



**PROCEEDINGS OF THE
8TH INTER-GOVERNMENTAL MEETING
AND
8TH SCIENTIFIC PLANNING GROUP MEETING**

**Hanoi, Viet Nam
10-14 March 2003**

PREFACE

The 8th APN Scientific Planning Group (SPG) and Inter-Governmental Meeting (IGM) meetings in Hanoi from 10-14 March 2003 concluded with many fruitful outcomes. On behalf of the Secretariat, I would also like to express special thanks to the Ministry of Natural Resources and Environment, as well as to the Ministry of Science and Technology, Viet Nam, for providing important support in hosting and organising the SPG and IGM meetings.

I personally believe that the 8th IGM will be remembered as a meeting of major importance to the APN, as it opened the way to strengthening APN activities by endorsing the “Scientific Capacity Building/Enhancement for Sustainable Development in Developing Countries” (CAPaBLE) Programme. More details of the CAPaBLE Programme can be seen on the APN website <www.apn.gr.jp> Furthermore, we have also started to prepare for the evaluation of the APN as we approach our 10th Anniversary in 2005.

It should also be noted that the 8th IGM also opened a new platform for partnership and collaboration crucial to the future of the APN. Financial commitments from Australia and New Zealand to the CAPaBLE Programme, as well as active participation of the global change programmes and networks are certainly promising. I am also pleased to share the impression with you that APN has increasingly been recognized as one of the major forces in global change research activities.

The secretariat will do its best to implement the agreed activities in a successful manner and very much looks forward to an exciting and rewarding year. Last but not least, thanks to all the participants from member countries, APN liaison officers, and the global change programmes and networks, who made the SPG and IGM meetings so successful.



Sombo T. Yamamura
Director
APN Secretariat

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SECTION I

8th APN Inter-Governmental Meeting

**Hanoi, Viet Nam
13-14 March 2003**

Chair's Summary

Chair's Summary
8th APN Inter-Governmental Meeting
13-14 March 2003
Hanoi, Viet Nam

Representatives attended the meeting from Australia, Cambodia, China, Indonesia, Japan, Lao P.D.R., Malaysia, Mongolia, Nepal, New Zealand (who is also SPG Co-Chair), Pakistan, Philippines, Republic of Korea, Sri Lanka, Thailand, USA, Viet Nam, APN Liaison Officers, and observers from ENRICH, IAI, IGBP, IHDP, the Millennium Ecosystem Assessment, START, and the other Co-Chair of the APN Scientific Planning Group. The list of participants is given at **Attachment 1**.

1. Opening

The APN Secretariat Director, Mr. Sombo Yamamura, introduced Honoured Guest, Dr. Cong Thanh Nguyen, Vice Minister, Ministry of Natural Resources and Environment, Viet Nam, and invited him to make an opening statement. In his speech, Dr. Nguyen outlined Viet Nam's environmental protection measures, which have been greatly bolstered with support from international organisations, such as APN. Dr. Nguyen also highlighted Viet Nam's involvement in international climate change issues, for example, the UNFCCC and the Kyoto Protocol.

The Secretariat Director thanked Dr. Nguyen for his comments, as well as the Ministry of Natural Resources and Environment and Mr. Xuan Bao Tam Nguyen for hosting the meeting and for their organisational contributions. The Director also noted his appreciation to all delegates and observers for their participation in the meeting, which promised to be very productive.

2. Election of Officers

¹Dr. Duc Hai Tran was elected as Chair. Dr. Michael Stoddart of Australia and Mr. Feng Gao of China were elected as Vice-Chairs.

3. Adoption of Agenda

The agenda was adopted as proposed.

4. Review of Activities 2002/03 from the Secretariat

The APN Secretariat reviewed the year's achievements. Since the 7th IGM efforts have been made to mobilise financial resources. The first APN synthesis (land use and cover change) is in the process of completion. A draft synthesis report has been prepared and is being

¹ Dr. Duc Hai Tran was unable to Chair the meeting due to unforeseen circumstances, hence the election of two Vice-Chairs.

reviewed by the assigned workshop editorial committee. This report will be integrated into the 2002/2003 annual report. An APN/START awareness-raising symposium was convened in Northeast Asia and one symposium and two workshops were held in Kobe. However, the APN/START workshop planned to be held in Uzbekistan, Central Asia, has been postponed. A new date will be circulated to APN members in due course. The Secretariat also pointed out that several missions were made, thus highlighting that APN *is* a regional network with a global presence. It was pointed out that the Steering Committee had also recommended that the APN Secretariat provide more information on which global change related meetings are being held and involve the Steering Committee in discussions on which meetings the Secretariat should attend in the future.

Action: Secretariat

A Summary of the 2002/2003 activity, project and regional reports was presented. The Secretariat highlighted the new APN publication: *Projects, Activities and Regional Reports*. In addition, project reporting procedures and the provision of guidelines to project leaders who request extensions to their reports and/or projects were also discussed.

The New Zealand national Focal Point/SPG Co-Chair, Dr. Andrew Matthews, emphasised that APN should be moving in a direction that promotes professionalism in order to secure and maintain the interest and involvement of prospective funding bodies and other stakeholders, and to show that APN is, in fact, a key player in the global change community. The professional quality and content of the reports submitted by project leaders was also highlighted as being of key importance, particularly any peer-reviewed journal publications that were a direct outcome of an APN-funded project.

The Secretariat reported SPG recommendations that, under the “Basic Guidelines for Project Extensions,” the Secretariat:

- State that only “no-cost extensions” will be considered;
- Change the wording of “proposal” to “detailed request;” and
- State that the “detailed request” must be submitted at least 3 months prior to the originally scheduled official end of the project.

In the initial award letters to proponents, the APN Secretariat is to emphasise that:

- The final 20% of each grant will be remitted only on receipt of the Final Activity Report and Final Financial Report as stated in the APN contract.

The IGM approved these recommendations.

