

FOIA MARKER

This is not a textual record. This is used as an administrative marker by the William J. Clinton Presidential Library Staff.

Collection/Record Group: Clinton Presidential Records
Subgroup/Office of Origin: Council of Economic Advisers
Series/Staff Member: Joseph Stiglitz
Subseries:

OA/ID Number: 9555
FolderID:

Folder Title:
Debriefing on IPCC [Intergovernmental Panel on Climate Change] Lead Authors WGIII [Working Group 3] Meeting in Vienna, Thursday 12/8/1994

Stack:	Row:	Section:	Shelf:	Position:
S	20	5	7	1

Withdrawal/Redaction Sheet

Clinton Library

DOCUMENT NO. AND TYPE	SUBJECT/TITLE	DATE	RESTRICTION
001. fax	To Joe Stiglitz from Ruby Saha [8 USC § 1202(f)] (1 page)	12/06/1994	P3/b(3), b(6)
002. fax	To Joe Stiglitz from Ruby Saha [8 USC § 1202(f)] (1 page)	12/02/1994	P3/b(3), b(6)
003. memo	To Joe [Stiglitz], re: debriefing [PII] [partial] (1 page)	11/28/1994	b(6)
004. fax	To Joe Stiglitz from Ruby Saha [8 USC § 1202(f)] [duplicate] (1 page)	12/02/1994	P3/b(3), b(6)

COLLECTION:

Clinton Presidential Records
Council of Economic Advisers
Stiglitz, Joseph
OA/Box Number: 9555

FOLDER TITLE:

Debriefing on IPCC [Intergovernmental Panel on Climate Change] Lead Authors WGIII
[Working Group 3] Meeting in Vienna, Thursday 12/8/1994

2017-1095-F

bg240

RESTRICTION CODES

Presidential Records Act - [44 U.S.C. 2204(a)]

- P1 National Security Classified Information [(a)(1) of the PRA]
- P2 Relating to the appointment to Federal office [(a)(2) of the PRA]
- P3 Release would violate a Federal statute [(a)(3) of the PRA]
- P4 Release would disclose trade secrets or confidential commercial or financial information [(a)(4) of the PRA]
- P5 Release would disclose confidential advice between the President and his advisors, or between such advisors [(a)(5) of the PRA]
- P6 Release would constitute a clearly unwarranted invasion of personal privacy [(a)(6) of the PRA]

Freedom of Information Act - [5 U.S.C. 552(b)]

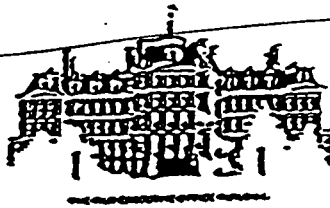
- b(1) National security classified information [(b)(1) of the FOIA]
- b(2) Release would disclose internal personnel rules and practices of an agency [(b)(2) of the FOIA]
- b(3) Release would violate a Federal statute [(b)(3) of the FOIA]
- b(4) Release would disclose trade secrets or confidential or financial information [(b)(4) of the FOIA]
- b(6) Release would constitute a clearly unwarranted invasion of personal privacy [(b)(6) of the FOIA]
- b(7) Release would disclose information compiled for law enforcement purposes [(b)(7) of the FOIA]
- b(8) Release would disclose information concerning the regulation of financial institutions [(b)(8) of the FOIA]
- b(9) Release would disclose geological or geophysical information concerning wells [(b)(9) of the FOIA]

C. Closed in accordance with restrictions contained in donor's deed of gift.

PRM. Personal record misfile defined in accordance with 44 U.S.C. 2201(3).

RR. Document will be reviewed upon request.

PLEASE DELIVER IMMEDIATELY! THANK YOU!



**EXECUTIVE OFFICE OF THE PRESIDENT
COUNCIL OF ECONOMIC ADVISERS**

Date: 11/29/94

Please deliver to: Sally Kane
c/o Pat Wagner, IIASA
9-011-43-2236-71313

9-011-43-1-40-412-761
9-011-43-2236-807

FAX number of addressee: _____

Telephone number of addressee: 9-011-43-1-40-412

From: JOSEPH E. STIGLITZ, MEMBER/
Lisa D. Branch, Exec. Assistant

FAX number of sender: 202-395-6958

Telephone number of sender: 202-395-5036

Number of pages, including cover sheet: 1

Sally, Joe agrees to the Lead Authors debriefing. He ask that you ask as many of the authors there if they're available to meet in his office on Thurs, 12/8, from 3 - 4:30pm. I've talked to Goldemberg; time slot ok with him. Contact me soon re your progress. Thanks.

Lisa

WGIII Peer Review

November/26/1994

Page: 1

Reference			Comments	Reviewer	ID	Response
Section	Page	Line		(Country #)		
01 Scope of Assessment						
0	0	0	1. This Chapter is well written and well organized. 2. It would be useful to include in the discussion of policy the transactions costs of particular actions. 3. The population issue and its relevance for the demand for environmental services should be given even greater emphasis. Also it should be linked to rising world income as the threat is the product of the two.	USA	12	i • ✓ • OK • population issue will be treated thus 1. Real concern is emissions not important to climate change 2. Other than for emissions? No. but very important for development
0	0	0	Cannot imagine a case where there are negative costs, except in cases where distortions are removed(eg, government fuel subsidies); but those distortions are not implied. What is implied are engineering solutions but there are costs that economists have failed to identify.	UK	18	g • We believe there exists some opportunities to both reduce emissions and reduce total cost
0	0	0	Re: nuclear energy. Seems appropriate to mention (i) decommissioning nuclear plant not established technology, (ii) external costs hidden regarding nuclear power related damage,(iii) efforts being made to develop intrinsically safe nuclear reactors,	MEX	34	i • No. Not the concern of scope chapter
0	0	0	There are occasional references to "economics and social sciences" but this particular chapter focuses, almost exclusively, upon the former.	UK	40	i • Yes. Will clarify.
0	0	0	Starting in the Summary for Policy Makers and also in the Scope of the Assessment no mention is made of social actions or research directed to modifying excessive consumption of energy and materials by industrialized nations ; thus one is ignoring the statement in UN guide to Agenda 21 that calls for "a practical strategy to bring about a fundamental transition from the wasteful consumption patterns of the past to new consumption patterns based on efficiency and a concern for the future".	MEX	34	i • Will mention market failure and non-optimal consumption of environmental resources in the presence of externalities
0	0	0	The Chapter as written is sloppy and misses vision and has no line to it; needs to be completely re-written. It is teeming with weakly related concepts, empty statements, confusing statements while important notions are missed.	NED	46	i • No.
0	0	0	The majority of the report is embedded in economic language, reflecting the prepor.dence on the panels, particularly welfare economists. While this presents an interesting and important angle to the discussion, a broader view of the world is	DEN	42	i • No. Chapter is written as part of a scientific assessment, representing a scientific point of view

WGIII Peer Review

November/26/1994

Page: 2

Reference			Comments	Reviewer (Country #)		ID	Response
Section	Page	Line					
			required. Since the time horizon of the study is 2100, the restrictions imposed by current economic theoretizing are largely irrelevant and scientists with more suitable background may have been more appropriate. More specifically, the lack of generally valid theories able to describe economic behaviour both in the short and certainly in the long term are particularly troublesome in relation to the questions being addressed in this report. Examples will be given . In addition to the general impact of the lack of suitable theories, there is a strange "positive spirit" over many of the deliberations, e.g. expressed in Chapter 6. This may be due to the fact that the work is performed under the auspices of the UN. However, in the real world, the achievement of providing a high living standard for the planet is highly unlikely and is in contradiction to the behaviour of those countries following conventional market economic rules. Even if the development should move in the direction of global economic equity, despite population pressure differences, then it is difficult to discern tendencies toward change of the present political climate, characterized by a situation, where a majority of the world population does not enjoy democratic rule. What are the mechanisms that will change this picture into one cherished democracy not only within each country, but manifesting itself in terms of global solidarity? A more realistic situation is one in which countries refuse to do their share of GHG abatement and raises questions as to whether the "good guys" are prepared to go to war to force the GHG policies into effect. The question is of course absurd giving the varying military strengths of countries. The portfolio of possible actions should include the establishment of fair pricing in the energy sector. This means valuing as many externalities as possible, despite the difficulties and uncertainties involved . This may well be the single most important action capable of making real progress in reaching emission goals.				
0	0	0	This chapter stresses the potential increase in the GHG emissions in the GHG emissions in the developing countries in the future decades as the major threat to the global climate change problem (when the facts are opposite as they stand today). The present emissions of Annex 1 countries are large and their future emissions are going to be larger for nearly 3 to 4 decades. By concentrating on what may happen 5 decades from now, the basic issues of immediate importance are being evaded. There will be ample opportunity in the future to discuss these issues once Annex 1 countries reduce their emissions. Our successors can take up these issues 20 years hence. To quote Elizabeth Dowdeswell, ED of UNEP, "It has been said, correctly, that the rapid	IND	45	1	Yes. Will incorporate Yes. Will quote FCCC that Annex I countries should take the lead, "common + differentiated responsibilities". At the same time, long-term concerns remain.

WGIII Peer Review

November/26/1994

Page: 3

Reference			Comments	Reviewer (Country #)		ID	Response
Section	Page	Line					
			industrialization of the 19th century precipitated the climate crisis. This is further interpreted as the industrialized countries enjoying a century-long free ride on the road to development and now as new developing countriesthey are being asked to pay the fare. It is?? A mischief has been done and a penalty must be paid". RGS, UK May 1994..				
1	1	13-17	Not only does climate change have implications for human activities, but human activities have implications for climate change. As presented now, the the relationship is suggested to be "one-way".	UK	40	1	Yes
1	1	14-50	Line 14 - Change "will be" with "might potentially". We cannot be certain that reductions WILL be required given the uncertainties. Line 23 - Replace "is likely to" with "could potentially". Lines 49-50 - This sentence should be deleted as it goes well beyond the stated task of the WG - to analyse issues as broadly as possible.	USA	68	1	No. changes implication No. ditto No. sentence is relevant
1	1	35	The commitment of resources to mitigate climate change rests on THREE arguments-- the two given plus:3 At some point, the costs of climate change to humanity and the ecosystem may exceed the costs of undertaking the steps necessary to avoid certain degrees of climate change. With this addition, line 47 still holds.	API	76	a	No. Not parallel with other 2.
2	3	7	"Although most attention to date has focused on negative impacts": this statement can be interpreted to mean that up to now the debate has been biased toward the negative aspects. Proposed change: "Although it is likely that most impacts will be negative..."	ITA	48	1	No. statement true as it stands.
2	3	15-19	Economics can only contribute to the debate within the context of sound science. Therefore it is important to factually state the nature of the large uncertainties that exist in science. These lines do and should stay in the report.	API	76	a	✓
2	3	32	Add to footnote 10: After 1st sentence add - "Manabe and Stouffer (Nature, 15, vii, 1993 p215) report studies of a linked ocean-atmosphere circulation model which shows the North Atlantic Current ceasing to flow at four times CO2. The uncertainties attending on such modeling cannot leave us confident that the effect would not arise with the 2 times CO2 forecast before 2100 on business as usual assumptions" and at end "One homoestatic response of the Gaia could be to eliminate the species that is causing the trouble, possibly be developing drug-resistant varieties of sexually	NWZ	37	1	No. Not the place for to promote unconventional views in outside of field of interest.

WGIII Peer Review

November/26/1994

Page:

4

Reference			Comments	Reviewer (Country #)		ID	Response
Section	Page	Line					
			transmitted diseases." This irony should be interpreted as an opinion that the Gaia "hypothesis should find no place in professional scientific discussion).				
2	3-4	0	Lines 6-7 - Examples of these positive impacts should be noted in order to provide proper balance to the discussion. Line 37 - Replace "likely to" with "could" P4 lines 31-32 - This sentence is inconsistent with the first sentence of the paragraph and should be deleted.	USA	68	i	Yes. will mention warmer climate No Yes. clarify
2	4	30	Delete two sentences beginning "It seems unlikely": substitute "Climate has changed in the past and ecosystems have adapted, sometimes by dying. A period of relative climate stability - as since the last glaciation - results in an adapted ecosystem which suffers from change in either direction, especially rapid change. The adaptability of intelligent species is likely greater than that of natural ecosystems, but is diminished by increasing social interdependence (complexity) and by population levels that preclude the substantial migrations of pre-history, e.g. out of and into Northwest Europe.	NZW	37	i	Point in short-run vs long run effects. Reply to offer suitable wording.
3	5	0	Re. Box. This is a poorly defined box. Risk is not defined. Risk is when the probabilities of a variety of possible events are known. Uncertainty is when the probabilities are not known, and/or some or all potential outcomes are unknown.	API	76	a	Yes. Fu. Knight
3	5	15	In Box: add to definition of uncertainty. "Uncertainty can stretch from pure ignorance of the range of possible outcomes, through a taxonomy that eschews quantification, via subjective judgements of relative likelihoods (possibly using a Delphi type poll of experts), to statistical probabilities based on relevant experience (of which, as regards elevated levels of GHGs there is none)." add to definition of Expected return - "Its calculation required estimates of the probabilities of possible outcomes, or at least well founded expert judgements".	NWZ	37	i	Yes. Fu.
3	5-15	0	This whole section is a grab bag as if some words from the environmental economic slang are selected and some remotely connected concepts arranged under it. Why are "emission reduction strategies" under "dynamics" and not "sequential decision analysis"? Why is the Kaya-identity not an economic identity and why is a very basic concept such as CBA missing? Are these really the main contribution of economics? Re. section 1.3.1 the following phrase is used which is at odds with the policy makers summary version(which is correct); "Risk. The uncertainties associated with climate	NED	46	i	Yes. will reward.

