

Comments on Chapter 15

Written Public Comments on the  
Strategic Plan for the U.S. Climate Change Science Program  
Chapter 15: Program Management and Review (p 162-166)  
Comments Submitted 11 November 2002 through 18 January 2003  
Collation dated 21 January 2003

Page 162, Chapter 15: A critical element that is missing from Chapter 15 is a prospectus for how the CCSP budget will be allocated among its various program elements. Although the Administration’s FY 2003 budget request has been published in the latest edition of *Our Changing Planet*, the lack of information on the allocation of this budget among various programs and research priorities within the *Draft Strategic Plan* is a significant omission. Furthermore, budget estimates that only include funding for the next fiscal year are inconsistent with the concept of a strategic plan. In order to be strategic, the plan must give considerable thought to the funding of climate change research over the next decade, not just the next year. It would also be interesting to know if the CCSP considers the FY 2003 budget request to be sufficient to achieve the goals outlined in the *Draft Strategic Plan* for the CCSP as a whole. A review of GCRP funding from 1995-2003 (based upon *Our Changing Future*), indicates no significant trend in increased funding, suggesting an effective decline (given inflation) over time in resources for climate change research. Meanwhile, the \$40 million budget for the new CCRI, combined with the broad range of research needs identified within the *Draft Strategic Plan* suggests that the CCSP is being burdened with additional responsibilities above and beyond those previously designated to the GCRP without receiving the funding support necessary to achieve these goals. The *Draft Strategic Plan* is a clear demonstration of the need for an expansion of climate change research and resources, but some indication needs to be made within the *Draft Strategic Plan* regarding which of the research needs will be satisfied and in what order. A prioritization scheme for research should be applied throughout the plan to provide the reader with an understanding of what the most critical research needs are and which research needs are most likely to be satisfied.

**VICKI ARROYO AND BENJAMIN PRESTON, PEW CENTER ON  
GLOBAL CLIMATE CHANGE**

Page 152, Chapter 15: Large amounts of funding are being made available for U.S. climate change research. *Our Changing Planet: The Fiscal Year 2003 U.S. Global Change Research Program and Climate Change Research Initiative* lists FY 2002 expenditures of \$1.67 billion and an FY 2003 request for \$1.75 billion for climate change research. In addition, the program is supported by related Department of Defense activities and on-going spaced-based, surface, and in-situ observation programs. However, questions remain concerning the way in which this budget request has been allocated: \$1.71 billion of the request is for longer-term research under the USGCRP, while only \$40 million has been allocated to the supposedly high-priority, short-term effort under the CCRI. While it is no doubt true that the CCRI is supported by many USGCRP efforts, its funding does not seem proportional to the tasks it is being asked to undertake.

## Comments on Chapter 15

1 The FY 2003 budget request for climate change research clearly shows that funding will  
2 not be available to undertake all of the activities discussed in the Strategic Plan. Project  
3 prioritization and resource allocation to the highest priority efforts are urgently needed.  
4

5 Several presentations at the Workshop described the two-tier committee structure that has  
6 been set up to coordinate activities between the 13 federal agencies involved in the  
7 CCSP. However, there was no indication that these committees would have real program  
8 management authority, i.e., the ability to shift funds between projects and to terminate  
9 lower priority or unsuccessful projects. Shifting funds between projects can be difficult if  
10 the projects are within a single agency. Shifting funds between projects in different  
11 agencies is essentially impossible with current budget procedures.  
12

13 Terminating lower priority projects or projects that appear unlikely to achieve their  
14 desired results is also very difficult. As the Marshall Institute acknowledged in its 2001  
15 report: *Climate Science and Policy: Making the Connection*,

16  
17 Terminating projects is likely to be the most difficult part of a focused research  
18 program. Researchers must be optimists, who believe that they will accomplish  
19 their objectives despite negative results. Their optimism is often contagious and  
20 can convince review boards to stay on a research path long after a more critical  
21 review would have terminated the project. Projects also develop political  
22 constituencies which will support them for a variety of reasons unrelated to their  
23 intrinsic merit.<sup>1</sup>  
24