Action: Secretariat

5. APN Liaison Officers’ Annual Reports 2002/2003

The Secretariat introduced the APN Liaison Officers (APN supporting officers in the START Regional Centers) and their mandate under the APN Research Framework. The Liaison Officers then provided a regional overview of their past year’s activities.

The IGM acknowledged the Liaison Officer’s potential to contribute to the goals of APN, particularly through dissemination of information and networking. It was noted, however,

that the Secretariat should consider ways to consolidate their role. Communication and networking between national Focal Points and Liaison Officers also needs to be improved. The Secretariat recommended that to further promote communications with Liaison Officers and Project Leaders of APN-supported projects in their region, initial award letters to Project Leaders should include Liaison Officer contact details. Project Leaders are also to be encouraged to contact the APN Liaison Officer for their region.

Action: Secretariat, national Focal Points and Liaison Officers

6. Financial reports and 2003/2004 budget

The Secretariat presented the Final 2001/2002 Financial Report for the fiscal year ending March 2002, the Draft 2002/2003 Financial Report and the proposed 2003/2004 Budget. Delegates were asked to consider and approve each of these.

The IGM recommended that the reference to taxes be clarified to make it clear that the word “consumption” be removed and state “tax” in the proposed 2003/2004 budget.

All financial items were accepted and adopted.

Action: Secretariat

7. Financial Resources

The Secretariat outlined 2002 efforts at mobilising financial resources from Australia and New Zealand, and described the establishment of the ad hoc resources development committee.

The IGM acknowledged and thanked Australia for their contribution. The Australian national Focal Point, Dr. Michael Stoddart, announced that the Australian contribution is earmarked for the CAPaBLE programme.

The New Zealand national Focal Point stated that the New Zealand government welcomes the CAPaBLE Programme and will contribute NZ\$ 10,000 to the programme. The IGM thanked New Zealand.

The IGM approved the establishment of an Ad Hoc Resources Development Committee (Australia, China, Japan, Malaysia, New Zealand, Republic of Korea, Sri Lanka, Thailand and the USA) with the following terms of reference:

- The Committee will be opened to every national Focal Point (or FP may designate someone to act on their behalf);
- The Committee will elect a Chair;
- The Chair will attend the Steering Committee Meetings;
- The Committee will work through electronic means and the Chair will report to the 8th Steering Committee Meeting in December and then to the 9th IGM in one year's time;

- A project development mode to mobilise funds may have to be established to seek funding – this could be aided by the SPG; and
- Specific method needs to be developed when approaching individual funding agencies.

Action: Ad hoc Resources Development Committee

8. Proposals Process

The Secretariat reported on the pre-proposal and full proposal stages in the assessment of 2002 proposals and the recommendations for confirmation of multi-year projects. A total of 52 pre-proposals were received in the June 2002 pre-proposals round. The Secretariat reported that the pre-proposals stage for this year is a success and the IGM agreed that APN distribute a questionnaire to pre-proponents from previous years for feedback. The results of the questionnaire are then to be disseminated to the APN members.

Action: Secretariat

The Secretariat received 56 full proposals in the September 2002 proposals round (one additional proposal was later submitted as an output of the APN/START Northeast Asia awareness raising symposium). In the Rapid Assessment Stage only one proposal was considered “unsuitable” and rejected. Therefore, 56 proposals proceeded to the first stage of the review process by the SPG. Of these, 27 proposals, i.e., 48% advanced to the final stage of the proposal review process. The success rate of the proposals stage is to be disseminated on the APN website.

Action: Secretariat

The Proposals Review System and options to reduce the burden on both the Small Group and the SPG reviewers was discussed. The IGM approved the recommendations for a revised process that is used on an interim basis and prior to being presented for formal adoption at the 9th IGM.

The IGM agreed that:

- The Rapid Assessment Stage continue, but more refined criteria be established in the Rapid Assessment Stage guidelines for Small Group members;
- More refined criteria be established in the Reviewer Guidelines for SPG members and that the scoring system currently in place remains;
- The Secretariat work with the Global Change Programmes in creating a list of external reviewers who can be asked to review APN proposals (in their respective areas of expertise) that are short-listed for Stage 2; and
- Selected external reviewers are to be asked to comment on the proposals but not provide a score.

Action: Secretariat and Steering Committee

Per diem rates were discussed and it was noted that the per diem rates were provided as *guidelines only* and that the rates are negotiable. It was further emphasised, however, that

cost-effectiveness was extremely important to effectively maximise the amount of funds available for actual scientific activities.

9. Scientific Planning Group Report

Dr. Andrew Matthews, Co-Chair of the Scientific Planning Group read through the Co-Chair Summary of the 8th SPG Meeting.

The following points were clarified for the IGM:

- The promotion of professionalism is important;
- The Secretariat should provide more information on which global change meetings are being held and involve the Steering Committee in discussions on which meetings the Secretariat should attend in the future;
- The proposals review system should be made even more effective;
- Communication between Liaison Officers, SPG members and national Focal Points is important;
- The APN should develop a systematic approach to Capacity Building (initially through CAPaBLE);
- The SPG strongly recommended that the CAPaBLE Programme be adopted as an integral activity of APN;
- An Annual Report would be very important in terms of how APN presents itself to the Global Change community and the outside world;
- It is important for APN sponsored scientists to submit peer-reviewed literature in order for APN to receive credit for its contributions to international assessments;
- The current *Key Scientific Priorities* of APN should be reviewed by the 9th SPG/IGM; and
- Dr. Moten of Malaysia would be standing down as SPG Co-Chair and that Dr. Muhammad of Pakistan would be his successor.

The IGM expressed its appreciation for the work of the SPG members, and SPG Co-Chair's.