WGIII Peer Review

November/26/1994

Page: 5

Reference			Comments	Reviewer (Country #)		ID	Response
Section	Page	Line					
			change are large." There needs to be interaction between chapter authors or at least reading the other chapters of the report. Another quote that is considered correct but empty; "Uncertainty arises when a decision can lead to more than one outcome". It is certainly not scoping the concept of uncertainty when climate change is in mind.				No. leads to next definition.
3	6	29-32	This suggests that policy makers should go beyond no-regrets. This is not consistent with Ch 5 P11 Fig 4.1 which shows that, for the UK, 50% of the potential CO2 abatement could be achieved at no net cost. However, intervention may be required to promote these investments.	NED	71	i	Restate: "Economics provides the rationale for making..."
3	6	34-38	This paragraph should be deleted on several grounds. First, whether going beyond "no regrets" is prudent is a policy judgement - outside the scope of this document. Second, the Bush administration funded research into no- and low-carbon technologies and research to expand knowledge of the climate system. These actions did incur positive costs.	USA	68	i	Ditto.
3	6	44	Active responses as part of insurance strategy: Good point.	ITA	48	i	✓
3	7	3	After "new" insert "energy"	NWZ	37	i	Yes
3	7	4-5	These lines must stay in the report as a very important finding.	API	76	a	✓
3	7	23	This appears to be the case for earthquake insurance in California.	USA	12	i	✓
3	7	31-39	In order for the paragraph to be complete, there also should be reference to the problem of inertia that offers a different perspective - see Chapter 8 P17	ITA	48	i	check ch.8
3	7-8	49-1	Correct sentence to read "Timing of reductions in greenhouse gas emissions should reflect differences in costs, discounting(to evaluate those costs), risks, and uncertainty."	API	76	a	Yes
3	8	12-16	I believe the discussion of the first and second terms is reversed. Fuel switching would affect the first term, CO2, per unit energy, while end-use efficiency improvement would affect the second term, energy per unit output.	USA	68	i	Yes
3	8	22-25	Change to: "Annex 1 countries contribute more than two thirds of total world GHG emissions today. There is a need to control their emissions to allow developing countries to grow to achieve adequate living standards.	IND	45	i	Revised, adding reference to framework convention distinguish facts/history

WGIII Peer Review

November/26/1994

Page:

6

Reference			Comments	Reviewer (Country #)		ID	Response
Section	Page	Line					
			Comment: Annex 1 countries should exercise control over their emissions first and then help developing countries improve their energy efficiencies also.				
3	8	29-30	Before "...of magnitude" substitute "Some order" and before ; (b) insert "while others suggest that a coordinated breaking down of barriers to information and the purposive Research and Development and Demonstration of sustainable energy systems and would lead to a beneficial shift into an alternative path of energy sectoral development. Essentially that latter claim suggests that a long term bifurcation presents itself in the energy sector and that (beyond using up lower cost oil and gas reserves) we have insufficient knowledge to be sure that a fossil fuel (coal) based business as usual future is likely to be lower cost than its alternatives, regardless of any weight placed on the GHG externally (edmonds et al, Johansson et al etc....). The need for public good R&D&D arises because of informational market failure, in particular the unwillingness of energy firm management s to devote the scarce resources of time and attention to anything beyond fossil fuel business as usual (see also section 1.5.3. comments)	NWZ	37	1	No. Doesn't add to chapter
3	8	40	The fish example is a poor one. Today, the maximum sustainable yield (MSY) as determined by partial equilibrium stock recruitment models has been rejected.	USA	12	1	Use another example if criticism confirmed
3	9	8	The supply of coal etc. is a function of price - not a physical quantity.	USA	12	1	Spelling simplification
3	9	9	This sentence is not consistent with the sentence on line 22 and should be deleted. Hopefully we are not sure that all fossil fuel resources will be consumed.	FRA	70	1	No. point stands
3	9	11-16	This refers to three phases of economic development. I am not aware that this is a normal development sequence (at lease historically) and the Fig 2 referenced was not provided.	NED	71	1	Choose another term to replace "economic development"
3	9	12-16	It is not only coal that matters but also gas,oil and other fossil resources.	FRA	70	1	Fixed above
3	9	29	All low emissions scenarios display a key role for bio-fuel, which (apart from fuel-wood) is currently in widespread use in several countries, notably Brazil. Thus the backstop technology is already with us, with leading edge technological power generation applications available by the end of this decade. The issue is not one of the timeliness of its arrival but of developing an appropriate framework for weaning the commercial energy sector off its infant diet of fossil fuel, and of transferring the relevant technology on terms sufficiently attractive to developing countries to ensure that they do indeed choose to leap over the fossil fuel stage of development. Hence	NWZ	37	1	No. Scientific Assessment is not the place to stage a campaign for a minority position in another discipline.

WGIII Peer Review

November/26/1994

Page:

7

Reference			Comments	Reviewer (Country #)		ID	Response
Section	Page	Line					
			delete the final two sentences of this paragraph and substitute "depending on the speed of take-up of a Low Emissions Supply System (see WG2a chapter on Energy Supply Mitigation Options) the insurance provided by oil and gas reserves will be more or less expensive, with the inter-temporal pattern of taxation (see 1.5.5.5 below) serving to eke out low cost supplies encouraging exploitation of higher cost reserves. The pattern of alternative technology take-up can be expected to vary between regions, with greater reliance on nuclear energy and on end-use efficiency at higher latitudes - also in more densely populated areas - and with biofuel dominant in the more sparsely populated developing regions, leading to biofuel product exports e.g. methanol and the broad levelization of energy process subject to transport cost differentials". Maybe employ the opening sentences of this comment as endnote 22a.				
3	9	47-48	It may be of no help to quote possible misunderstanding of what "sequential decision making" means; suggest the sentence be deleted.	FRA	70	i	• Clarify term
3	9	49	The statement beginning "The next several..." must stay in the report.	API	76	a	✓
3	9-11	0	Figures are not to hand, but from the text, I guess it is appropriate to substitute for "economy", Modern economy" (i.e. neglecting history's coal-based industrial revolution).	NWZ	37	i	• No.
3	10	13	The reader may not know what are "the standard assumptions" of optimal decision making under uncertainty.	FRA	70	i	• Rewrite sentence, with less jargon
3	10	18-21	The most important irreversibilities in the case of climate change seems to be missing here. They arise from today's choice of long living capital expenditures: housing, transport infrastructure, urban planning. Early mitigation expenditures may preserve options of avoiding later mitigation expenditures at higher costs, as well as avoiding later adaptation costs.	FRA	70	i	• OK
3	10	29-30	Atmospheric concentrations of GHG are mainly the result of Annex I countries, but countries bear different responsibilities in aggravating the climate change problem to the present dimension. This clause should be added to bring out the current policy response.	IND	45	i	• Refer to differentiated responsibilities
3	11	2-3	Similar to "mitigation", one should "global environmental space" also as an international public good.	IND	45	i	• Refer to absorptive capacity of environment
3	11-1	0	Re: box on this page; delete "the economy" in the definition of externality.	CAN	23	i	• OK (typo)

WGIII Peer Review

November/26/1994

Page: 8

Reference			Comments	Reviewer (Country #)		ID	Response
Section	Page	Line					
3	12	1	The words "weight of the tax" should be replaced by "burden of effort" with which it should not be confused. The level of carbon tax will determine the marginal(microeconomic) cost of emission avoided, but not the average macroeconomic cost of the tax which will include enrgy savings, revenue recycling and so on.	FRA	70	1	OK
3	12	8-13	It would be useful to include in the discussion of policy the transaction costs of particular actions.	USA	12	1	Mention somewhere in Chapter
3	12	15-24	Industrial countries knew threat of global warming from the mid 1970s and could have acted. Therefore, the polluter pays principle ^(PPP) should be applicable from that time.	GER	50	1	Clarify PPP, and state that it is not the same as the ethical argument
3	12	26-29	Though there is only 25% increase in GHG concentrations so far, it is not to be interpreted that the Annex 1 countries have completed their contribution to the GHG increase. Non Annex 1 countries will also add to it due to much needed development.	IND	45	1	Accounting for emissions does not imply proportional financial responsibilities; clarify
3	12	33	Re: box on this page; delete "the economy" in the definition of externality.	CAN	23	1	✓
3	12	36	High population density also has positive network-related externalities. A small population spread over a huge country profits less from the partition of labour and has higher relative costs of transport.	GER	50	1	Population references to be revised.
3	12	46-48	Politically it is easier the other way round: grandfathering emission rights and changing the allocation gradually towards a per capita basis. To prevent moral hazards, the per capita basis can be a year in the past.	GER	50	1	ditto
3	13	27-31	Knowledge and technology can also be transferred via JI.	GER	50	1	✓
3	13	29	after "But" delete "need" and insert "there does need to " for correct grammar.	NWZ	37	1	✓
3	13	36	The "issues of efficiency and equity should be seperated" deserves to be mentioned in the summary and recognized more consistently in the text. How much CO2 emissions should be reduced in what country is a matter of efficiency; who pays is a question of equity. The issue is posed as follows: Issues of how future emissions (or abatement efforts) should be allocated and who	IEA	66	1	OK

Reference			Comments	Reviewer		ID	Response
Section	Page	Line		(Country #)			
			pays for abatement, form some of the most contentious equity issues in climate policy... The two questions are closely intertwined; in the absence of seperate international transfers associated with abatement, the initial distribution of emission constraints will largely determine the distribution of costs. (ch 3, v.1, lines 1-5) Since the usual assumption is that the nation that does the abatement pays for it, it must be made clear that that is not necessarily the case. For an efficient allocation of emission abatement, modeling can produce comparable marginal cost curves among countries as illustrated in Chapter 7, Figure 3, page 26 taken from Kram (1994b) If one accepts that the most efficient allocation of emission reductions would be at the point of equal marginal costs, this provides another argument why options should be implemented jointly, irrespective of the issue of how the financial burden is shared among the countries (Ch 7 p. 26. 13-18) Similarly, Smith et al imply that the payments they consider would go to an international fund would then be used to finance abatement at the lowest marginal cost, wherever that might b, to the degree determined by total abatement specified (ch 3 v 5, last paragraph). The authors of Chapter 3 describe this as a "highly simplified picture of the abatement problem, in which the only interrelationship between countries is the impact of greenhouse gas emissions and deliberate financial transfer associated with paying for abatement..." (Ch 3, v6, first para.) A succesful precedent exists, however, in the use of estimated national abatement cost curves in the IIASA RAINS models for financial exchanges in Europe to reduce acid rain emissions at least cost. The distinction between efficiency as the criterion for allocating emissions and equity				

WGIII Peer Review

November/26/1994

Page: 10

Reference			Comments	Reviewer (Country #)		ID	Response
Section	Page	Line					
			as the criterion for allocating costs is not drawn in Chapter 3 Equity and Social Considerations. For example, it is stated that the equity issues in responding to climate change comprise "distribution of future emissions" as well as costs. The authors go on to speak of "... a fair distribution of future emissions (which) may depend somewhat upon how much other countries help others with the costs of coping" (Ch. 3, III.7, Paragraphs 2 & 3)				
3	15	4-22	Relocation argument rather weak. Huge differences in energy prices between different industrial countries lead to massive relocation of environmentally industries. See P. Sorsa: Competitiveness and environmental standards. Some exploratory results, World Bank Policy Research Working Paper 1249, Washington, February 1994.	GER	50	1	Text does not address this option.
3	15	6-22	While the issue of leakage is a matter of great frustration, this discussion and conclusion is accurate and needs to remain in report.	API	76	a	✓
5	19	4	The sentence should be edited to read "Striking the appropriate balance and sequence of policies requires taking into account the costs, benefits and risks associated with each strategy."	API	76	a	No. unnecessary
5	19	7	delete "plus" insert " or an extra dollar of"; there are three marginal costs, all of which should be equal for efficiency.	NWZ	37	1	OK
5	19	12	The sentence should be edited to read "What policy actions would improve economic efficiency(including the social costs of implementing the policy) and reduce net greenhouse gas emissions."	API	76	a	OK
5	19	31-33	delete sentence beginning "Some properties" and insert new sentence "The questions turn upon a large number of issues - some of which are inseparable from the value system used by the decision-taker - as to the feasibility and attractiveness of alternative directions of technological progress in the energy sector and the extent to which the choice is open to policy intervention." (This relates to the suggested redrafts for p8 lines 29-30 and p24 lines 9-11.)	NWZ	37	1	No
5	19	45	subhead 1.5.2.1. to read :Removing Energy and Land Use Subsidies" with additional sentence at p 20 line 6: "Subsidies of \$??b, annually, paid to farmers in the US and Europe to keep farmland idle, act as a disincentive to bio-fuel production" and add new endnote "49a The question of sustainable land use is closely linked with energy sustainability. Critics of high energy input farming point to diminishing and eventually negative yields to additional organic fertilizer inputs, as the natural humus content	NWZ	37	1	Put agricultural subsidies in discussion of afforestation incentives

WGIII Peer Review

November/26/1994

Page: 11

Reference			Comments	Reviewer (Country #)		ID	Response
Section	Page	Line					
			becomes exhausted (Hall, C.A., various writings) Long-term sustainability may be achieved by several decade rotation, with a few cycles of short rotation woody biomass production employed to restore humus content, and raise deeper level nutrients, alternating with food production that is more soil conservative than current practices. This raised the question of option value of failing to use land to sequestered carbon in the next few decades, before rising population and falling agricultural productivity cause the opportunity cost of land to increase"				
5	20	19	Delete "the" and "most" (in this reviewers opinion, the most important action that governments can take is the purposive program of R&D&D mentioned in relation to p8 lines 29-30.	NWZ	37	1	✓
5	20	34	The content of footnote 51 seems to be very important and should be put in main text here.	FRA	70	1	• some example of kind use to be included.
5	20	35	add new paragraph: "Local Government Land Use Planning. Detailed land use allocations decisions are currently made without regard to sustainable energy criteria, yet a site location decision has very long term impacts (especially with the NIMBY syndrome causing successive generations of plants to be located at the same place). Natural gas can be transported cheaply whereas bio-fuel in its raw state cannot. Thus, current locational decisions for gas fired power stations need to take account of prospective supplies of biofuel produced on surplus farm land.	NWZ	37	1	• Reply to provide text
5	21	46-48	A host of examples indicates that they are indeed leaving money on the table because of short-sightedness, lack of information and business-as-usual thinking. Graz in Austria has therefore installed a public consultancy which found huge range of no-regret options in small and medium sized enterprises. See K. Niederl, H. Schnitzer: Okoprofit Graz. Nachhaltiges, innovatives Wirtschaften, Graz, 1994.	GER	50	1	• goit encourage extension of markets, provision of information.
5	22	18	Providing and disseminating information may also be one purpose for state agencies.	FRA	70	1	✓
5	22	34	Add new sentence: Essentially, technological bifurcations, whether in the transport or energy sectors, represent possibilities of dynamic global optima that cannot be approached through the precess of successive local optimisations that, with appropriate convexity assumptions, yield the competitive market's Pareto optimum".	NWZ	37	1	• No.
5	22	44	what is a " government market rate of interest" (what is a government market)?	NWZ	37	1	• "market rate for long-term government bonds"
5	24	11	Add to footnote 71; "For instance the impact of bio-fuel at \$2GJ would be the greater if	NWZ	37	1	• No.