25 CCSP will be a less effective program unless it has a management structure that can set  
26 priorities and reallocate funding across the full range of projects in the program. To be  
27 effective this authority must be independent of, or cut across, conventional agency  
28 boundaries. This is especially difficult because of the structure of the federal bureaucracy  
29 and the Congressional appropriations process. Given these constraints, the best that may  
30 be possible in the short term is close coordination with OMB during the budget process to  
31 ensure that agency requests match objectives and the establishment of matching  
32 management structures for program management. The exact management structure  
33 chosen to implement the program is less important than the authority it has for program  
34 execution. An effective management structure matches responsibility and clarity with  
35 accountability.  
36

37 Planning climate change research is analogous to driving in the fog. Past research results  
38 and the current state of theoretical understanding are the headlights that show the way  
39 forward for a short distance. Since we can see only so far ahead it is important not to get  
40 committed on the basis of presumed knowledge. The prudent approach is to proceed  
41 cautiously with sufficient flexibility to change direction as new research results  
42 illuminate a different part of the path forward.  
43

44 The current draft Strategic Plan is a useful set of guidelines for the immediate future, but  
45 as we proceed down the path it illuminates, it will become less and less useful. Strategic

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<sup>1</sup> George C. Marshall Institute (2001): *Climate Science and Policy: Making the Connection*. Pg. 23.

## Comments on Chapter 15

1 planning needs to be a recurring effort within the CCSP. The Marshall Institute  
2 recommends that a new strategic plan be developed every 3 – 5 years.

3  
4 The current draft strategic plan was developed by the federal government agencies  
5 involved in the CCSP on a short timescale and without any apparent input from outside  
6 experts. Expert input will be provided during the public comment period, but that is far  
7 less effective than having it throughout the formulation of the plan. A critical group  
8 experts are the state climatologists, who bring first-hand knowledge of what  
9 local/regional decision makers and resource managers need to know to establish rational  
10 climate policies. The Marshall Institute recommends that this group be involved in the  
11 formulation of an updated CCSP strategic plan.

12  
13 Climate change research has become highly politicized, and, as a result of institutional  
14 bias and culture, there is great pressure for researchers to provide information that  
15 supports the already established, but not validated view, that humans will change the  
16 climate to the detriment of both societies and ecosystems. While this may turn out to be  
17 true, it still is a hypothesis. Scientists are trained to be skeptics, and good researchers test  
18 every claim and hypothesis and report what the data reveal, not what is politically  
19 fashionable.

20  
21 Skepticism, controversy, and debate play an essential role in advancing knowledge. To  
22 take an example from climate modeling, early modeling approaches dismissed solar  
23 irradiance variability as an insignificant factor and even introduced assumed irradiance  
24 change opposite of what was subsequently observed. However, modelers, probably as a  
25 result of pressure from so-called skeptics, soon found that solar variability was an  
26 important factor and had to be incorporated into their models because it could improve  
27 the match of model output to past temperature change. The IPCC now concludes that  
28 solar variability was the major cause for the global average temperature rise between  
29 1910 and 1940, and several state-of-the-art GCMs now contain a solar variability term.

30  
31 Scientists must constantly try to disprove theories and challenge hypotheses. Not every  
32 claim made by those who disagree with institutional views of climate change will prove  
33 correct, but the CCSP needs to incorporate in its structure a role for healthy debate that is  
34 essential to good science practice. This is the foundation for advancing knowledge.  
35 Including mechanisms for intellectual and creative tension – a constructive “devils  
36 advocacy” process -- in the CCSP should not be difficult. The Department of Defense has  
37 significant experience in this approach through the use of “Red Teams” and the  
38 Secretary’s Net Threat Assessment office. Skepticism has been turned into a vice; it  
39 needs to be restored as a virtue.