10. 2003/04 Funded Projects

Dr. Matthews, as SPG Co-chair, presented to the IGM for their approval those recommendations for continuing Multi-Year Projects. He emphasised that the recommendations were based on the progress reports and other supporting evidence submitted by the project leaders. Multi-Year Projects were approved by the IGM. Dr. Matthews explained the rationale behind the SPG recommendations for funding proposals short-listed at Stage 2 of the Proposals Process. The SPG rating for scientific excellence and average score were used as the main basis for the funding recommendations. Other major factors included budgetary aspects and the number of high scores.

The IGM approved the funding recommendations made by the Scientific Planning Group as follows:

- 6 continuing multi-year projects;
- 10 new projects; and
- 1 project to receive seed funding.

A list of these projects is provided as **Attachment 2**.

The IGM pointed out that those projects approved to provide funding support for other meetings or conferences should be awarded with the specific condition:

- That the Asia-Pacific participants selected to attend get together informally to discuss mutual and beneficial cooperation for their respective countries and for the region.

11. APN Network & Capacity Building Programme

The Secretariat provided an overview of the networking and capacity building programme.

The SPG meeting suggested that holding “awareness raising symposia” has run its course and that future APN Networking and Capacity Building activities could incorporate the following:

- Networking expansion through the Pacific Island Summit (being held in May 2003) and through the APN Liaison Officers;
- Enrichment of the APN website as a tool for Networking support and expansion
- Further encouragement of Networking of adjacent countries; and
- Linking with the CAPaBLE Programme for a more systematic development of the APN capacity building programme and its activities.

The IGM approved the SPG recommendations.

12. CAPaBLE Programme

The IGM considered the CAPaBLE Programme an excellent opportunity and agreed that the programme is compatible with APN objectives and facilitating APN’s approach to capacity enhancement and capacity building in a more systematic manner. The IGM congratulated the Ministry of the Environment of Japan and the Hyogo Prefecture Government for initiating this programme.

The IGM:

- Noted that criteria contained in page 7 of the proposal for developing country experienced scientists of the comprehensive research projects should be modified to read:
“Be led by developing country experienced scientists who meet at least one of the following criteria;”

- Endorsed the mandates contained in Appendix 2 of the CAPaBLE proposal;
- Suggested that the secretariat present a review of the progress of the Programme at the 9th IGM and mandates be modified if required;
- Suggested that a full analysis be carried out at the 9th IGM and discussions be held on how to effectively implement Phase II of the Programme; and
- Welcomed the additional financial contributions from Australia and New Zealand.

The New Zealand Focal Point, Dr. Matthews, emphasized that the government of New Zealand was highly supportive of the programme and, as a result, wished to contribute financially to CAPaBLE. He further emphasized that New Zealand involvement in CAPaBLE is an opportunity to build indigenous capacity to deal with the global change tasks ahead of us.

The IGM approved that the CAPaBLE Programme becomes an integral activity of APN.

Action: Secretariat and Steering Committee

13. Ongoing/proposed APN activities

The Secretariat presented the following activities:

- *APN-IAI Joint Activity*

The IGM agreed that APN should further explore a future joint activity. A Climate Change-related activity will be discussed and the following themes will be considered:

- Impacts of ENSO/ climate extremes;
- Climate change and agriculture; and
- Climate change and terrestrial ecosystems.

- *Asia Pacific Environmental Innovation Strategy Project (APEIS)*

APEIS capacity building activities will be continued. However, the selection process for APN participants will not only involve national Focal points, but SPG members will also take an active role in nominating APN participants. It was re-iterated further that communications among APN members is very important.

- *Global Change Coastal Zone Synthesis*

A proposal for a Global Change Coastal Zone Synthesis was presented. The IGM approved this proposal and emphasised ongoing and progressive work for effective contribution to international assessments.

- *3rd World Water Forum and Pacific Island Summit*

The secretariat provided information on its involvement at the 3rd World Water Forum and the Pacific Island Summit. Relevant outcomes to these meeting will be disseminated to APN members.

The IGM noted that it is strongly in favour of the APN being represented at the Pacific Island Summit and asked that the Secretariat liaise with the Ministry of Foreign Affairs and the Ministry of the Environment, Japan.

Action: Secretariat

These activities were accepted and approved by the IGM.

14. APN Annual Report

The Secretariat introduced plans to publish an annual report, which would highlight APN efforts at promoting global change research. The role of an Ad Hoc Annual Report Committee was discussed and, the draft contents presented. The template contents page incorporated SPG recommendations that the annual report be attractive, visionary, and include accomplishments.

The IGM agreed that:

- The report be kept to a maximum of 32 pages in length to minimise costs; and
- Ensure that references to planned activities be fully up-to-date.

Action: Secretariat and Ad Hoc Annual Report Committee

15. Preparation for 10th Anniversary

The Secretariat presented plans for preparation of the 10th anniversary of the APN in 2005 and highlighted the need to evaluate APN scientific activities since its establishment. In addition, a new 5-year strategic plan should also be issued.

The IGM approved plans outlined by the Secretariat for review of the APN's scientific progress and summarizing the APN's achievements.

The IGM decided, however, that:

- The Steering Committee work on defining "cross-cutting" in the context of APN for the next Strategic Plan.

Action: Secretariat and Steering Committee

16. APN Contribution to IPCC 4th Assessment Report²

The IGM agreed that APN contribution to IPCC Assessment Reports is important, however, this process must be handled carefully.

The IGM also approved the SPG recommendation that as the IPCC is a review process project leaders should be encouraged to produce peer review papers and, should a peer review publication result then reference to APN contribution should be made.

Action: Secretariat

² This item summary has been modified after Steering Committee consideration

17. Membership Development

The Secretariat presented membership development and the IGM encouraged the attainment of a national Focal Point and SPG member for Bangladesh, and national Focal Point for the Russian Federation. The Secretariat will seek assistance of APN national Focal Point for Cambodia concerning the nomination of a SPG member by the Government of Cambodia.

Action: Secretariat

The Secretariat also explained that possible avenues for collective representation of Pacific Island Countries are on-going.

The IGM approved that the Secretariat, in consultation with the Steering Committee, approach Brunei and Singapore regarding the possibility of APN membership.