WGIII Peer Review

November/26/1994

Page: 12

Reference			Comments	Reviewer (Country #)		ID	Response
Section	Page	Line					
			it were the first rather than the fourth advanced technology to be introduced. However, subject to consistent modeling, the combined effects of the advanced technologies should be the same whatever the ordering"				
5	24	43	"aggressive" follows the terminology employed by Cline but seems anti-pathetic to this peaceable reviewer: how about "ambitious"?	NWZ	37	i	OK
5	25	24-32	A fourth item must be added to this para. "Fourth, politically, if carbon tax revenues are used to fund government spending, no double dividend would occur."	API	76	a	Add "additional" [government spending].
5	25	42	Add new paragraph; "Nevertheless, it must be recognised that, despite the differences, the models have a lot in common and were compared by the OECD and EMF on the basis of results that ante-date the work reported in endnote 71. As reported at the influential 1990 Rome Conference, and setting the tone for the IPCC's 1992 Assessment, the model suffers from four defects: A. The revenues from carbon taxation were treated as a withdrawal from aggregate expenditure, like the early OPEC supply shock; B. Technology projections were econometrically based upon irrelevant experience, rather than engineering and agronomic knowledge; C. A stock problem was, for modeling convenience, treated as an emissions flow reduction problem, with the possibility of low-cost absorption into carbon sinks ignored; D. Developing regions of the world were modeled in the same full-employment equilibrium basis as developing regions. These defects led to a gross over-estimate of the costs of responding effectively to the IPCC's proposal to stabilise the level of GHG in the atmosphere - to such a point that, in the pro-Rio negotiations, politicians were deferred from reaching substantial commitments in the FCCC. In the model comparison exercises only A has been remedied so far, though we now have an important advance in relation to B from the ERM model, as reported in endnote 71. When the models are further developed to take account of low-cost absorption (and medium-term sequestration in standing timber, on land later to be used for bio-fuel production), together with beneficial global multiplier effects arising from rural employment in bio-fuel production and possibly of a double dividend (defined not simply as the effect of tax-recycling, but as the return on	NWZ	37	i	No.

WGIII Peer Review

November/26/1994

Page: 13

Reference			Comments	Reviewer (Country #)		ID	Response
Section	Page	Line					
			technologically well conceived response strategy) seems rather strong, with the measured near-term GDP reductions variously calculated by the models (if any, after appropriate model re-specifications) to be regarded as an investment rather than a cost."				
5	25	43-46	This paragraph is misplaced: the debate on GDP losses has nothing to do (in itself) with the double dividend: (See Chapter 10 Section 10.3.2 for the right survey.)	BELG	39	g	Agreed. wrong place.
5	26	1	Carbon and not the energy tax is second best. The literature is very controversial.	GER	43	i	No.
5	26	20	A tradable permits market with banking system may have the disadvantage of increasing final energy price volatility, and therefore discouraging energy saving investments. This remark should be added here.	FRA	70	i	No. speculation only - no examples offered.
5	26	22-29	This section makes clear what a tax would add to a tradable permit system, but what a tradable permit system would add to a tax is not clear.	FRA	71	i	OK
5	27	5-40	The idea of "mixed bags" should be evoked: combining different kinds of instruments to get a synergy (See Leustra, IEA/OECD Conference, Paris 93)	BELG	39	g	OK
5	27	27-28	Replace sentence beginning "Thus, for example" with " For example, lower powered cars may be more tiring to drive and lead to increased journey times and accidents. (fuel costs have little impact on miles driven, which represent a time penalty far more important than the fuel-related pecuniary impact - most people drive to get from A to B).	NWZ	37	i	CAFE example to be revised
5	27	27	More miles per gallon may raise the number of miles driven as the marginal cost decreases, but will not raise one's global budget for travel. Then, CAFE standards may not increase GHG emissions; they reduce them less than it seems when not taking into account the cost reduction.	FRA	70	i	ditto
5	27	27-29	The statement that CAFE standards may actually increase emissions is speculative and without analytical basis. It would be accurate to say, however, that Emission reductions under CAFE standards may be less than a simple calculation of increased miles per gallon would indicate, but on the whole would reduce emissions."	API	76	a	ditto
5	27	41	New heading and 2 new paragraphs: 1.5.7. Tradeable Absorption Obligations	NWZ	37	i	No

Reference			Comments	Reviewer		ID	Response
Section	Page	Line		(Country #)			
			The TAO is a novel economic instrument, responsive to the special features of the GHG problem (Read 1994). It is designed to enlist energy sector management in the task of transforming the industry towards the reliance on sustainable energy technology, with bio-fuel as the core technology, together with the transfer of such technologies to developing countries. Under the TAO, energy firms are obligated to absorb a portion of the carbon that is emitted when their product is used. This obligation can be discharged by paying for some third party's emissions to be reduced ("net absorption - say bio-fuel plantations in Nigeria, or on lay-by agricultural land in the mid-west USA. With the rising percentage obligation, biomass supplies come to exceed conventional demands and, having zero opportunity cost, come to be used as bio-fuel, with firms thereby avoibing the costs of extracting fossil fuels. Research is needed regarding the efficiency properties of the TAO (which, being tradeable - i.e. sub-contractable - avoids the inefficiencies of regulation). However, it appears to have the properties of a system of Voluntary Agreements (in that no tax flows from energy firms to government) but without the free-rider difficulty that arises with VAs. It also appears that the degree of energy industry adjustment would be greater, with adjustments outside the energy less, than for a carbon tax or emissions permit scheme that achieves the same GHG result. By focusing on influencing the behaviour of energy firms, some of the political problems that arise with instruments that involve government to government agreements are avoided - indeed the TAO can be regarded as a framework for commercialising Joint Implementation, with governments and NGOs involved in monitoring the activities of firms under the aegis of the Conference of the Parties, ensuring that environmental and socio-economic safeguards - "the rules of the game"- are observed by firms in the process of discharging their TAOs, and, in the event of default, subject to legal enforcement in the developed country where the TAO was originally imposed.				
6	28	0	It does not seem reasonable, in an IPCC report, to mention one of the most important Rawlsian assumptions in one single sentence, nor to address the issue of "sustainable development", as if the full substitutability of environmental goods by artificial assets were obvious. Cap. 3 provides a better starting point for this debate. Suggest this section 1.6 be deleted.	FRA	70	1	<i>John Robertson has provided comments and suggestions on SD section.</i>
6	28	9-10	The definition and interpretation of sustainable development should be supplemented by the implicit assumption that the natural and physical capital are perfectly substitutable. This implicit assumption is not very satisfactory from an "ecocentric" point of view.	IND	45	1	<i>ditto</i>

WGIII Peer Review

November/26/1994

Page: 15

Reference			Comments	Reviewer (Country #)		ID	Response
Section	Page	Line					
6	28	13-17	The message in this paragraph is not clearly presented.	NED	71	1	• <i>Will revise</i>
6	28	19-26	Extrapolation of growth rates over long periods is dangerous because of the inherent instability of fundamental assumptions. In these cases one should use a probability analysis.	GER	50	1	• <i>Edit.</i>
6	28	26	add " The justification has to lie in a precautionary approach in face of uncertainty bordering on ignorance of the potential of the climate system to deliver an adverse surprise (e.g. a stopping of the Gulf Stream) or, alternatively to deliver a disproportionate increase in the frequency of extreme events to the extent that , say, Florida is assaulted by a new hurricane - or coastal Bangladesh inundated - sooner than it can recover from the last event. With unknown probabilities, and expected loss values hence incalculable, sustainability requires more conservative methodology than conventional cost benefit analysis in order to reflect this generation's responsibilities to its successors".	NWZ	37	1	• <i>No. not suggested</i>
6	29	1-30	Lines 1-7 Unsustainability in growth not just from policies such as large energy subsidies but also from an unsustainable state of living. Lines 9-30 True (???) often lack the resources to respond to the threat of climate change. But this does not force the South to join the mitigative action. Rather, Annex 1 countries need to accelerate their efforts to contain the damage to the South. The equity issues and ????? or the equity arguments were not presented in a satisfactory manner. The FCCC guidelines on issues such as distributing costs of coping with climate change, distributing future emission rights and the costs of abatement should have been highlighted. Also the results of impact assessment studies have been presented without the necessary caveat. The results of these studies are quite "optimistic" only if the major assumptions about carbon dioxide fertilization effects holds good. These effects can be expected to play a key role only if the plant growth is limited by insufficient CO2. In practice, plant growth is limited more by nutrient deficiencies and lack of irrigation facilities. Such optimistic interpretation of results leads to underestimation of damages due to climate change. They should not be used to support "wait and see" approach of Annex 1 countries towards the climate change problem.	IND	45	1	• <i>Equity section will be amended with Roby's additions.</i>
6	29	2	for "sustainable" read "unsustainable"???	NWZ	37	1	• <i>Will revise the efficiency (typo)</i>

WGIII Peer Review

November/26/1994

Page: 16

Reference			Comments	Reviewer (Country #)		ID	Response
Section	Page	Line					
6	29	18	It is not at all clear whether the relation is substitutional or limitational. How could one replace an extinguished bird or butterfly with capital.	GER	43	1	Will edit
6	30	3	add: "However, given dynamic constraints to land use, and prospective demands for feeding upwards of 12 billion mouths later next century, afforestation (i.e. long-cycle biomass production) can play an important part in sequestering a target tonnage of carbon by a target date, with the timber product displacing the conventional exploitation of natural forests (yielding bio-diversity benefits) and residues providing bio-fuel raw material when harvested, at a time when the market for bio-fuel had become sufficiently expanded to absorb the quantities involved, and, as with any other bio-fuel production, thus achieving indirect sequestration in terms of fossil fuel left underground".	NWZ	37	1	No
6	30	7-23	The entire section contains strong policy conclusions which are beyond the authority of IPCC. Additionally it is quite biased. It very clearly identifies the past role of developed countries in generating emissions, but completely avoids the words "developing nations" in the brief reference to future emissions. Needs to be more balanced.	API	76	a	Will be revised to avoid suggesting policy recommendations
6	30	15-24	It can be a useful instrument to facilitate "leapfrogging".	GER	50	1	OK
6	30	20	Developing countries cannot follow a similar path. Even if efficiency increases this will not be sufficient to keep absolute numbers from rising dramatically. Should therefore point out explicitly that developing countries need alternative development patterns with a change in course required by the North.	GER	43	1	Will be fixed
7	35	0	The idea behind footnote 33 is not clear.	FRA	70	1	Will be fixed
7	42	27-46	In political practice, continuous revisions of tax rates or permit levels are very improbable.	GER	50	1	Will be clarified

**UNIVERSIDADE DE SÃO PAULO
INSTITUTO DE ELETROTÉCNICA E ENERGIA**

**Av. Prof. Almeida Prado, 925
Cidade Universitária
05508-900 - São Paulo - SP - BRAZIL
Tel: 818-5053 / 818-5054
Fax: (55-11) 818-5031**

DATE: 11/18/94

NUMBER OF PAGES: 05

FROM: Professor José Goldemberg

TO: Joseph E. Stiglitz

FAX: (001-202)395-6958

MESSAGE:

Indira Gandhi Institute of Development Research



Gen. Vaidya Merg, Goregaon (E),
Bombay-400 065. (INDIA.)
Tel: 8400919 (EPABX).
DIRECT: 8400754 Rpt: 8400770
Fax: 8400750/8400000
Telex: 11-777777 INDI
Grams: DEVRES Bombay 400 065.

DR. (MRS.) JYOTI K. PARIKH
Senior Professor

Ref: IPCC/JKP/94/-MM

November 18, 1994

Fax: 00 55 11 210 7750

Professor Jose Goldenberg

Universidade de Sao Paulo
Instituto de Electrotechnica e Energia
Av. Prof. Almeida Prado, 825
Cidade Universitaria 05508-900 Sao Paulo-SP
Brazil

Dear Jose,

I am sending you my comments on chapter 1, which appears to be written by the US Govt. The line taken by them is that developing countries emissions are rising and they have to be controlled. Their idea of "equity" is that everybody should equitably share the costs of containing emissions. They also want to promote "wait and see" approach and prolong their free ride passing on adaptation burden and taking a larger share of the environmental space. Since you are the convening lead author, you need to do something about this. After championing cause of the developing countries for so long, I am sure, you would not want to let them down. I request you to get into action since Nov. 25 is the last date. Please look at chapter 2 and if possible, write a letter supporting what I have said (first 25 pages and a last few pages are mine). Apart from chapter 1 and policy makers summary, the rest of the chapters are reasonably professional and a political.

I hope to see you in Vienna,

With warm regards,

Yours sincerely,

Jyoti

Jyoti Parikh

Encl: Comments on chapter 1.

CHAPTER 1 : INTRODUCTION : SCOPE OF THE ASSESSMENT

This chapter follows political agenda instead of objective analysis. (It is the only one such chapter and the policy makers summary). It stresses the potential increase in the GHG emissions in the developing countries in the future decades as the major threat to the global climate change problem (when the facts are opposite as they stand today!). The present emissions of Annex 1 countries are large and their future emissions are also going to be larger for nearly 3 to 4 decades. By concentrating on what may happen five decades from now, the basic issues of immediate importance are being evaded. There will be ample opportunities in future to discuss these issues once Annex 1 countries reduce their emissions. Our successors can take up these issues 20 years from now. The climate change problem is precipitated and brought upto threshold levels due to unsustainable consumption of the Annex I countries. This is not the only problem. Even in the next 50 years and beyond, their contributions to the atmospheric GHG concentrations are going to dominate, even if they reduce their emissions drastically and even if South's emissions grow. To quote Elizabeth Dowdeswell, ED of UNEP, "It has been said, correctly, that the rapid industrialization of the 18th century precipitated the climate crisis. This is further interpreted as the industrialized countries enjoying a century-long free ride on the road to development and now, as new developing country passengers wish to join the train, they are being asked to pay the fare. It is futile for the rich North to protest that the consequences of fossil fuel exploitation was not known at the time of their development. Ignorance of law, whether judicial or law of nature, is not an excuse for its contravention. A mischief has been done and the penalty or compensation must be paid." Address delivered at Royal Geographical Society, UK, May, 1994.

