support functions was part of the larger ongoing interagency development of a new USGCRP strategic plan. These discussions also helped to inform the interagency recommendations regarding funding.

Given the long lead time required to effect timely interagency transfers of funds while also ensuring that project review findings inform future funding decisions, the annual review schedule, which had not been taken into account in the original cooperative agreement, has been adjusted to accommodate both requirements. NSF has amended the cooperative agreement with UCAR so that the project review schedule now allows for any project review findings to be available for future funding decisions.

Again, thank you for the opportunity to review and comment on this draft report. NSF is committed to transparency with respect to its project funding and ensuring effective oversight of its awards. If you have any questions regarding this response, please contact Kathryn Sullivan at 703-292-7375. We look forward to receiving your final report.

Sincerely,



Subra Suresh
Director

Appendix V: Comments from the United States Global Change Research Program

United States Global Change Research Program

7 November 2011

Mr. David C. Trimble
Director, Natural Resources and Environment
United States Government Accountability Office
Washington, D.C. 20548

Dear Mr. Trimble:

I appreciate the opportunity to review the Government Accountability Office's (GAO's) draft report "International Climate Change Assessments: Federal Agencies Should Improve Reporting and Oversight of U.S. Funding.

OSTP welcomes the report and agrees with its overall recommendations. In particular, we agree with the first recommendation with regard to coordination and reporting of IPCC funding. We also agree that it is important for Congress to have information about U.S. support of the IPCC that is accurate, consistent and easily accessible, as do our USGCRP partner agencies, including NSF and DOS. Moreover, we appreciate Congressional interest in the Intergovernmental Panel on Climate Change, an organization in which USGCRP and the U.S. scientific community has long been engaged. We believe that continued U.S. involvement is the best way to ensure the development of high-quality, decision-relevant information related to climate change.

With regard to annual reporting to Congress on U.S. Funding of the IPCC, we will coordinate with NSF, DOS and all of the USGCRP agencies to develop a path forward. As we recommended in the exit interview, we believe, especially since all of the USGCRP agencies contribute to the funding for the Technical Support Unit, that the most appropriate way to report that funding would be in the USGCRP annual report to Congress, Our Changing Planet and on the program's web site, http://www.globalchange.gov.

The USGCRP is committed to improving the Nation's understanding of climate change and its related impacts and informing its response. In our continuing efforts to improve the program and enhance transparency in its activities, we welcome this report and the constructive response that it will generate.

Sincerely,

Thomas R. Armstrong, PhD
Executive Director
U.S. Global Change Research Program

U.S. Global Change Research Program, Suite 250 • 1717 Pennsylvania Ave NW • Washington, DC 20006
Tel: 202.223.6262 – Website: www.globalchange.gov

Appendix VI: GAO Contact and Staff Acknowledgments

GAO Contact

David C. Trimble, (202) 512-3841 or trimbled@gao.gov

Staff Acknowledgments

In addition to the individual named above, Michael Hix (Assistant Director), Cindy Gilbert, Tim Guinane, Jackson Hufnagle, Richard Johnson, Micah McMillan, Kirk Menard, Ben Shouse, John B. Stephenson, and Kiki Theodoropoulos made key contributions to this report.

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