Action: Secretariat and Steering Committee

18. Next Meeting

The Secretariat explained that discussions are well advanced with a member country concerning hosting the 9th SPG/IGM and, upon official approval the Secretariat will inform APN members and observers of the venue and tentative date.

Action: Secretariat

19. Any Other Business

The Secretariat is to explore opportunities to streamline annual APN meetings, and to stabilise the Secretariat workload throughout the year.

Action: Secretariat

20. Presentations

- ***“Global Change and Ecosystems in the 6th Framework Programme on RTD of the EU – Perspectives and Chances for Co-operation”***
Christian Patermann, ENRICH
- ***“The Millennium Ecosystem Assessment: Current Status and Progress Update”***
Marcus Lee, Millennium Ecosystem Assessment
- ***“Antarctica - in from the Cold”***
Michael Stoddart, Australian Antarctic Division

21. Closing

The Chair invited the Secretariat Director to make his closing remarks. The Director thanked all participants, Chair Mr. Duc Hai Tran and Vice-Chairs Dr. Stoddart and Mr. Feng, and

informed the IGM that a Steering Committee meeting will be held following the IGM to discuss the most effective implementation of the decisions taken.

The IGM expressed its sincere appreciation to the Government of Viet Nam for the excellent arrangements done for this 8th Inter-Governmental Meeting, and also thanked the Secretariat for their efforts.



**8TH INTER-GOVERNMENTAL MEETING (IGM)
13-14 March 2003, Hanoi, Viet Nam**

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Prop No	Title	Theme	Regional Focus	Countries Involved	Funding Requested	Funding Recommended	Multi-Year	Co-Funding		
					Year 1	Year 1	Year 2 Projection	Source	Amt.	Status
8	The 1st International Young Scientists Global Change Conference, November 16-19, 2003, Trieste, Italy	All Themes	A-P	All Countries	80,256	70,000	0	Various, IAI, NSF, etc.	120,000+	ok
36	Regional, multi-scaled, multi-temporal land-use and land cover data to support global change research, and policy making: a SEARRIN LUCC Project	Changes in terrestrial Ecosystems & Biodiversity	SEA	Cambodia, China, Indonesia, Laos, Malaysia, Philippines, Thailand, USA, Vietnam	80,407	75,000	56,940	NASA	112,164	ok
23	Modelling regional climate change for Southeast Asian countries	Climate Change & Variability	SEA	Australia, Bangladesh, Cambodia, China, Indonesia, Laos, Malaysia, Philippines, Thailand, Vietnam	69,655	30,000	0	None listed		
17	Building local capacity for global change research: the Millennium Ecosystem Assessment sub-global activities in the Asia-pacific region	Changes in Coastal Zones & Inland waters, Changes in Terrestrial Ecosystems & Biodiversity, Cross-cutting Issue, Human Dimensions of Global Change	A-P	Australia, China, India, Indonesia, Malaysia, PICs, Vietnam	56,800	25,600	28,200	World Bank, GEF & Gov. Norway	1,120,952	ok
4	3rd Workshop on Climate Variability and Trends in Oceania	Climate Change & Variability	Oceania	Australia, Fiji, New Zealand, PICs, USA	31,685	31,685	0	NIWA, GCOS	34,800	ok

Prop No	Title	Theme	Regional Focus	Countries Involved	Funding Requested	Funding Recommended	Multi-Year	Co-Funding		
					Year 1	Year 1	Year 2 Projection	Source	Amt.	Status
18	The Mega-Deltas of Asia: A conceptual model and its application to future delta vulnerability	Changes in Coastal Zones & Inland Waters, Climate Change & Variability, Human Dimensions of Global Change	A-P	Australia, Bangladesh, Cambodia, China, Fiji, Japan, Pakistan, Thailand, USA, Vietnam	44,000	35,000	42,000	UNESCO	US\$7,000	ok
7	Capacity Development Training for monitoring of POPs in the East Asian Hydrosphere	Changes in Coastal Zones & Inland Waters, Human Dimensions in Global Change	TEA SEA	China, Indonesia, Japan, Malaysia, Philippines, ROK, Thailand, Vietnam	46,250	41,000	0	UNU Core Funding	13,000	ok
27	The 2003 Open Meeting of the Human Dimensions of Global Environmental Change Research Community	Human Dimensions of Global Change	A-P	Philippines, ALL countries	70,000	33,000	0	NSF, IAI, START, etc	210,000+	ok
41	Travel support for Asia marine scientists to attend the final JGOFS Open science conference	Changes, in Atmospheric Composition, Changes in Coastal Zones & Inland Waters, Climate Change & Variability, Cross-Cutting Issue, Human Dimensions of Global Change	A-P	Australia, China, India, Japan, New Zealand Pakistan, ROK, Russia, Sri-Lanka, USA	20,000	12,000	0	Various inc. IAI, START etc.	370,000	ok
56	Climate variability and human activities in relation to Northeast Asian land-ocean interactions and their implications for coastal zone management	Changes in Coastal Zones & Inland Waters, Climate Change & Variability, Changes in Terrestrial Ecosystems & Biodiversity, Cross-Cutting Issue, Human Dimensions of Global Change	TEA	China, Republic of Korea, Russia	80,000	15,000		None Listed		

Prop No	Title	Theme	Regional Focus	Countries Involved	Funding Requested	Funding Recommended	Multi-Year	Co-Funding		
					Year 1	Year 1	Year 2 Projection	Source	Amt.	Status
42	Integrating carbon management into development strategies of cities - establishing a network of case studies of urbanisation in the Asia-Pacific	Changes in Atmospheric Composition, Changes in Terrestrial Ecosystems and Biodiversity, Climate Change & Variability, Cross-Cutting Issue, Human Dimensions of Global Change	SA, SEA	Australia, China, India, Indonesia, Japan, Malaysia, Philippines, ROK, Thailand, USA, Vietnam	62,000	35,000	27,000	Being sought from SA		
				Totals	641,053	403,285	154,140			