The following are some of the arguments in the text which need to be revised. Along with the objectionable argument (specified by the page and line numbers), the explanations are also provided.

1. Developing country emissions: It has been pointed out that, though developed countries contribute more than two of total world GHG emissions today, developing country emissions are growing much faster and there is urgent need for controlling them.

Page 8 : line : 22-25

We would like this to be changed as follows:

Annex I countries contribute more than two thirds of total world GHG emissions today. There is need to control their emissions to allow developing countries to grow to achieve adequate living standards.

Comment: There is nothing surprising in the faster growth rate of emissions in developing countries. After all, during the stage

when the present Annex 1 countries were developing their emissions also grew at faster rates. Controlling world emissions is quite important, but one can't expect it to happen at the cost of developmental needs of the developing countries. The Annex 1 countries, which are emitting more than two thirds of world emissions at present, should exercise control over their emissions first (and thus give the environmental space for the development of the less developed countries), and also help developing countries in improving their energy efficiencies etc.

2. Public Good Arguments: The arguments describing the public good nature of atmospheric concentrations and mitigative action appear completely biased.

a) Page 10 : line : 29-30

Comment: Atmospheric concentrations of GHGs are the result of mainly Annex 1 countries, but countries bear differential responsibilities in aggravating the climate change problem to the present dimension. It is very much essential to add this clause to bring out the current policy response.

b) Page 11 : line : 2-3

Comment: Similar to 'mitigation', one should view 'global environmental space' also as an 'international public good'. It is important to note that Annex 1 countries, had 'free ride' so far. Hence, while arguing that the developing countries are going to free ride in the mitigative actions taken by developed countries, one should keep in mind the free ride of many decades, which has caused the problem. Moreover, it is sought to extend this period of free-ride by promoting "postponement" approach rather than acting now.

3. GHG Concentrations:

Page 12 : line: 26-29

Comment: It is pointed out that there has been a 25% increase in GHG concentrations since the pre-industrial revolution levels, and that for double carbon dioxide benchmark concentration level, most of the increase in the concentration is going to take place over the next 75 years. During this period, since the developing countries would be going through rapid development, it is implied that these countries would be the prime culprits. This is not quite true, given the time lags in the response of concentrations. Though there is only 25% increase in GHG concentrations so far, it is not to be interpreted that the emissions by the Annex 1 countries - since industrial revolution, have 'completed' their 'contribution' to the GHG concentration increase (which the above argument tries to imply). In fact, the present patterns of Annex 1 countries contain enough "momentum" not to halt till the end of century. Non-Annex 1 will also add to this as their emissions will increase due to much needed development.

4. Sustainable Development:

a) Page 28 : line : 9-10

Comment: The definition and interpretation of sustainable development should be supplemented by the implicit 'assumption' that the natural and physical capital are perfectly substitutable.

This implicit assumption is not very satisfactory from 'eco-centric' point of view.

b) Page 29 : line : 1-7

Comment: Unsustainability in growth arises not just from policies such as large energy subsidies, but also from 'unsustainable style of living'.

c) Page 28 : section 1.8.3 : line : 9-30

Comment: True that LDCs, often lack the financial and technical resources to respond to the threats of climate change. But, using such argument - namely, that LDCs are at higher risk due to climate change than developed countries, to 'force' LDCs to join the mitigative action makes not much sense. Particularly when the arguments 'ignore' the 'causes' behind the climate change problem.

5. The equity issues and North-South angle of the equity arguments were not presented in a satisfactory manner. The FCCC guidelines on the issues such as distributing the costs of coping with climate change; distributing future emission rights; distributing the costs of abatement etc., should have been highlighted. FCCC indicated that developed countries bear responsibility for helping developing countries cope with the impacts of climate change and the costs of abatement measures. It also indicates that the relative share of the GHG emissions of developing countries should increase.

Also, the results of impact assessment studies (viz., Parry & Rosenzweig etc.) have been presented without the necessary caveat. The results of these studies are quite "optimistic" only if the major assumption about carbon dioxide fertilization effects holds good. These effects can be expected to play a key role only if the plant growth is limited by insufficient carbon dioxide. But in practice, plant growth is limited more by nutrient deficiencies and lack of irrigation facilities, than by lack of carbon dioxide. Such optimistic interpretation of results lead to underestimation of damages due to climate change. They should not be used to support 'wait and see' approach of Annex 1 countries towards climate change problem.

JAMES P. BRUCE
1875 Juno Avenue
Ottawa Canada
K1H 6S6

Tel: 613 731-5929
Fax: 613 731-3509

4 November, 1994

TO: Prof. Jose Goldemberg
Dr. Joseph Stiglitz

cc: Dr. Hoesung Lee, Co-Chair, WG III
Dr. Erik Haites, Head T.S.U.

FROM: James P. Bruce

RE: Revised chapter 1

I have now had an opportunity to read over the re-drafted Chapter 1 - Overview for WG III. It is a great improvement over the earlier draft and has a number of important insights, clearly articulated. I'll submit some detailed comments to the TSU to go into the peer review process. But there are a few more general points I'd like to raise with you.

Our terms of reference, and outline of material to be included in our report, lead me to encourage you in the subsequent draft to elaborate more on two matters you deal with briefly, and add one other section to help set the stage for material in subsequent chapters.

1. **"GREEN GDP"** Our "Themes to be Considered" approved for WG III ask the Scope of Assessment chapter to deal with "the socio-economic assumptions underlying existing modelling frameworks, its relations to observable data such as national accounts figures (GNP). To fulfill the scope of the analysis, existing supplementary indicators will be assessed". While there is some reference to these matters in the draft section on "Administrative Reforms", this is not as thorough a discussion as most WG III delegates had hoped for. Both Prof. Amano and you, Dr. Stiglitz, had said they would provide good discussion of "Green GDP" and supplementary indicators (in Montreal - IPCC WG III Plenary, the Human Development Index of UNDP was mentioned as an example).
2. **SUSTAINABLE DEVELOPMENT:** As you know, we were enjoined to "place the socio-economic perspectives of climate change in the context of sustainable development". The draft section in your Chapter on this topic is based on Solow's definition of S.D. which is much narrower than those likely to be accepted by IPCC government representatives since it

doesn't specifically mention environment and does not seem global in its scope.

Personally, I like President Clinton's definition, "Sustainable development is economic growth that will benefit present and future generations without detrimentally affecting resources or biological systems of the planet." However, for international acceptability, the Brundtland Commission definition in "Our Common Future" is probably best. If you start with such a definition, then the discussion would develop in a different way. Solow's definition could then be used to illustrate an economist's perspective and one perhaps easier to turn into practical actions.

3. GLOBAL ANALYSES AND COLLECTIVE DECISION MAKING: Climate change is a global problem, and analyses of how best to address it must adopt a global perspective. The benefit-cost chapter, for example, concludes that it is a suitable technique on a global, but not a national, scale. On the other hand, policies to address climate change will be agreed upon by the Parties to the Convention, over 100 countries. The national policies of all of these countries are unlikely to accord with the optimum global policy. It would be very useful if you could frame this issue and outline approaches that can be used to better align national policies and international goals.

Thanks again for all the hard work and the greatly improved chapter.

Yours sincerely,


James P. Bruce
Co-Chair, IPCC WG III

UNIVERSIDADE DE SÃO PAULO
INSTITUTO DE ELETROTÉCNICA E ENERGIA

Av. Prof. Almeida Prado, 925 - Cidade Universitária

05508-900 - São Paulo - SP - BRAZIL

Tel: (55-11) 818-5053 / 818-5054

Fax: (55-11) 818-5031 / 818-5056

e-mail: goldemberg@nhi.lead.org.br

DATE: 11/21/94

NUMBER OF PAGES: 01

FROM: Prof. José Goldemberg

TO: Jyoti Parikh

FAX: (00-91-22) 840-2752

MESSAGE:

Dear Jyoti,

I received your comments on the "Scope of the Assessment" and passed them on to my colleagues in WGI. Unfortunately I cannot attend the Meeting at IIASA but I think my views are well known to them.

My reaction to your note is the following:

one must separate physical realities from interpretation and our own wishes and I think your comments mixes them up.

REALITIES	MY INTERPRETATION OR WISHES
CO ₂ emissions have increased <u>only</u> 25% since last century at a time when the consequences of such increase were not clearly realized.	I don't think it is useful to call it a "mischief", etc. Lots of other bad things were done in the past and there is <u>no</u> point in seeking compensations. What we can do is to look ahead.
What lies ahead is that the emissions of the industrialized countries are just about levelled off.	My own work - and of many others - indicates that they could even be decreased through the use of renewables, energy conservation, etc. The FCCC incorporates that vision not as clearly as I wished but the decision to reach in the year 2000 levels of 1990 taken by industrialized countries is a progress. I hope the Conference of the Parties will approve negotiations on a Protocol to reduce emissions by the year 2010 for Annex I Countries.

Emissions from LDC's will increase at least 3 or 4% per year due to population growth and development and in 50 years time will dominate completely the picture. Doubling of CO₂ concentrations in the atmosphere which climatologists fear will not be caused alone by the industrialized countries of today but mainly by the emissions of LDC's.

LDC's have heavy responsibilities now that the facts concerning climate change are better known. They will undoubtedly grow and develop but there is no reason for them to grow in an irrational way and at any cost. They have to incorporate early in the process of development modern technologies (i.e. "leapfrog" the old patterns of development) in order to supply to their people the services needed without severe environmental degradation (both local and global). Again here my own work - and many others - shows that it can be done.

What I conclude from all this is that:

1. It is in the self-interest of the developed countries to help them in such endeavour and they should contribute with money and technology;
2. LDC's should take part in the process by choosing the better technologies, etc trying to avoid the duplication of the ruinous path followed by the industrialized countries in the past*.
LDC's should not just ask for more ODA and "free-lunches" but participate actively in the process of avoiding climate change. This does not mean giving up development but choosing better routes to development.

Sincerely,


José Goldenberg

P.S. - An example of what I think is not a good path is what China plans to do installing 100 coal power plants in the next 10 years to run obsolete refrigerators and other old fashioned end-use devices. Why don't they act on the demand side also?

The changes proposed here would harmonize the text more with my discussion in chapter 8
John Robinson 30/11/94

This does not reflect even the purely economic literature as SD, let alone the literature in other disciplines

I have given a copy of these comments to Erik Haites.

- 1st formulated by IUCN in 1980 World Conservation Strategy
- later discussed at length in 1989 book W Clark + T Munn eds Ecologically Sustainable Development of the Biosphere (London: Cambridge U. Press, 1986)
- popularized by + elaborated by WCEO (Brundtland Commission); a central point was need to address

1.6 SUSTAINABLE DEVELOPMENT

A variety of definitions of sustainable development have been proposed. The Brundtland Commission offered this interpretation:

Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs¹.

Although the Commission clearly had in mind environmental considerations, its report did not spell out exactly what sustainable development included. The Interamerican Development Bank explicitly included sustainable development in its formulation:

[Sustainable] development distributes the benefits of economic progress more equitably, protects both local and global environments for future generations, and truly improves the quality of life.

1.6.1 The Economic Concept of Sustainable Development

As an economic concept, sustainable development can be viewed as a particular manifestation of the issue of intertemporal equity. Solow provides the classic definition from the point of view of the developed world: sustainable development requires that future generations be able to be at least as well off as current generations. The central implication of sustainable development is that any environmental degradation should be offset by increases in capital stock sufficient to ensure future generations at least the same standard of living. Sustainable development does not preclude the use of exhaustible natural resources, but requires that any use be appropriately offset.

Within the economics profession, the concept of sustainable development has not received universal assent. It can only be justified by means of a Rawlsian social welfare function, and that social welfare function is not widely accepted. A Rawlsian social welfare function rejects any policy that causes any reduction, no matter how small, in the welfare of the worst off individual, regardless of any offsetting increase, no matter how large, in the welfare of everyone else. This is neither intuitively plausible nor consistent with reasonable axiomatic structures.

At a practical level, sustainability as defined by Solow provides few constraints on development paths for the more developed countries, so long as there are steady increases in productivity. Technical change alone, without further capital accumulation, may well sustain future living standards and offset any effects of environmental degradation. Thus, even if we use estimates of 1-3% of GDP for adaptation costs should significant warming occur, and if even the moderate rates of technical progress of 1 to 1.5% per

In economic terms, the SD debate rekindled interest in the question of resource scarcity originally addressed by Bennett + Morse (1963) and that entered the public policy arena with the publication of The Limits to Growth (Meadows et al 1972). As formulated by David Pearce (1998, 1999) and others, a key question centred around the substitutability of human for natural capital. If the two are substitutes, then the issue of sustainability revolves around the intertemporal allocation of wealth [lead into Solow discussion]. If on the other hand, natural + human capital are complements or only partial substitutes, due for example to irreversibilities or non-replaceable life support functions,

both ecological constraints + develop- ment needs in developing countries (ie poverty, distribution) a key argu- ment was need for 5-10 fold increase in gross world economic output coupled with very substantial commitment to sustainable resource use, preservation of biodiversity + maintenance of ecological life support systems
WCEO led up to UNCED (Earth Summit) at Rio in 1992, where Agenda 21 + FCCC were signed; development of large literature on economic, political, sociological, philosophical, ethical, etc issues associated with SD; as well as a whole host of policies + initiatives

then the issue is somewhat different, and ~~certain~~ ^{those} environmental assets or services ^{which} cannot be substituted for by human capital must be preserved should be treated differently than those which can (as preserved). In an influential formulation Pearce (1992) has distinguished between strong and weak sustainability. The latter implies that any depletion of natural ~~capital~~ ^{assets} that any depletion of natural capital ~~must~~ ^{should} be offset by increases in human capital (the S-Low criterion); the former or by substituting other forms of natural capital (e.g. renewable resource assets in place of non-renewable resource extraction). Strong sustainability suggests that some natural capital (e.g. the ozone layer) is irreplaceable, and must simply be preserved.