40 **WILLIAM O’KEEFE, GEORGE C. MARSHALL INSTITUTE**

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42 Page 162, Chapter 15: First Overview Comment: The term uncertainty is utilized without  
43 any clear definition of the term. As this is the main theme of much of the report, it  
44 portrays an incorrect image of climate science that everything is uncertain and that no one  
45 can or should act until the uncertainty levels are diminished. It then goes on to lay out a  
46 high risk strategy of waiting until an unknown day for uncertainties to be reduced before

## Comments on Chapter 15

1 any action can be taken. The risks are high as the lifetime of greenhouse gases in the  
2 atmosphere is long and mitigation efforts will not take immediate effect, unlike some  
3 other pollutants. This also ignores decades of research by US institutions and others that  
4 have reduced uncertainty levels on a wide range of climate issues. A guide to the  
5 uncertainty levels is clearly included in the IPCC's Third Assessment Report.  
6 We would therefore strongly recommend that the report and the research efforts around it  
7 not revolve around reducing uncertainties per se, but rather provide new and useful  
8 information for policymakers. Finally, to infer that policymakers must have 100%  
9 certainty before taking any decisions is not consistent with the current situation. As the  
10 report notes, there are many uncertainties surrounding terrorism, but the government is  
11 not waiting for 100% certainty before taking preventative measures such as increasing  
12 security in airports.

13 **JENNIFER MORGAN, WORLD WILDLIFE FUND**

14  
15 Page 162, Chapter 15: There is little in this chapter that takes climate change research out  
16 of the hand of partisan politics. With the majority of oversight coming from political  
17 offices within administrations and the NAS (a quasi-governmental entity) there is little  
18 opportunity for oversight or participation in oversight bodies by non-governmental  
19 entities, scientists outside of academia or government, or other interested parties. Better  
20 models of oversight exist that can harness partisanship: one could envision a standing  
21 oversight committee staffed by qualified people appointed through the offices of Senate  
22 or House Environmental committees, with an even share of appointments allocated to  
23 both major political parties. Appointments would be fixed-term, not at-pleasure,  
24 affording the appointees genuine autonomy in exercising their oversight role.

25 **KENNETH GREEN, FRASER INSTITUTE**

26  
27 Page 162, Chapter 15: This chapter is rather general and would benefit from more  
28 explicit attention to how the CCSP will develop a framework for: 1) prioritization of  
29 research, management and adaptation efforts; 2) integration across agencies, disciplines,  
30 scales, etc; 3) developing a mechanism for implementation of priorities that are selected;  
31 4) ensuring accountability in producing results in approved research areas.

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33 Please see section V, First Overview Comment, for some issues to consider with regard  
34 to Ecosystems when planning a management framework.

35 **JORDAN M. WEST, USEPA/ORD**

36  
37 Page 162, Chapter 15: The long list of layers suggests that careful management will be  
38 needed so that "turf wars" do not reduce progress on the research.

39 **ANN FISHER, PENN STATE UNIVERSITY**

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41 Page 162, Chapter 15: An adequate review of the activities and progress of all facets of  
42 the strategic plan, including the interactive activities with local, state, and regional  
43 decision makers, requires expertise from state climatologists, regional climatologists, and  
44 private sector providers of climate information. The NRC alone is not enough to provide  
45 an adequate overview of the proposed program.

## Comments on Chapter 15

### 1 **S.A. CHANGNON, ILLINOIS STATE WATER SURVEY**

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3 Page 162, Chapter 15: The governance structure of the CCSP should reflect the  
4 importance of states and regions in the conduct of research in at least five of the seven  
5 topic areas -Water, Carbon, Land Use/Land Cover, Ecosystems, and Human  
6 Contributions – as well as in what we would like to see as a revised Chapter 13:  
7 Permanent and Experimental Dialogue on Global Change Science and Policy. We  
8 suggest that regional projects be established for different regions of the nation, with a  
9 large proportion of the research program in those topic areas, the access to more powerful  
10 computing and the relationship to decision-making operating through those regional  
11 projects.