*proposal 56 has been recommended to receive seed money for further proposal development

Continuing Multi-Year Projects

Project Number	Title	Countries involved	Regional Focus	2003/2004 Requested	2003/2004 Recommended	2004/2005 Projected	2005/2006 Projected
2002-01	Indices and Indicators for Monitoring Trends in Climate Extremes	Australia , China, Indonesia, Japan, Malaysia, New Zealand, PIC, Philippines, Thailand, Vietnam (Cambodia, Laos)	SEA, Oceania	48,000	30,000	10,000	
2002-03	Global Change Impact Assessment for Himalayan Mountain Region for Environmental Management and Sustainable Development	India, Nepal , Pakistan	SA	89,700	60,000		
2002-09	Applying Climate Information to Enhance the Resilience of Farming System Exposed to Climatic Risk in South and Southeast Asia	Australia , India, Indonesia, Pakistan, USA	SA & SEA	100,000	85,000	100,000	
2002-12	Water Resources in South Asia: An Assessment of Climate Change-associated Vulnerabilities and Coping Mechanisms	Bangladesh, India, Nepal, Pakistan , USA	SA	84,500	60,000	84,500	
2002-15	Inventory of Glaciers and Glacial Lakes and the Identification of Potential Glacial Lake Outburst Floods (GLOFs) Affected by Global Warming in the Mountains of India, Pakistan and China/Tibet Autonomous Region	India, Nepal , Pakistan, China	SA	98,900	75,000	93,150	
2002-17	PABITRA Network for Collaborative Research on the Ecology of Global Change in Island Landscapes of the Tropical Pacific	Fiji, Indonesia, Japan, Malaysia, New Zealand, PICs, Philippines, USA	Oceania	31,815	31,815		
Totals				452,915	341,815	287,650	ZERO

SECTION II

8th APN Scientific Planning Group Meeting

**Hanoi, Viet Nam
10-11 March 2003**

Summary Report from Co-Chairpersons

8th APN Scientific Planning Group Meeting
10-11 March 2003
Hanoi, Viet Nam

Summary Report from Co-Chairpersons
Dr. Andrew Matthews and Dr. Subramaniam Moten

The SPG meeting was attended by experts and members from Australia, China, India, Indonesia, Japan, Lao P.D.R., Malaysia, Mongolia, Nepal, New Zealand, Pakistan, Philippines, Republic of Korea, Sri Lanka, Thailand, USA, Viet Nam, APN Liaison Officers, SARCS, SASCOM, START Oceania, TEACOM, the International START Secretariat and observers from ENRICH, IAI, IGBP, IHDP, the Millennium Ecosystem Assessment, Japan and, Viet Nam. The list of participants is given at **Attachment 1**.

1. Opening

The APN Secretariat Director, Mr. Sombo T. Yamamura, opened the meeting by inviting Honoured Guest, Mr. Duc Hai Tran, Director General, Ministry of Natural Resources and Environment, Viet Nam to offer some welcoming remarks. Mr. Tran welcomed participants and thanked the APN for organising this meeting and highlighted the great efforts and contributions that APN has made in conducting global change activities. Mr. Tran also emphasised the necessity of the integration of research conducted by APN with that conducted by other global change programmes. Mr. Yamamura expressed sincere gratitude to Viet Nam for hosting the meeting and for their organisation and hospitality. Participants were then invited by SPG Co-Chair, Dr. Subramaniam Moten, to introduce themselves.

2. Adoption of Agenda

The agenda was adopted as proposed.

3. Review of Activities in 2002/2003

The APN Secretariat reviewed the year's achievements. Since the 7th IGM efforts have been made to mobilise financial resources. The first APN synthesis (land use and cover change) is nearing completion. A draft synthesis report has been prepared and is being reviewed by the assigned workshop editorial committee. This report will be integrated into the 2002/2003 annual report. An APN/START awareness-raising symposium was convened in Northeast Asia and one symposium and two workshops were held in Kobe. However, the APN/START workshop planned to be held in Uzbekistan, Central Asia, has been postponed. A new date will be circulated to APN members in due course. The Secretariat also pointed out that several missions were made highlighting that APN is a regional network with a global presence.

It was pointed out that the Steering Committee had also recommended that the APN Secretariat provide more information on which global change related meetings are being held and involve the Steering Committee in discussions on which meetings the Secretariat should attend in the future.

Action: Secretariat

A Summary of the 2002/2003 activity, project and regional reports was presented. The Secretariat highlighted the new APN publication: *Projects, Activities and Regional Reports*. In addition, project reporting procedures and the provision of guidelines to project leaders who request extensions to their reports and/or projects were also discussed. It was pointed out by the SPG that the APN publication was a good step forward in that it provides a useful overview of APN activities. It was highlighted as well that all other activities carried out by APN would be covered in the APN Annual Report being presented later under Item 12 of the Agenda.

SPG Co-Chair, Dr. Andrew Matthews, emphasised that APN should be moving in a direction that promotes professionalism in order to secure and maintain the interest and involvement of prospective funding bodies and other stakeholders, and to show that APN is, in fact, a key player in the global change community. The professional quality and content of the reports submitted by project leaders was also highlighted as being of key importance, including peer-reviewed journal articles which were an outcome of their APN-funded project.

Under the “Basic Guidelines for Project Extensions,” the SPG suggested that the Secretariat:

- State that only “no-cost extensions” will be considered;
- Change the wording of “proposal” to “detailed request;” and
- State that the “detailed request” must be submitted at least 3 months prior to the originally scheduled official end of the project.

In the initial award letters to proponents, the APN Secretariat is to emphasise that:

- The final 20% of each grant will be remitted only on receipt of the Final Activity Report and Final Financial Report as stated in the APN contract.

Action: Secretariat

4. APN Liaison Officers’ Annual Reports 2002/2003

The Secretariat introduced the APN Liaison Officers (APN supporting officers in the START Regional Centers) and their mandate under the APN Research Framework. The Liaison Officers then provided a regional overview of their past year’s activities.