The economics of sustainable development thus encompasses aspects of natural resource economics (Carnett & Morse, A. Scott, Kneese and traditional environmental economics (Dorfman & Dorfman, as well as more unconventional forms of environmental economics (Boulding, 1967; Daly, 1977, 1980; Daly & Cobb, 1991) and the newly emerging field of Ecological economics (Costanza 1992;) while little agreement exist among these different schools of thought, they share a common focus on the economic dimensions of ecological constraint and the distribution of natural capital assets (natural resources, assimilative capacity, life support, etc).

[Note that chapter 8 has some discussion of the history of alternative energy models + analysis + its close connection to SD arguments. A fuller discussion of the economic dimensions of SD is along the lines of the text proposed here, would be useful.]

It rather depends on what you mean by "wider" and what ~~social~~ categories of "social scientists" you have in mind. In the circles of social (+ natural) scientists in which I move, this position is rather unremarkable. Nor is it immediately obvious why it cannot, in general, be reconciled with individualistic notions of well-being, unless such notions are formulated in a way that is controversial in most of the social sciences. (3)

Specific Egalitarianism. A more stringent notion of sustainability (a generalization of the concept of specific egalitarianism) requires not just that future generations be as well off as the current generation, but that their endowments of particular goods--especially environmental assets--be at least as large. Such views cannot, in general, be reconciled with individualistic notions of well-being, and thus have not been generally accepted among social scientists. ????

1.6.2 Implications of Sustainable Development for Developing Countries.

The concept of sustainable development is often broadened to include an examination of specific policies. In this context, "sustainable" often takes on the meaning of "long run efficiency." Thus, agricultural policies that lead to a long run decline in land productivity, even though they may lead to a short run increase in productivity, are sometimes referred to as "unsustainable," with the suggestion that the long run losses more than offset the short run gains, at any reasonable discount rate. Many of the discussions of unsustainable growth thus focus on policies which are clearly statically or intertemporally inefficient, for example, large energy subsidies, which encourage energy inefficiency. ?

1.6.3 Sustainable Development and the Risks of Climate Change.

Climate change imposes special demands on the ability to achieve sustainable development. A rapidly or unpredictably changing climate can disturb orderly economic development plans. Shifting agricultural production regions, for example, can result in the diversion of capital resources that would have been available for other more productive uses. The costs of mitigation and adaptation may take resources from necessary consumption, and may crowd out investment that would make sustainable development possible. Responding to climate change increases the uncertainty and the cost of achieving sustainable development. At the same time, as stated earlier, sustainable development does not mean that all resource stocks remain unchanged; an increase in capital stock can substitute for a decrease in other resources. I don't understand the point. It is a set of demands on countries. Because of the entire discussion I think more the point: climate change may well be a threat to sustainable development. SD is distinct from the level of global emissions that meet the objective of the FCCC.

Developing countries face particular burdens; their development is likely to be the most affected by the risks of climate change. Many potential environmental consequences--such as rising sea levels--will particularly affect developing countries simply because of their location. Since agriculture is the sector most likely impacted by climate change, and since agriculture's share of GDP is much larger in developing countries than in developed countries, climate change is most likely to impact less developed countries. Moreover the South is more likely to be adversely affected than the North (which might actually benefit from slight global warming). At the same time, the less developed countries often lack the financial and technical resources to respond. Further, many developing countries rely heavily on fossil fuels

either for export earnings or for energy consumption, and thus would feel the impact of fossil fuel restrictions. Hence, carbon taxes and other emissions constraints would weigh particularly heavily on the two largest developing countries, India and China, both of which have large coal deposits⁴.

1.6.4 Sustainable Development and Growth in the Developing Economies

Population growth is expected to contribute to pollution of water, air, soils, in addition to problems of deforestation, and loss of biodiversity. The world's population is growing at the rate of 1.7% per year, down from its peak of 2.1% per year in the late 1960's (World Bank, 1992). Under the World Bank's base case projection, world population would stabilize at 12.5 billion sometime after 2050, more than double the current total, with 95% of the increase in developing countries. Declines in fertility rates depend on the availability of contraceptives and family planning information, on education, particularly for females, on the standard of living, and on a social safety net.⁵

Population pressures and economic development will result in greater energy use, which in turn will increase CO₂ emissions. The consumption of commercial energy in developing countries is rising rapidly and will soon dominate growth in energy consumption--and thus CO₂ emissions--worldwide. At present, the developing countries contributed 27% of worldwide carbon emissions. By 2100, they are expected to contribute over 50% of a larger total (Cline 1992).

Developing countries also contribute to net increases of greenhouse gas emissions by deforestation. In recent years, deforestation, nearly all from developing countries, has contributed significant amounts of carbon dioxide emissions. Afforestation of open land is one of the most promising options for the sequestration of CO₂ from the atmosphere.⁶ Even though afforestation's contribution to carbon absorption is ultimately limited by land area and growth rates, it could postpone the increase of CO₂ concentration as well as check erosion and land degradation in general in many areas of the developing world⁷.

1.6.5 Implications for Climate Policy

The Framework Convention on Climate Change implicitly recognizes that climate change is an international public good in calling for the nations of the world to take actions to reduce greenhouse gas emissions. Three-quarters of present-day emissions have their origin in developed countries where one-quarter of mankind lives. The remaining three-quarters of the world population contributes only one quarter of present-day emissions⁸. Atmospheric concentrations of CO₂ have increased by about 25 percent since the beginning of the Industrial Revolution. But the increase to date will be dwarfed by the increase expected to occur over the next several decades.

Whatever has gone before, the real problems are those to come. Resolving such problems will require a combination of efforts to reduce emissions in developed countries, whose emissions have been largely stable for 20 years, to allow for moderate growth of emissions in developing countries, which is unavoidable. The introduction of cost-effective energy-efficiency measures proved to be one of the important factors in reducing aggregate energy intensity (the ratio of total energy consumption to GDP) in the OECD after 1973⁹. Many studies indicate that developing countries can follow a similar path, allowing them to "leapfrog" the path followed by the industrialized countries¹⁰. This strategy is slowly becoming current policy in a number of developing countries and the basis of the actions of some international agencies, including the Global Environment Facility¹¹.

1. World Commission on Environment and Development, Our Common Future, Oxford: Oxford University Press, 1987.

2. Tariq Osman Hyder, "Climate Negotiations: the North/South Perspective," in Mintzer, ed. Hyder has headed the Pakistani delegation at meetings of the INC, and GEF (Global Environment Facility).

3. "Principles of the G-77 and China on the Climate Convention," cited in Tariq Osman Hyder, "Climate Negotiations, the North/South Perspective," in I. Mintzer, ed., Confronting Climate Change: Risks, Implications, and Responses, Cambridge: Cambridge University Press, 1992.

4. Because most developing and transitional economies are still in the initial stages of establishing their economic infrastructure, it is difficult to calculate the costs of CO₂ mitigation (Pachauri and Khanna, 1993; see Kononov, 1993 for transitional economy example). As a result, the cost of several mitigation measures which appear to be low in the short run could, in fact, result in very large costs in the longer run. If a particular action results in reduction of CO₂ emissions at low direct cost, but over a period of time slows down the alleviation of poverty, it could lead to large positive costs in the long run, for the following reasons: First, poverty and population growth have a strong and positive correlation; second, deforestation for fuel and fodder is also intensified by high levels of poverty (Pachauri and Khanna, 1993).

5. Experts disagree over the future trend in population growth in developing countries. Recent declines in growth rates have shown that less developed countries are not going through the classical demographic transition that took place in industrialized countries over the last century. The World Bank, for example, in its 1992 World Development Report stated "declining fertility rates associated with these projections should not be taken for granted. They are rapid in historical context, they imply substantial progress in education and income opportunities for women and they will require a doubling in real terms of annual expenditure on family planning programs from \$4 billion (US) to \$8 billion (US) during the 1990's." This view has received widespread support. See, e.g., Bongaarts (1994) who calls for even greater extension of family planning programs beyond the traditional contraceptive information, services, and supplies typically provided. A study by Robey *et al.* (1993) examines the decline in fertility rates in many developing countries. They find that throughout the developing world, birth rates have declined by one third since the mid-1960s; women formerly had six children on average, but today they have four. They cite evidence that birth rates in the developing world have fallen even in the absence of improved living conditions. The decrease has also proceeded with remarkable speed. Developing countries appear to have benefited from the growing influence and scope of family-planning programs, from new contraceptive technologies and from the educational power of mass media.

- Linkage of SD concerns + climate change issue raise question of what would be a SD scenario (refer to discussion in chap 8): are there forms of economic + social development that don't exceed global carrying capacity, (i.e. meet an climate change goals) and also fulfill our expectations regarding material quality of life. (a different framing of the problem than what is the least cost emissions path).

6. Significant variation exists presently among the many cost studies. However, it is clear that significant opportunities exist for cost-effective reductions in net carbon emissions via sequestration. Table 1 compares the results of several cost studies of carbon sequestration, organized by forest type.

While some of the variation among these results can be explained by variations in methodology, much of the difference among the studies stems from differences in underlying assumptions. Among the key differences in assumptions that contribute to the considerable uncertainty in the precise costs and potential role for sequestration of carbon are: land, establishment, and maintenance costs; carbon uptake rates; transactions costs; and the choice of discount rates.

7. Even with the broad range of uncertainty that presently exists, there appears to be significant opportunities for carbon sequestration as an element of a carbon emissions reduction policy. It is likely that afforestation could contribute as much as 10^9 tonnes to a reduction in global net annual carbon emissions. When forest management and agroforestry practices and biomass energy technologies are included in the technological response options, the potential contribution of managed forest ecosystems rises to above 2×10^9 per year (Hall et al., 1993; Dixon et al., 1994). Afforestation on a large scale also opens up the possibility of greater diversification in electricity generation. Recent technological advances in wood gasification coupled with aeroderivative gas turbines increases the potential for the replacement of fossil fuels by biomass in power generation, depending on various economic factors and local circumstances.

8. Table 2 historic CO₂ and methane contributions by region (Grubb 2 Sept. 1994).

	Past contribution, 1800-1988 in %		
	Industrial CO ₂	Total CO ₂	CO ₂ + CH ₄
OECD North Am	33.2	29.7	29.2
OECD Europe	26.1	16.6	16.4
Eastern Europe	5.5	4.8	4.7
Former USSR	14.1	12.5	12.4
Japan	3.7	2.3	2.3
Oceania	1.1	1.9	1.9
China	5.5	6.0	6.3
India	1.6	4.5	4.8
Other Asia	1.5	5.0	5.2
N.Africa & MdEast	2.2	1.7	1.8
Other Africa	1.6	5.2	5.2
Brazil	0.7	3.3	3.3
Other Lat Am.	3.2	6.5	6.5
"North" (1-6)	83.8	67.8	66.9
"South" (7-13)	16.2	32.2	33.1
World	100.00	100	100

9.E.D. Larson, M.H. Ross, and R.H. Williams, "Beyond the Era of Materials," Scientific American, vol. 254, no. 6, pp. 34-41, June 1986; A.K.N. Reddy and J. Goldemberg, "Energy for the Developing World," Scientific American, September 1990, pp. 111-118.

10. Edmonds et al. 1994; Energy Modeling Forum 1993, section 1.6.4; "Costs" chapter of this report.

11. Programs such as the "Golden Carrot" appliance program in the U.S.A. and Sweden are leading to the adoption of cost-effective energy efficient lighting fixtures, refrigerators, washing machines, etc. Such programs usually are more successful when changes in equipment are introduced either to conform to new environmental regulations or to replace obsolete equipment. Some developing countries are moving toward the same policies. Moreover, evidence shows that multinational corporations based in the U.S.A. or Western Europe are not exporting pollution when establishing subsidiaries in developing countries, but are instead adopting state-of-the-art environmental controls. Reductions in trade barriers and increased world trade tends to work in the same direction (U.N. Environment and Development Branch, U.N. Center for Transnational Corporations, "Options to Increase Transfer of Environmentally Sound Technologies to Developing Countries on Favorable Terms," New York, 1991, 89pp.

It seems to me to be rather crucial to include in this section the ^{sort of} questions that have been at the core of the climate change & SD literature, ^{of} public concern, from the beginning ~~to~~ :
~~it relates to climate change~~ are different scenarios of economic development & their associated GHG emissions ecologically sustainable? what future development paths would be ecologically sustainable & also meet the economic & social aspirations of the various regions of the world? To ~~provide~~ engage in a discussion of sustainable development that makes absolutely no mention of ecological issues or potential ecological constraints seems to me to be gratuitously provocative (to put the best face on it that I can). I don't think such a discussion would be taken seriously by either the social science & natural science community actively involved in SD issues, or the policy community. Perhaps more important in a practical sense, there is a problem of reconciliation both with the material in chapter 8 and other chapters (e.g. decision-making framework, equity, discounting), and with the message we heard at Montreal & subsequently from governments ~~the~~ about the need to address SD issues in a broad sense (a concern reflected at the very beginning of the terms of reference for WG III)

Robinson

weak - no irreplaceable

strong - some

Consistency -
sustainability

①

include these as examples in the different approaches

Some have suggested revising the conventional systems of national accounts to incorporate full social pricing of resources. National income accounting, widely adopted after World War II, measures aggregate income and expenditure flows, but does not incorporate environmental costs and benefits. *

This leads to anomalies. A country that rapidly depletes its natural resources may show a high rate of growth under conventional income accounting, but a lower rate of growth when resource depletion is taken into account. Repetto (1991, 1992) calculated resource-adjusted GDP for several countries rapidly harvesting their stocks of hardwoods and other resources, arguing that conventional measures sharply overstated GDP¹.

Others have suggested including in GDP the effect of changes in quality of the environment. In Eastern Europe and the former Soviet Union, steady increases in reported post-war GDP masked the effects of decades of environmental degradation; for part of that period, environment-adjusted GDP almost certainly declined².