12  
13 Second Overview Comment: Technology is a key part of the national adaptation strategy.  
14 The results of the CCTI therefore are germane to the questions examined via the  
15 integrated assessment models to be developed under the CCSP, yet the governance of the  
16 two programs touches only at the Undersecretary level on the IWGCCST. The  
17 governance structure must facilitate exchange between the researchers in each program at  
18 a much lower level.

### 19 **CALIFORNIA RESOURCES AGENCY**

20  
21 Page 163, lines 5-14: Where does Chapter 12 come in?

### 22 **ANTONIO J. BUSALACCHI, EARTH SYSTEM SCIENCE** 23 **INTERDISCIPLINARY CENTER (ESSIC), U. MARYLAND**

24  
25 Page 163, lines 35-36: Support for the NRC/NAS needs to be provided more generously  
26 than it has been if the various activities indicated are to be undertaken. In addition, the  
27 NAS/NRC need to be allowed some discretionary funding so they can show initiative in  
28 reviewing and aiding various parts of the program.

### 29 **MICHAEL MACCRACKEN, LLNL (RETIRED)**

30  
31 Page 164, line 1: The CLIVAR Science Plan predates both water and carbon, yet is not  
32 mentioned here. This is illustrative of the lack of coordination and continued  
33 impediments.

### 34 **ANTONIO J. BUSALACCHI, EARTH SYSTEM SCIENCE** 35 **INTERDISCIPLINARY CENTER (ESSIC), U. MARYLAND**

36  
37 Page 164, line 16: Actually, it has been very helpful having the various agencies have a  
38 range of programs rather than all marching in lock step. The scientific community has  
39 been quite blind to this in pushing for much tighter coordination. On an issue as complex  
40 and uncertain as global change, it is surely best to have a range of approaches (and this  
41 would certainly be the type of lesson other such programs would pass along). Over-  
42 coordination can be a disaster and lead to missing many key items.

### 43 **MICHAEL MACCRACKEN, LLNL (RETIRED)**

44  
45 Page 164, lines 18-29: Oversight of key linkages not clear.

## Comments on Chapter 15

1 **ANTONIO J. BUSALACCHI, EARTH SYSTEM SCIENCE**  
2 **INTERDISCIPLINARY CENTER (ESSIC), U. MARYLAND**

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4 Page 164, lines 26-29: Where is the cross-cut for these?

5 **ANTONIO J. BUSALACCHI, EARTH SYSTEM SCIENCE**  
6 **INTERDISCIPLINARY CENTER (ESSIC), U. MARYLAND**

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8 Page 164, lines 32-34: This notion that all agencies should absolutely agree is really non-  
9 sense. If everyone agrees, what is there to be learned—new insights come from where  
10 there are differences in perspective and approach. Getting full agreement will  
11 unfortunately become the goal rather than the mode of having assessments that indicate  
12 the size of the umbrella needed to cover the range of expert opinion. I really think that the  
13 agencies here need to back off and commit to supporting sound research rather than  
14 research that they all agree on.

15 **MICHAEL MACCRACKEN, LLNL (RETIRED)**

16  
17 Page 165, line 4: There is nothing here explaining how the Executive Office of the  
18 President and its office fit in—what their roles and, more importantly, responsibilities  
19 are, for making this happen.

20 **MICHAEL MACCRACKEN, LLNL (RETIRED)**

21  
22 Page 165, line 13: **(58-P)** This one is very politically loaded, so consider it only a  
23 suggestion. It's my understanding that all Federal agencies are now being reviewed with  
24 more and more attention to quantitative measures of performance. Would it therefore be  
25 politic to change line 13 to read: ..."that meet agreed criteria and performance measures  
26 in the following areas:" ? If the answer to this is "yes", there may be other places in this  
27 section where such language would be appropriate as well.

28 **HP HANSON, LANL**

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30 Page 165, lines 23-28: It would be nice to have wider review, allowing stakeholders and  
31 other commentators to have input.

32 **MICHAEL MACCRACKEN, LLNL (RETIRED)**