It was mentioned that, occasionally, the Secretariat does not provide updated project information to the Liaison Officers and communications in this area should be improved. Furthermore, it was highlighted that communications between the SPG members and Liaison Officers must also be improved.

The SPG recommended that:

- The Secretariat provide Liaison Officers with up-to-date information regarding project-related activities in their respective regions;
- The SPG members provide the Secretariat with updated information for the newsletter mailing list;
- The Secretariat updates the mailing list on a regular basis;
- National libraries and institutes could be added to the mailing list; and
- SPG Members and Liaison Officers open up a two-way communication process.

Action: Liaison Officers, SPG members and the Secretariat

5. Proposals Process

The Secretariat reported on the pre-proposal and full proposal stages as they were utilised in the assessment of 2002 proposals and the recommendations for confirmation of multi-year projects. A total of 52 pre-proposals were received in the June 2002 pre-proposals round. It was agreed that the pre-proposals stage is a success this year and that APN should submit a questionnaire to all pre-proponents for feedback from previous years. The results of the questionnaire are then to be disseminated to the APN members.

Action: Secretariat

The Secretariat received 56 full proposals in the September 2002 proposals round (one additional proposal was later submitted as an output of the APN/START North East Asia awareness raising symposium). In the Rapid Assessment Stage only one proposal was considered “unsuitable” and rejected. Therefore, 56 proposals proceeded to the first stage of the review process by the SPG. Of these, 27 proposals, i.e., 48% advanced to the final stage of the proposal review process. It was agreed that the success rate of the proposals stage is to be disseminated on the APN website.

In the guidelines for proponents in the 2003 Call for Proposals, the SPG recommended that the Secretariat provide more refined criteria in both the Call for Proposals and the Reviewer Guidelines for SPG members.

Action: Secretariat

The Proposals Review System and options to reduce the burden on both the Small Group and the SPG reviewers was discussed. The SPG recommended that:

- The Rapid Assessment Stage continue, but more refined criteria be established in the Rapid Assessment Stage guidelines for Small Group members in order to enable the Small Group to substantially reduce the number of the proposals;
- More refined criteria be established in the Reviewer Guidelines for SPG members and that the scoring system currently in place remain;
- The Secretariat work with the global change programmes in creating a list of external reviewers who can be asked to review APN proposals (in their respective areas of expertise) that are short-listed for Stage 2; and
- Selected external reviewers are asked to comment on the proposals but not provide a score (the aim here being to aid the Small Group in recommending proposals for funding).

Action: Secretariat and Steering Committee

Per diem rates were discussed and it was suggested that any institutions hosting meetings should be encouraged to provide in-kind contributions by, for example, subsidising accommodation costs. It was further suggested that SPG members remind proponents in their countries to be more cost effective. The Secretariat will continue to be pro-active in reviewing proposal budgets in a realistic and cost-effective manner.

Action: Secretariat and SPG members

6. APN Networking and Capacity Building Programme

The Secretariat provided an overview of the 2002/2003 networking and capacity building programme. The SPG meeting agreed that holding “awareness raising symposia” should not be seen as the highest priority and that future APN networking and capacity building activities might best incorporate the following:

- Networking expansion through the Pacific Island Summit (being held in May 2003) and through the APN Liaison Officers;
- Enrichment of the APN website as a tool for networking support and expansion;
- Further encouragement of networking of adjacent countries; and
- Linking with the “Scientific Capacity Building/Enhancement for Sustainable Development in Developing Countries” (CAPaBLE) programme for a more systematic development of the APN capacity building programme and its activities.

Mr. Lee indicated that the Millennium Ecosystem Assessment would be prepared to collaborate with APN in the upcoming APN/START Central Asian workshop. Opportunities for EU/APN partnerships in Central Asian activities that APN may undertake should be considered. Furthermore, the SPG agreed that the APN continue its efforts on inter-regional networking with the EU. It was also mentioned that SPG members are encouraged to continue to promote APN.

For the future, it was agreed that Capacity Building activities should be conducted in a more systematic manner. Networking should also be continued as an important activity of APN.

7. 2003/2004 APN Funded Projects

It was announced that the total budget available for APN funded projects would be approximately US\$ 785,000 in the next fiscal year. This budget also includes a contingency fund.

Dr. Matthews, as SPG Co-Chair, presented to the SPG for their approval the Small Group’s recommendations for continuing Multi-Year Projects. He emphasised that the recommendations were based on the progress reports and other supporting evidence submitted by the project leaders.

Dr. Matthews then explained the rationale behind the Small Group's recommendations for funding proposals short-listed at Stage 2 of the Proposals Process. The SPG's ratings for scientific excellence and average score were used as the main basis for the funding recommendations. Other major factors included budgetary aspects and the number of high scores.

The SPG agreed on the funding recommendations made by the Small Group as follows:

- 6 continuing multi-year projects;
- 10 new projects; and
- 1 project to receive seed funding.

The SPG agreed that these funding recommendations will be presented to the IGM for their endorsement.

8. Ongoing/Proposed APN Activities

The Secretariat presented the following activities:

- *APN-IAI Joint Activity*
It was agreed to further explore with the IAI a future joint activity, and that a climate change-related activity be considered in this respect.
- *Asia Pacific Environmental Innovation Strategy Project (APEIS)*
APEIS capacity building activities will be continued. However, the selection process for APN participants will not only involve national Focal points, but SPG members and Liaison Officers will also take an active role in nominating APN participants.
- *Global Change Coastal Zone Synthesis*
This proposal was recommended for IGM endorsement. However, SPG members emphasised the need for strong scientific leadership and a manageable timeline. It was agreed to include not only the APN community but other regional stakeholders as well. *Most importantly, the SPG agreed that any such assessment should take into account the results of research undertaken in this area by other programmes (e.g. IGBP-LOICZ) in order to establish the widest possible basis for the assessment.* The Final product could include a book as part of the IGBP global change book series.