Important conceptual problems, however, in defining levels and changes of environmental assets, complicate the task of modifying national accounts. First, the stock of natural resources has no obvious definition. While most geologists would agree on the size of coal stocks -- their location is known and their in situ value can be estimated -- this cannot be said for oil or minerals³.

Second, environmental assets--such as air quality--present another set of problems, because no market prices exist to value the asset.

Four approaches are commonly used to calculate changes in the natural environment (Peskin and Lutz, 1990):

- a) The environmental expenditure approach, used recently in the United States, identifies pollution abatement and other expenditures but leave conventional GDP unchanged; ✓
- b) The physical accounting approach, used in Norway and France, uses physical units of measurement to account for flows and stocks of resources; → satellite accounts
- c) The depreciation approach adjusts gross and net product by subtracting out the value of natural resource depletion (Repetto 1989); and + El Serafy WB ✓
- d) The comprehensive approach uses both physical measures and value (Statistical Office of the United Nations, 1992). ✓

As an alternative, the UN Development Program has proposed the human development index or HDI (UNDP, 1990) as a broader indicator of human well-being than the national income accounts. The HDI gives a composite measure of human development by combining three key indicators: longevity (measured by life

As far as I know this approach involves subtracting the associated expenditures from GNP

see { Leipert, Simons for Germany
Uno for Japan
Eurostat

* There are three main aggregates that are not adequately included in the current National Accounts System:

(i) defensive expenditures = $\begin{cases} \text{"ex ante" prevention} \\ \text{or} \\ \text{"ex post" pollution expenditures} \end{cases}$

↓
They are currently included in GNP. In fact, they should be considered as intermediate consumption since they are necessary to keep ~~environmental quality constant~~ the quality of environmental capital constant.

(ii) use of environmental goods $\begin{cases} \text{renewable} \\ \text{exhaustible} \end{cases}$ resources

Use implies depreciation.

Similarly to man-made capital depreciation this should be deducted from nat. accounts

(iii) ~~or~~ conflicting use of environmental services by different economic agents (ex: use of air by industries as a recipient for polluted production related fumes implies that families cannot use clean air any longer)

expectancy at birth), education (measured by adult literacy and mean years of schooling), and income (real GDP per capita adjusted for purchasing power). Although the HDI is not directly related to global environmental issues, both global warming and abatement policies may affect it.

1. Robert Repetto, et al., 1991. Accounts Overdue: Natural Resource Depreciation in Costa Rica. Washington: World Resources Institute; Repetto et al., 1992. Wasting Assets: Natural Resources in the National Income Accounts, Washington: World Resources Institute.

2. Cobb and Daley (1989) have even claimed that U.S. per capita GDP, when adjusted for environmental damage, was stagnant between 1950 and 1986. This assertion is hard to reconcile with the steady improvement in most measures of environmental quality since 1970, when measurements standards were established.

3. Analysts now use two methods to estimate stocks. The first assumes a fixed stock of a natural resources such as oil. Consumption of oil then depletes the stock by the amount of consumption. The second begins with the size of discovered reserves, treated as the asset. Additions to reserves thus are viewed as increasing the resource base. If in any given year, new discoveries match resource utilization, then according to this method no net depletion has occurred.

Further references :

- Tobin / Nordhaus (1972) "Is growth obsolete?"
↓
suggested a new "measure of economic welfare" based on consumption that increases the quality of life
- Hartwick (1990) → NNP (GNP - natural resource consumption)
measure of welfare

Uncertainties in the Climate Decision Process

Climate change involves decisions to be taken collectively and under uncertainty, the consequences of such decisions being long term and identified after a long time lag. Such uncertainties will translate into economic impacts with different welfare impacts for the same climate change.

[The largest negative changes would occur in the developing countries] The cost of delay in emission reduction in terms of foregone opportunities of the countries of the South to development is substantial.

What is equity? Ref 5 answers. Econ. L provide way to change
Question of policy not science. Possible hypothesis
[Brain needs... one of 5]

4 of each

Principles of Equity in the FCCC

(2)

The principles that are couched in the FCCC demand that equity be a key consideration in all actions taken under the Convention.

Equity in International law ^{One of constraints}

The FCCC and international law provide a substantial context for the application of the principles of equity in implementing the Convention.

A basic tenet of international law is the sovereign equality of all states. This right is also coupled with an obligation not to cause damage beyond borders (link up with Chapter 3, II)

Wealth & Basic Needs ^{State as ~~part~~ ^{one} of possible criteria} ^{Bring up Sen.}

The sharp chasm between wealth and poverty across the world constitutes one of the most pervasive differences in global welfare. Activities of the poor that result in greenhouse emissions are mostly those that relate to basic needs, whilst those of the rich tend

to be dominated by overconsumption and
unsustainable living

The welfare impacts of cutbacks on greenhouse gas
emissions would differ greatly according to the

Amundson is "beyond no regrets".

level of personal wealth.

It were made political decision to reduce equity issues

if only considering global average, minor important differences.

basic needs concept. - Gravella Chrichiprusty

[minimum utility, basic rights]. Need to
protect those rights to basic goods.

Priority for the alleviation of poverty continues
to be the overriding concern of the developing
countries. They rather conserve their financial
and technical resources ~~and~~ for tackling their
immediate economic problems than make
investments to avert a global problem that
would manifest itself with a time lag.

Contribution to Emissions

Countries vary widely in the nature and
degree of their contribution to climate change.
By any measure, the contribution of the world's

poorer regions to the total buildup of greenhouse gases is modest and even more so when considered in relation to population (4)

Ambiguities about whether developing world holds significant responsibility for contributing to climate change will not persist for long.

Attempts to quantify the costs associated with climate change involve inherently difficult and contentious value judgements.

Need for adequate Information

Many bad policy decisions can be traced to inadequate information, etc etc. Work spans complex issues ranging from atmospheric science, economics, ecology.

Need for Sound Judgement

Analysis can illuminate the implications of alternative choices and their ethical basis.

There are a variety of meanings of equity and there are various principles that have been designed to achieve equity. On some

12/7/94

To: J. Stiglitz
R. Squitieri

From: S. Kane

Early thoughts on the new proposal to merge the technical summary of WGIII with material in the SCOPE chapter to form a revised SCOPE chapter

DISADVANTAGES:

- Technical summary will continually change as supporting chapters are revised.
- Canadian-led Bureau may hold ideas not in keeping with CEA's, and thus the effort could be difficult to manage.
- CEA may not want to be directly associated with efforts other than those for which we directly oversee or contribute.
- Little time to coordinate the "new" SCOPE effort and edit the technical summary
==DEADLINE IS JANUARY 3.

ADVANTAGES:

- SCOPE chapter would hold a more prominent place in the assessment.
- More control can be exerted over the exact wording of the text of the technical summary.
- Flow of material could work well. One example of a new outline follows:
 - Introduction
 - Features of Climate
 - Contribution of Economics
 - Findings of the WGIII
- No governmental clearance needed; only the policy makers summary will be openly debated at the WGIII plenary in June/July 1995.
- Provides a good place to introduce integrated assessment tools and techniques.

CURRENT STATUS OF TECHNICAL SUMMARY:

- No change since October; expert comments have been collected but not addressed
- Tone and language require modification, since originally written to be policy-makers summary.
- Contains policy prescriptive tone.
- Needs quite a bit of work to bring in line with technical material found in document.



INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE



145 King Street West, Suite 1002, Toronto, Ontario M5H 3X6 CANADA
Tel: (416) 369-0900 Fax: (416) 369-0922

cc: RS
SK

MEMORANDUM

TO: Lead Authors
FROM: Erik Haites *EH*
RE: Attachments
DATE: December 7, 1994

Please find attached additional comments received on your chapter since our meeting in Vienna.

No more comments are being accepted as of December 7.

P938005.8\memo.543

Post-It™ Fax Note 7871E		Date	Dec. 7	# of pages	1
To		Dr. G. Shoglit			
Co./Dept.		From Erik Haites			
Phone #		Co.			
Fax #		Phone #			
(200) 395 6958		Fax #			

TABLE OF CONTENTS

Chapter 1: SCOPE OF THE ASSESSMENT

1.0 General Comments	1 - 2
1.1 Introduction	3 - 4
1.2 Features of Climate Change	5 -15
1.3 Contribution of Economics	16-18
1.4 Equity	19-27
1.5 Economics of Policy Actions	28-30
1.6 Sustainable Development	31-47
1.7 Endnotes	48-54
1.8 References	

2

Reference			Comments	Reviewer		ID	Response
Section	Page	Line		(Country #)			
01 Executive Summary							
1	1	8	Too alarmist and elitist in tone. The IPCC is not the same as the scientific community, should such a single group exist. The climate effects of doubled CO2 are not clear.	UK	118	i	
1	1	13-32	Re. line 13: Causality is not clear- natural warming might have added to CO2 increases. Re. line 17: Whose "purview" are the analysis of the causes of changes in GHG concentrations?? Re. line 32: If you distinguish between social sciences and economics, it should be explained and state which social sciences are included and which are not, and what the fundamental assumptions of each "science" are. How does economics relate to political ideology? This is clearly relevant to the issues of property rights, equity and compensation.	UK	118	i	
2	3-4	0	Because the listed complications related to climate change are different in both meaning and magnitude they could be divided into: principal-uncertainties, nonlinearities and irreversibilities, long horizon, time lags, global scope, and concrete-slow pace of (investment) change,etc.	BUL	122	i	
3	8	29-30	Conclusion that limited tradeoffs between Growth and emission reduction unsupported. Most economic models show GDP reductions of several percent by 2020. There is no need to introduce this controversial conclusion in the introductory chapter. It would be appropriate to raise the question as in the preceeding sentence (a) and leave the answer to the detailed discussion in the full chapter later.	USA	128	i	
3	8	35-38	It is very appropriate to use the approach where the atmosphere is considered a natural resource.	BUL	122	i	
3	9	38	There are no references to democratic or participatory decision making.	UK	118	i	
3	9-10	38-21	This section is very important and should be expanded, particularly the sub-sections 1.3.3.1 and 1.3.3.2.	BUL	122	i	

Reference			Comments	Reviewer (Country #)		ID	Response
Section	Page	Line					
3	11	0	A definition of efficiency is required here. Can it be measured? It surely is not the same as cost effective.	UK	118	1	
3	11	13-30	Value judgements are made without defense. Two important value judgements are made here without any argument or justification: that equity and efficiency should be separated (thus assuming that they can be); and that it is "inappropriate" to redress all equity issues through climate change initiatives. It is not clear what "inappropriate" means here: "wrong"? "bad"? "inadvisable"? It is doubtful that anyone would say that all equity issues can or should be redressed through climate change initiatives, but some think that it's legitimate to use any opening in an attempt to redress at least some past injustices. What exactly is the argument against people who think that?	USA	123	1	
6	28	8-10	The concept of sustainable development is a difficult one, but what is here is a crude, economic reading of the notion. It is not clear what "standard of living" means, but some would insist that what is important to sustain and develop is quality of life, where that is not the sort of thing that can easily be offset by increases in capital stock.	USA	123	1	
6	28	8-11	Also lines 19-22 - Physical Constraint on Economic Growth In his paper, "Intergenerational equity and exhaustible resources" (Review of Economic Studies, 1974), Slow uses a Cobb-Douglas function with 3 arguments: labour, capital and an exhaustible resources whose average product has no upper bound. There is some problems that may emerge with such a production function: - if the resource is fossil energy, it has been shown that in the Cobb-Douglas case, its efficiency (approximately its average product) could go up to infinity with enough capital, thus violating the second principle of thermodynamics - if the resource is raw materials (like copper) that combines with the final product, its substitution little by little by labour or capital implies at the limit complete	BELG	127	1	

WGIII Peer Review

December/ 6/1994

Page:

3

Reference			Comments	Reviewer		ID	Response
Section	Page	Line		(Country #)			
			dematerialisation of the final product These remarks also extend to technical progress of the Hicks-neutral type (which is used by Solow). One can react to the exhaustion of raw materials by recycling, but it is not always possible to recycle everything. In the case of iron for example, one has shown that complete recycling requires infinite energy. To conclude, increasing capital may not be enough to offset environmental degradation. To offset exhaustion of fossil energy for example, it may be necessary to provide future generations with enough non exhaustible energy.				
7	34	34-35	It would be useful to include concrete examples when reductions of gases contributing to local pollution may be at the expense of increased emissions of GHGs.	BUL	122	1	



INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE



145 King Street West, Suite 1002, Toronto, Ontario M5H 3X6 CANADA
Tel: (416) 369-0900 Fax: (416) 369-0922

cc: RS
SK

MEMORANDUM

TO: Lead Authors
FROM: Erik Haites *EH*
RE: Attachments
DATE: December 7, 1994

Please find attached additional comments received on your chapter since our meeting in Vienna.

No more comments are being accepted as of December 7.