- *3rd World Water Forum and Pacific Island Summit*

The Secretariat also provided information on its involvement at the 3rd World Water Forum and the Pacific Island Summit. Relevant results of these meeting will be disseminated to APN members.

Action: Secretariat

9. CAPaBLE Programme

The SPG considered the “Scientific Capacity Building/Enhancement for Sustainable Development in Developing Countries” (CAPaBLE) Programme an excellent opportunity that is compatible with APN objectives and could facilitate APN’s approach to capacity enhancement and capacity building in a more systematic manner. The SPG congratulated the Ministry of the Environment of Japan on this exciting proposal.

Some concerns were raised regarding the implementation, in particular, the timeline for implementation and the guidelines for the programme. The SPG noted that an element of flexibility and dynamism in the system will be required because of the newness of the programme and, although the current APN mechanism will be used to implement this programme, revisions must be made to these guidelines to accommodate both the objectives of APN and the objectives of CAPaBLE. It was also suggested that consideration be given to funding relevant infrastructure that may be required to undertake funded activities. Furthermore, the SPG recommended that the Scientific Steering Committee develop a streamlined “Call for Proposals” for the Comprehensive Research Projects. When doing so, the Steering Committee should also streamline the review process, the selection of reviewers and the guidelines for those reviewers involved in the review process, as appropriate.

The SPG highlighted the importance of support from developed country experts in aiding the activities in the developing country-led projects, as appropriate. The SPG recommended that the CAPaBLE Programme become an integral part of APN.

Action: Steering Committee and Secretariat

10. Available funds for APN’s 2003/2004 activities

The secretariat presented the budget for APN scientific activities and highlighted that this budget does not include administration costs. The proposed budget is as follows:

- For the proposals process and contingency fund, US\$ 752,000 will be provided (with an additional US\$ 33,000 remaining from the current fiscal year funds);
- For networking, US\$ 24,000 will be provided;
- For APEIS, US\$ 40,000 will be provided; and
- For CAPaBLE, US\$ 537,200 will be provided.

The total amount for scientific activities has increased by approximately US\$ 300,000 from the previous year.

11. APN Annual Report

The Secretariat outlined the need for an APN Annual Report as endorsed at the 7th IGM. The SPG recommended revisions of the template which will include:

- A summary for policy-makers;
- List of publications/products in the Annex section;
- Should be visionary and include accomplishments;
- Adjust the contents so that financial resources are included at the back of the Report; and
- ¹Report should be attractive to its target audience.

Action: Secretariat and Ad Hoc Annual Report Committee

12. Preparation for APN's 10th Anniversary

The SPG was supportive of plans outlined by the Secretariat for review of the APN's scientific progress and summarising the APN's achievements.

The SPG recommended, however, that:

- The Steering Committee work on the evaluation process in direct consultation with the Secretariat, Global Change programmes, SPG members, and their respective counterparts; and

Action: Secretariat and Steering Committee

- SPG approach APN national Focal Points and their counterparts, seeking funding opportunities for special fellowships relating to 10th APN Anniversary achievements.

Action: SPG Members

13. APN Contribution to IPCC 4th Assessment Report

The SPG recommended that:

- Project leaders be encouraged to produce peer review papers (exposure of APN results could lead to more funds) and, should a peer review publication result then reference to APN contribution should be made;
- There is a need to implement a tracking mechanism of APN publications, and to periodically update these records as time lags may exist between project completion and publication of peer review journals; and

Action: Secretariat

- Global Change book series and other media should be considered as a means of disseminating APN results.

14. Election of New Co-Chair

Dr. Matthews explained that a new Co-Chair from a developing country has to be elected since, according to APN procedures; Dr. Subramaniam Moten's two-year term

¹ Ad hoc annual report committee will work electronically to ensure that the language matches the targeted readers

is now at an end. SPG members acknowledged Dr. Moten's input to APN, as SPG Co-Chair, over the past two-years. Dr. Matthews proposed Dr. Amir Muhammed of Pakistan as the new SPG Co-Chair. The nomination was supported by SPG members and accepted by Dr. Muhammed.

15. Any Other Business

- Key Scientific Priorities should be an agenda item at the next SPG and IGM meetings;

Action: Secretariat

- The Steering Committee should work with the Secretariat on establishing timelines and mechanisms for APN activities;

Action: Secretariat and Steering Committee

- The SPG will consider how the Asia-Pacific science agenda can best respond to the Global Change programmes' new structure;

Action: SPG

- The SPG thanked Dr. Il Soo Park, who will no longer continue to act as SPG member for the Republic of Korea, for his involvement in APN activities.

16. Science Presentations

Science presentations were made on:

- ***“Impact of Climate Change on the Coastal Zone”***
Nobuo Mimura, Ibaraki University, Japan
- ***“Overview of Global Change Studies in Viet Nam”***
Huu Ninh Nguyen, Center for Environment Research, Education and Development, Viet Nam
- ***“Emerging Global Change Partnerships – The Role of Food Systems”***
Barbara Göbel, International Human Dimensions Programme

17. Closing

The Secretariat Director expressed his sincere appreciation to SPG members, participants from the global change programmes and networks, and the SPG Co-Chairs' for their active role in making the 8th SPG meeting a success. The Director also thanked the Ministry of Natural Resources and Environment, Viet Nam, for hosting the meeting, and expressed appreciation to Dr. Subramaniam Moten for his outstanding service over the past two-years as SPG Co-Chair.



8TH SCIENTIFIC PLANNING GROUP (SPG) MEETING
10-11 March 2003, Hanoi, Viet Nam

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AGENDA
8th SCIENTIFIC PLANNING GROUP MEETING
10-11 March 2003, Hanoi, Viet Nam

Monday, 10 March09:00 **1. OPENING**

Dr. Cong Thanh Nguyen, Vice Minister, Ministry of Natural Resources and Environment, Viet Nam, and the Secretariat Director, Mr. Sombo Yamamura, will make opening statements.