P938005.8memo.543

Post-It Fax Note 7871E		Date	Dec. 7	# of pages
To	Dr. G. Shoglit		From	Erik Haites
Co./Dept.			Co.	
Phone #			Phone #	
Fax #	(202) 395 6958		Fax #	

TABLE OF CONTENTS

Chapter 1: SCOPE OF THE ASSESSMENT

1.0 General Comments	1 - 2
1.1 Introduction	3 - 4
1.2 Features of Climate Change	5 -15
1.3 Contribution of Economics	16-18
1.4 Equity	19-27
1.5 Economics of Policy Actions	28-30
1.6 Sustainable Development	31-47
1.7 Endnotes	48-54
1.8 References	

2

Reference			Comments	Reviewer		ID	Response
Section	Page	Line		(Country #)			
01 Executive Summary							
1	1	8	Too alarmist and elitist in tone. The IPCC is not the same as the scientific community, should such a single group exist. The climate effects of doubled CO2 are not clear.	UK	118	i	
1	1	13-32	Re. line 13: Causality is not clear- natural warming might have added to CO2 increases. Re. line 17: Whose "purview" are the analysis of the causes of changes in GHG concentrations?? Re. line 32: If you distinguish between social sciences and economics, it should be explained and state which social sciences are included and which are not, and what the fundamental assumptions of each "science" are. How does economics relate to political ideology? This is clearly relevant to the issues of property rights, equity and compensation.	UK	118	i	
2	3-4	0	Because the listed complications related to climate change are different in both meaning and magnitude they could be divided into: principal-uncertainties, nonlinearities and irreversibilities, long horizon, time lags, global scope, and concrete-slow pace of (investment) change,etc.	BUL	122	i	
3	8	29-30	Conclusion that limited tradeoffs between Growth and emission reduction unsupported. Most economic models show GDP reductions of several percent by 2020. There is no need to introduce this controversial conclusion in the introductory chapter. It would be appropriate to raise the question as in the preceeding sentence (a) and leave the answer to the detailed discussion in the full chapter later.	USA	128	i	
3	8	35-38	It is very appropriate to use the approach where the atmosphere is considered a natural resource.	BUL	122	i	
3	9	38	There are no references to democratic or participatory decision making.	UK	118	i	
3	9-10	38-21	This section is very important and should be expanded, particularly the sub-sections 1.3.3.1 and 1.3.3.2.	BUL	122	i	

WGIII Peer Review

December/ 6/1994

Page:

2

Reference			Comments	Reviewer		ID	Response
Section	Page	Line		(Country #)			
3	11	0	A definition of efficiency is required here. Can it be measured? It surely is not the same as cost effective.	UK	118	1	
3	11	13-30	Value judgements are made without defense. Two important value judgements are made here without any argument or justification: that equity and efficiency should be separated (thus assuming that they can be); and that it is "inappropriate" to redress all equity issues through climate change initiatives. It is not clear what "inappropriate" means here: "wrong"? "bad"? "inadvisable"? It is doubtful that anyone would say that all equity issues can or should be redressed through climate change initiatives, but some think that it's legitimate to use any opening in an attempt to redress at least some past injustices. What exactly is the argument against people who think that?	USA	123	1	
6	28	8-10	The concept of sustainable development is a difficult one, but what is here is a crude, economic reading of the notion. It is not clear what "standard of living" means, but some would insist that what is important to sustain and develop is quality of life, where that is not the sort of thing that can easily be offset by increases in capital stock.	USA	123	1	
6	28	8-11	Also lines 19-22 - Physical Constraint on Economic Growth In his paper, "Intergenerational equity and exhaustible resources" (Review of Economic Studies, 1974), Slow uses a Cobb-Douglas function with 3 arguments: labour, capital and an exhaustible resources whose average product has no upper bound. There is some problems that may emerge with such a production function: - if the resource is fossil energy, it has been shown that in the Cobb-Douglas case, its efficiency (approximately its average product) could go up to infinity with enough capital, thus violating the second principle of thermodynamics - if the resource is raw materials (like copper) that combines with the final product, its substitution little by little by labour or capital implies at the limit complete	BELG	127	1	

WGIII Peer Review

December/ 6/1994

Page: 3

Reference			Comments	Reviewer		ID	Response
Section	Page	Line		(Country #)			
			dematerialisation of the final product These remarks also extend to technical progress of the Hicks-neutral type (which is used by Solow). One can react to the exhaustion of raw materials by recycling, but it is not always possible to recycle everything. In the case of iron for example, one has shown that complete recycling requires infinite energy. To conclude, increasing capital may not be enough to offset environmental degradation. To offset exhaustion of fossil energy for example, it may be necessary to provide future generations with enough non exhaustible energy.				
7	34	34-35	It would be useful to include concrete examples when reductions of gases contributing to local pollution may be at the expense of increased emissions of GHGs.	BUL	122	1	



INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE



145 King Street West, Suite 1002, Toronto, Ontario M5H 3X6 CANADA
Tel: (416) 369-0900 Fax: (416) 369-0922

cc: RB
SR

MEMORANDUM

TO: Dr. Joseph Stiglitz
CC: Dr. Ray Squiteri
FROM: Erik Haites *Erik Haites*
RE: Intertemporal Equity and Discount Rate Chapter
DATE: December 5, 1994

I would appreciate your reactions to the following comments concerning the chapter on Intertemporal Equity and the Discount Rate. I will be meeting separately with Bill Cline and Mohan Munasinghe, your co-authors on this chapter, before we meet on Thursday afternoon. I propose to discuss these comments with them as well.

The discount rate discussion presents the conventional approach of maximizing the marginal utility of consumption over time. It is my understanding that Cline, Manne and Nordhaus, among others, all start from this premise. Cline presents arguments about appropriate values for the components of the discount rate for climate change analyses. Manne develops a model to illustrate that the discount rate must be consistent with the opportunity cost of capital. Nordhaus argues, among other things, that the values advocated by Cline are well below the opportunity cost of capital.

Schelling rejects the approach of deriving the discount rate from a model that maximizes the marginal utility of consumption over time. The fundamental reason for rejecting this approach is that it is not a single agent whose consumption is being maximized, rather different agents at different points in time. Hence, we must focus on the utility effects of income transfers between agents rather than maximizing utility for a single agent. The Schelling critique appears to merit at least a box.

Schelling points out once we abandon this conventional approach, the resources to be devoted to mitigation of climate change become a matter of choice, not an analytical result. He does not set out possible grounds for deciding upon the level of resources to devote to climate change, however,

Discount Rate and Intertemporal Equity Chapter

December 5, 1994

Page 2

- the expenditures to address climate change could be based on one or more ethical principals, such as sustainable development or an environmental trust. The principle(s), actions and expenditures would probably be established by government, not individuals; or
- the actions to address climate change, including resource transfers to other countries, could be established through international negotiation under the Framework Convention on Climate Change. The outcome of the negotiations need not reflect any specific ethical principles.

Such grounds would make a nice link to the discussion of intertemporal equity in the rest of the chapter where concepts such as sustainable development and an environmental trust should be discussed.

Accepting Schelling's argument that the level of expenditures devoted to climate change is a matter of choice, specific actions must still be selected. Assuming the cost of the possible actions exceeds the level of expenditures selected, the most cost-effective measures should be selected. This requires the use of a discount rate, since the time profile of expenditures for alternative actions are likely to be different. It seems to me that the appropriate discount rate in this context is the opportunity cost of capital to government for long run investments. Nordhaus' argument that the discount rate should be linked to the opportunity cost of capital then becomes particularly compelling.

I hope you have a few moments to reflect on these ideas before we meet on Thursday afternoon. I realize that most of the short time we have available will be devoted to discussion of chapter 1, but your comments on chapter 4 would also be appreciated.

From: Sally M. Kane (KANE_S)
To: Stiglitz_J
Date: Wednesday, December 7, 1994 10:52 am
Subject: IPCC: Discounting and Scope

SCOPE: Editorial changes have been thoroughly discussed by the writing team, led by Ray. Outstanding issues are population and equity.

Substantive suggestion has been raised to blend in technical summary of the entire document into SCOPE chapter. THIS SUGGESTION HAS NOT BEEN DISCUSSED BY THE WRITING TEAM (OR BY CEA). BRUCE AND HAITES ARE IN FAVOR OF THIS PROPOSAL IF YOU AGREE. THEY ARE DRAFTING A SHORT POLICY MAKERS SUMMARY AND SEE THIS AS A WAY OF RAISING THE VISIBILITY OF THE SCOPE CHAPTER. I will inform Ray of this new development and we will prepare options for your consideration for tomorrow's meeting.

DISCOUNTING: Substantive challenging comments were raised by Nordhaus and others. Eric would like to meet with you to discuss the nature of the problems and elicit your help in reining in Bill Cline. Eric's recommendation: ask Randy Lyon (OMB) to help draft sections and work closely with Bill Cline in staffing your efforts.

QUESTION: I know that Randy is interested in maintaining the integrity of WGIII of the IPCC and I believe would enjoy the work. Would you like me to ask him if he wants to get involved and have come to meet with you and Eric tomorrow???

CC: Branch_L

*Joe: Per the above, should I
set up for discounting mtg
w/ Eric & H., including Randy
Lyon (time 4:30-5pm)*

Yes _____

No _____

Withdrawal/Redaction Marker

Clinton Library

DOCUMENT NO. AND TYPE	SUBJECT/TITLE	DATE	RESTRICTION
001. fax	To Joe Stiglitz from Ruby Saha [8 USC § 1202(f)] (1 page)	12/06/1994	P3/b(3), b(6)

COLLECTION:

Clinton Presidential Records
Council of Economic Advisers
Stiglitz, Joseph
OA/Box Number: 9555

FOLDER TITLE:

Debriefing on IPCC [Intergovernmental Panel on Climate Change] Lead Authors WGIII
[Working Group 3] Meeting in Vienna, Thursday 12/8/1994

2017-1095-F
bg240

RESTRICTION CODES

Presidential Records Act - [44 U.S.C. 2204(a)]

- P1 National Security Classified Information [(a)(1) of the PRA]
- P2 Relating to the appointment to Federal office [(a)(2) of the PRA]
- P3 Release would violate a Federal statute [(a)(3) of the PRA]
- P4 Release would disclose trade secrets or confidential commercial or financial information [(a)(4) of the PRA]
- P5 Release would disclose confidential advice between the President and his advisors, or between such advisors [(a)(5) of the PRA]
- P6 Release would constitute a clearly unwarranted invasion of personal privacy [(a)(6) of the PRA]

C. Closed in accordance with restrictions contained in donor's deed of gift.

PRM. Personal record misfile defined in accordance with 44 U.S.C. 2201(3).

RR. Document will be reviewed upon request.

Freedom of Information Act - [5 U.S.C. 552(b)]

- b(1) National security classified information [(b)(1) of the FOIA]
- b(2) Release would disclose internal personnel rules and practices of an agency [(b)(2) of the FOIA]
- b(3) Release would violate a Federal statute [(b)(3) of the FOIA]
- b(4) Release would disclose trade secrets or confidential or financial information [(b)(4) of the FOIA]
- b(6) Release would constitute a clearly unwarranted invasion of personal privacy [(b)(6) of the FOIA]
- b(7) Release would disclose information compiled for law enforcement purposes [(b)(7) of the FOIA]
- b(8) Release would disclose information concerning the regulation of financial institutions [(b)(8) of the FOIA]
- b(9) Release would disclose geological or geophysical information concerning wells [(b)(9) of the FOIA]

Withdrawal/Redaction Marker

Clinton Library

DOCUMENT NO. AND TYPE	SUBJECT/TITLE	DATE	RESTRICTION
002. fax	To Joe Stiglitz from Ruby Saha [8 USC § 1202(f)] (1 page)	12/02/1994	P3/b(3), b(6)

COLLECTION:

Clinton Presidential Records
Council of Economic Advisers
Stiglitz, Joseph
OA/Box Number: 9555

FOLDER TITLE:

Debriefing on IPCC [Intergovernmental Panel on Climate Change] Lead Authors WGIII
[Working Group 3] Meeting in Vienna, Thursday 12/8/1994

2017-1095-F
bg240

RESTRICTION CODES

Presidential Records Act - [44 U.S.C. 2204(a)]

- P1 National Security Classified Information [(a)(1) of the PRA]
- P2 Relating to the appointment to Federal office [(a)(2) of the PRA]
- P3 Release would violate a Federal statute [(a)(3) of the PRA]
- P4 Release would disclose trade secrets or confidential commercial or financial information [(a)(4) of the PRA]
- P5 Release would disclose confidential advice between the President and his advisors, or between such advisors [(a)(5) of the PRA]
- P6 Release would constitute a clearly unwarranted invasion of personal privacy [(a)(6) of the PRA]

C. Closed in accordance with restrictions contained in donor's deed of gift.

PRM. Personal record misfile defined in accordance with 44 U.S.C. 2201(3).

RR. Document will be reviewed upon request.

Freedom of Information Act - [5 U.S.C. 552(b)]

- b(1) National security classified information [(b)(1) of the FOIA]
- b(2) Release would disclose internal personnel rules and practices of an agency [(b)(2) of the FOIA]
- b(3) Release would violate a Federal statute [(b)(3) of the FOIA]
- b(4) Release would disclose trade secrets or confidential or financial information [(b)(4) of the FOIA]
- b(6) Release would constitute a clearly unwarranted invasion of personal privacy [(b)(6) of the FOIA]
- b(7) Release would disclose information compiled for law enforcement purposes [(b)(7) of the FOIA]
- b(8) Release would disclose information concerning the regulation of financial institutions [(b)(8) of the FOIA]
- b(9) Release would disclose geological or geophysical information concerning wells [(b)(9) of the FOIA]

Withdrawal/Redaction Marker

Clinton Library

DOCUMENT NO. AND TYPE	SUBJECT/TITLE	DATE	RESTRICTION
--------------------------	---------------	------	-------------

003. memo	To Joe [Stiglitz], re: debriefing [PII] [partial] (1 page)	11/28/1994	b(6)
-----------	--	------------	------

COLLECTION:

Clinton Presidential Records
Council of Economic Advisers
Stiglitz, Joseph
OA/Box Number: 9555

FOLDER TITLE:

Debriefing on IPCC [Intergovernmental Panel on Climate Change] Lead Authors WGIII
[Working Group 3] Meeting in Vienna, Thursday 12/8/1994

2017-1095-F
bg240

RESTRICTION CODES

Presidential Records Act - [44 U.S.C. 2204(a)]

- P1 National Security Classified Information [(a)(1) of the PRA]
- P2 Relating to the appointment to Federal office [(a)(2) of the PRA]
- P3 Release would violate a Federal statute [(a)(3) of the PRA]
- P4 Release would disclose trade secrets or confidential commercial or financial information [(a)(4) of the PRA]
- P5 Release would disclose confidential advice between the President and his advisors, or between such advisors [(a)(5) of the PRA]
- P6 Release would constitute a clearly unwarranted invasion of personal privacy [(a)(6) of the PRA]

C. Closed in accordance with restrictions contained in donor's deed of gift.

PRM. Personal record misfile defined in accordance with 44 U.S.C. 2201(3).

RR. Document will be reviewed upon request.

Freedom of Information Act - [5 U.S.C. 552(b)]

- b(1) National security classified information [(b)(1) of the FOIA]
- b(2) Release would disclose internal personnel rules and practices of an agency [(b)(2) of the FOIA]
- b(3) Release would violate a Federal statute [(b)(3) of the FOIA]
- b(4) Release would disclose trade secrets or confidential or financial information [(b)(4) of the FOIA]
- b(6) Release would constitute a clearly unwarranted invasion of personal privacy [(b)(6) of the FOIA]
- b(7) Release would disclose information compiled for law enforcement purposes [(b)(7) of the FOIA]
- b(8) Release would disclose information concerning the regulation of financial institutions [(b)(8) of the FOIA]
- b(9) Release would disclose geological or geophysical information concerning wells [(b)(9) of the FOIA]

November 28, 1994

TO: Joe

Before Sally left for the airport, she called and left following message.

She talked with Goldemberg and Haites and they both suggest holding a debriefing for you and Goldemberg with the other co-authors, Goldemberg will be in Washington next Thurs, 12/8, and perhaps Erik around the same time. Sally suggest a 2-3 hr debriefing.

If you agree to such a debriefing, Sally ask that you get back to her (in Vienna) quickly, and she will discuss the possibility of getting the co-authors together next Thurs.

Agree to a debriefing ☒ 4.7.7

Do not agree ☐ (bad timing)

REMINDER: WH budget and health care meetings are scheduled on the calendar at the last moment.

[003]

(b)(6)
① Goldemberg in town noon @ 12/8, lunch for Noon-3 @ World Bank. 36. no meeting will stay over. 4/1 Sat (but plan to be on FTI for NY)

② Erik Haites will talk to you. 416-369-2899 (Haites) Ruby, 1472

[003]

PLEASE DELIVER IMMEDIATELY! THANK YOU!



**EXECUTIVE OFFICE OF THE PRESIDENT
COUNCIL OF ECONOMIC ADVISERS**

Date: 12/6/94/4:15pm

Please deliver to: Mrs. (Ruby) Visaya L. Saha
c/o 5 Lamb. Close
Watford, LONDON

FAX number of addressee: 9-011-44-923-681-885

Telephone number of addressee: _____

From: JOSEPH E. STIGLITZ, MEMBER/
Lisa D. Branch, Exec. Assistant

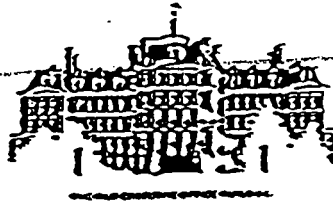
FAX number of sender: 202-395-6958

Telephone number of sender: 202-395-5036

Number of pages, including cover sheet: 1

The meeting will take place on 12/8, @ 3:00p.m., in Rm. 314 of the Old Executive Office Building (EOEB). You could use any entrance to enter the building. Once you have entered the building, please present your picture i.d. to the security guard and he/she will clear you to come to our office on the third floor. Let me know if you require additional assistance. Lisa Branch

PLEASE DELIVER IMMEDIATELY! THANK YOU!



**EXECUTIVE OFFICE OF THE PRESIDENT
COUNCIL OF ECONOMIC ADVISERS**

Date: 12/6/94/4:15pm

Please deliver to: Mrs. (Ruby) Visaya L. Saha
c/o 5 Lamb. Close
Watford, LONDON

FAX number of addressee: 9-011-44-923-681-885

Telephone number of addressee: _____

From: JOSEPH E. STIGLITZ, MEMBER/
Lisa D. Branch, Exec. Assistant

FAX number of sender: 202-395-6958

Telephone number of sender: 202-395-5036

Number of pages, including cover sheet: 1

One additional note: The OEOB is located on the corner of 17th and Pennsylvania Avenue, NW (next door to the White House).

Lisa

***** -JOURNAL- ***** DATE DEC-04-1990 ***** TIME 17:06 *****

DATE/TIME = DEC-04 17:05

JOURNAL NO. = 07

COMM.RESULT = OK

PAGES = 001/001

FILE NO. = 650

DURATION = 00:00'50

MODE = MEMORY XMT

STATION NAME =

TELEPHONE NO. = T 901144923681885

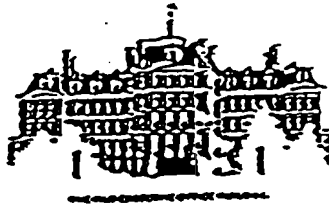
RECEIVED ID = 0923 681885

RESOLUTION = STANDARD

-CEA

***** -202 395 6958 - ***** - 202 395 6958- *****

URGENT DELIVERY REQUESTED!



**EXECUTIVE OFFICE OF THE PRESIDENT
COUNCIL OF ECONOMIC ADVISERS**

Date: 12/6/94

Please deliver to: Mrs. (Ruby) Visaya Lakshmi Saha
c/o 5 Lamb Close
Watford, London

9-011-44-923-681-885

FAX number of addressee: _____

Telephone number of addressee: _____

From: JOSEPH E. STIGLITZ, MEMBER/
Lisa D. Branch, Exec. Assistant

FAX number of sender: 202-395-6958

Telephone number of sender: 202-395-5036

Number of pages, including cover sheet: 3

We apologize for the delay in responding to your fax of Dec. 2nd. Dr. Stiglitz hopes the attached letter will be useful in obtaining a visa. Via fax, please confirm receipt of the attached documents. Thank you.

Lisa Branch



EXECUTIVE OFFICE OF THE PRESIDENT
COUNCIL OF ECONOMIC ADVISERS
WASHINGTON, D.C. 20500

MEMBER

December 6, 1994

Dear Ruby:

I hope you haven't had any problems getting a visa. I've encountered a little difficulty in generating a letter to be sent to the U.S. Embassy. Perhaps the enclosed letter is all you need. Let me know if you need any more assistance. I could be reached at 202-395-5036 or fax, 202-395-6958.

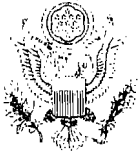
Best wishes,

Joseph E. Stiglitz

Mrs. (Ruby) Visaya Lakshmi Saha
c/o 5 Lamb Close
Watford
London
ENGLAND

Enclosure

P.S. Is there a telephone number where I could reach you. Also, if you attend the meeting on Thursday, for security clearance, I will need your date of birth and passport number. Please bring picture I.D. with you.



EXECUTIVE OFFICE OF THE PRESIDENT
COUNCIL OF ECONOMIC ADVISERS
WASHINGTON, D.C. 20500

MEMBER

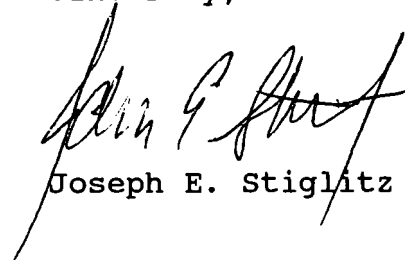
December 5, 1994

Dear Mrs. Saha:

This letter is to invite you to participate in a Lead Authors Working Group III meeting of the Intergovernmental Panel on Climate Change (IPCC) which will be held in my office on Thursday, December 8.

I hope that you will be able to attend the meeting. Your participation is of great importance for the success of this meeting.

Sincerely,



Joseph E. Stiglitz

Mrs. Visaya Lakshmi Saha
c/o 5 Lamb Close
Watford
London
ENGLAND

Withdrawal/Redaction Marker

Clinton Library

DOCUMENT NO. AND TYPE	SUBJECT/TITLE	DATE	RESTRICTION
004. fax	To Joe Stiglitz from Ruby Saha [8 USC § 1202(f)] [duplicate] (1 page)	12/02/1994	P3/b(3), b(6)

COLLECTION:

Clinton Presidential Records
Council of Economic Advisers
Stiglitz, Joseph
OA/Box Number: 9555

FOLDER TITLE:

Debriefing on IPCC [Intergovernmental Panel on Climate Change] Lead Authors WGIII
[Working Group 3] Meeting in Vienna, Thursday 12/8/1994

2017-1095-F
bg240

RESTRICTION CODES

Presidential Records Act - [44 U.S.C. 2204(a)]

- P1 National Security Classified Information [(a)(1) of the PRA]
- P2 Relating to the appointment to Federal office [(a)(2) of the PRA]
- P3 Release would violate a Federal statute [(a)(3) of the PRA]
- P4 Release would disclose trade secrets or confidential commercial or financial information [(a)(4) of the PRA]
- P5 Release would disclose confidential advice between the President and his advisors, or between such advisors [(a)(5) of the PRA]
- P6 Release would constitute a clearly unwarranted invasion of personal privacy [(a)(6) of the PRA]

C. Closed in accordance with restrictions contained in donor's deed of gift.

PRM. Personal record misfile defined in accordance with 44 U.S.C. 2201(3).

RR. Document will be reviewed upon request.

Freedom of Information Act - [5 U.S.C. 552(b)]

- b(1) National security classified information [(b)(1) of the FOIA]
- b(2) Release would disclose internal personnel rules and practices of an agency [(b)(2) of the FOIA]
- b(3) Release would violate a Federal statute [(b)(3) of the FOIA]
- b(4) Release would disclose trade secrets or confidential or financial information [(b)(4) of the FOIA]
- b(6) Release would constitute a clearly unwarranted invasion of personal privacy [(b)(6) of the FOIA]
- b(7) Release would disclose information compiled for law enforcement purposes [(b)(7) of the FOIA]
- b(8) Release would disclose information concerning the regulation of financial institutions [(b)(8) of the FOIA]
- b(9) Release would disclose geological or geophysical information concerning wells [(b)(9) of the FOIA]

UNIVERSIDADE DE SÃO PAULO
INSTITUTO DE ELETROTÉCNICA E ENERGIA

Av. Prof. Almeida Prado, 925 - Cidade Universitaria

05508-900 - São Paulo - SP - BRAZIL

Tel: (55-11) 818-5053 / 818-5054

Fax: (55-11) 818-5031 / 818-5056

e-mail: goldemberg@nhi.lead.org.br

DATE: 11/30/94

NUMBER OF PAGES: 01

FROM: Prof. Jose Goldemberg

TO: Dr. J. Stigglitz (attention to LISA)

FAX: (001-202) 395-6958

MESSAGE:

Dear Dr. Stigglitz,

In addition to Thursday afternoon December 8th (3 to 4.30 PM) I'm available Friday morning December 9th, if needed.

Regards,

José Goldemberg



INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE



145 King Street West, Suite 1002, Toronto, Ontario M5H 3X6 CANADA
Tel: (416) 369-0900 Fax: (416) 369-0922

*cc: RS
SK*

MEMORANDUM

TO: Dr. Joseph Stiglitz
CC: Dr. Ray Squiteri
FROM: Erik Haites *Erik Haites*
RE: Intertemporal Equity and Discount Rate Chapter
DATE: December 5, 1994

I would appreciate your reactions to the following comments concerning the chapter on Intertemporal Equity and the Discount Rate. I will be meeting separately with Bill Cline and Mohan Munasinghe, your co-authors on this chapter, before we meet on Thursday afternoon. I propose to discuss these comments with them as well.

The discount rate discussion presents the conventional approach of maximizing the marginal utility of consumption over time. It is my understanding that Cline, Manne and Nordhaus, among others, all start from this premise. Cline presents arguments about appropriate values for the components of the discount rate for climate change analyses. Manne develops a model to illustrate that the discount rate must be consistent with the opportunity cost of capital. Nordhaus argues, among other things, that the values advocated by Cline are well below the opportunity cost of capital.

Schelling rejects the approach of deriving the discount rate from a model that maximizes the marginal utility of consumption over time. The fundamental reason for rejecting this approach is that it is not a single agent whose consumption is being maximized, rather different agents at different points in time. Hence, we must focus on the utility effects of income transfers between agents rather than maximizing utility for a single agent. The Schelling critique appears to merit at least a box.

Schelling points out once we abandon this conventional approach, the resources to be devoted to mitigation of climate change become a matter of choice, not an analytical result. He does not set out possible grounds for deciding upon the level of resources to devote to climate change, however,

12/6/94

Post-It[®] brand fax transmittal memo 7671 # of pages *2*

To: <i>RAY Squiteri</i>	From: <i>LISA Branch</i>
Co: <i>AT&T</i>	Co: <i>CEA</i>
Dept.	Phone #
Fax #	Fax #

Discount Rate and Intertemporal Equity Chapter

December 5, 1994

Page 2

- the expenditures to address climate change could be based on one or more ethical principals, such as sustainable development or an environmental trust. The principle(s), actions and expenditures would probably be established by government, not individuals; or
- the actions to address climate change, including resource transfers to other countries, could be established through international negotiation under the Framework Convention on Climate Change. The outcome of the negotiations need not reflect any specific ethical principles.

Such grounds would make a nice link to the discussion of intertemporal equity in the rest of the chapter where concepts such as sustainable development and an environmental trust should be discussed.

Accepting Schelling's argument that the level of expenditures devoted to climate change is a matter of choice, specific actions must still be selected. Assuming the cost of the possible actions exceeds the level of expenditures selected, the most cost-effective measures should be selected. This requires the use of a discount rate, since the time profile of expenditures for alternative actions are likely to be different. It seems to me that the appropriate discount rate in this context is the opportunity cost of capital to government for long run investments. Nordhaus' argument that the discount rate should be linked to the opportunity cost of capital then becomes particularly compelling.

I hope you have a few moments to reflect on these ideas before we meet on Thursday afternoon. I realize that most of the short time we have available will be devoted to discussion of chapter 1, but your comments on chapter 4 would also be appreciated.

JAMES P. BRUCE
1875 Juno Ave
Ottawa Canada
K1H 6S6

Tel: 613 731- 29
Fax: 613 731- 09

6 December, 1994

Dr. Joseph Stiglitz
Council of Economic Advisors
328 Old Executive Office Building
Washington, D.C. 20,500
U.S.A.

Fax: 202 395 6938

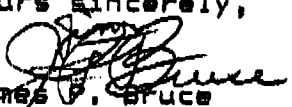
Dear Joe,

My apologies for being unable to join you, Jose Goldemberg and others in Washington 8 December. I understand from several members of the Writing Team I that the meeting in Vienna was productive, and should help in producing a chapter with perspectives from several corners of the globe.

Erik Haites will be able to attend and he has a good knowledge of my hopes for your chapter.

Best wishes for a successful meeting.

Yours sincerely,


James P. Bruce
Co-Chair, IPCC WG III

cc: Dr. Erik Haites, IPCC TSU WG III, Toronto