09:30 **2. ADOPTION OF AGENDA**

Agenda will be adopted.

09:40 **3. REVIEW OF ACTIVITIES IN 2002/2003**

Secretariat will provide an overview of the past year's activities.

- Secretariat Review
- Projects - Reports, Procedures & Extensions

10:20 Group photo and break.

10:40 **4. APN LIAISON OFFICERS' ANNUAL REPORTS 2002/2003**

Liaison Officers will provide a regional overview of the past year's activities.

11:40 **5. PROPOSALS PROCESS**

Secretariat will report on pre- and full proposals process.

13:00 Lunch

14:00 **6. APN NETWORKING & CAPACITY BUILDING PROGRAMME**

Secretariat will provide an overview of the networking and capacity building programme.

14:30 **7. 2003/04 APN FUNDED PROJECTS****(1) Initial Discussion**

Dr. Andrew Matthews will introduce the proposed recommendations of the Small Group on which projects to fund in 2003/04.

15:10 Break

15:30 **8. ONGOING/PROPOSED APN ACTIVITIES**

Secretariat will present:

- APN-IAI Joint Activity
- Asia Pacific Environmental Innovation Strategy Project
- Global Change Coastal Zone Synthesis
- 3rd World Water Forum
- Pacific Island Summit

16:30 Adjourn

*Applicable
Papers*

SPG/8/01

SPG/8/02

SPG/8/03

SPG/8/04

SPG/8/05

SPG/8/06

SPG/8/07

SPG/8/08-01

SPG/8/08-02

SPG/8/08-03

SPG/8/08-04

SPG/8/08-05

Tuesday, 11 March

09:00 **9. 2003/04 APN FUNDED PROJECTS****(2) Continued Discussion**

Revised Small Group recommendations based on the previous day's discussion (if required). SPG members will reach consensus and finalise recommendations on activities to support for the Inter-Governmental Meeting (IGM).

*Applicable Papers*10:00 **10. CAPaBLE PROGRAMME**

Ministry of the Environment, Japan will propose an APN Type II Capacity Building Partnership Programme.

*SPG/08/09*10:50 **11. AVAILABLE FUNDS FOR 2003/2004 ACTIVITIES**

Secretariat provides a summary of the budget available for activities from Items 7-10.

SPG/08/10

11:00 Break

11:10 **12. APN ANNUAL REPORT**

Secretariat will introduce:

- Annual Report
- Contents of the Annual Report

*SPG/8/11-01**SPG/8/11-02*11:30 **13. PREPARATION for 10th ANNIVERSARY**

Secretariat will outline plans for:

- Scientific Review/Achievements/Evaluation of APN
- Strategic Plan (2005-2009)

*SPG/8/12*12:00 **14. APN CONTRIBUTION to IPCC 4th Assessment Report**

Secretariat will present possible APN contribution to IPCC AR4.

*SPG/8/13*12:20 **15. ELECTION OF NEW CO-CHAIR**12:30 **16. ANY OTHER BUSINESS**

12:50 Lunch

14:00 **17. SCIENCE PRESENTATIONS**

- *“Impact of Climate Change on the Coastal Zone”*
Nobuo Mimura, Ibaraki University, Japan
- *“Overview of Global Change Studies in Viet Nam”*
Huu Ninh Ngyen, Center for Environment Research, Education and Development, Viet Nam
- *“Emerging Global Change Partnerships – The Role of Food Systems”*
Barbara Göbel, International Human Dimensions Programme

15:00 Break

15:10 **18. CO-CHAIRPERSONS' SUMMARY**

Delegates will discuss a draft co-chairpersons' summary.

SPG/8/14

16:40 Closing

APPENDIX I

Papers of the 8th APN Inter-Governmental Meeting and 8th Scientific Planning Group Meeting

8th APN Inter-Governmental Meeting Welcome Address

13 March 2003, Hanoi, Viet Nam

Dr. Nguyễn Công Thành

Vice Minister, Ministry of Natural Resources and Environment, Viet Nam

Distinguished Guests, Ladies and Gentlemen, it is my pleasure to be invited to address this 8th Asia-Pacific Network for Global Change Research (APN) Inter-Governmental Meeting.

On behalf of the Ministry of Natural Resources and Environment of Viet Nam, I would like to express our sincere thanks to the APN for collaboration and assistance in organizing this Meeting. I would also like to welcome distinguished participants from the APN member countries.

I am confident that this Meeting will be a useful forum for sharing ideas, knowledge, experiences and achievements for all of us. It will also be the place for discussing and forming Plans of Actions for the future.

Ladies and Gentlemen, as you know, Viet Nam is a Party to the United Nations Framework Convention on Climate Change, as well as the Kyoto Protocol. Viet Nam also actively participated in the World Summit on Sustainable Development (WSSD) held in Johannesburg, in the Republic of South Africa in 2002. Many programs and projects have been formulated and implemented in Viet Nam, which focus on reforestation, forest protection, energy conservation, green-house gas reduction, and so on. Many campaigns and educational programs have also been launched to raise public awareness and the behaviour of people. To do that, besides the efforts from our government, Viet Nam has received great cooperation and support from international agencies like UNDP, UNEP, GEF as well as from many other countries.

Viet Nam welcomes the activities carried out by the APN, which has supported research on global change and has also established a research network in the region. Through specific cooperation activities with agencies, including the APN, the network of researchers, monitoring and assessing impacts of the changes on climate and natural resources in Vietnam has been setup. Related regulations and laws have been gradually formulated. Research

results have been considered thoroughly and many of them have been applied.

Ladies and Gentlemen, we are fully aware that environmental protection and sustainable development efforts should not be limited within any national boundary and can only be successful if undertaken based on comprehensive international cooperation and assistance. We highly appreciate cooperation with the APN, with other countries and various international organizations. We look forward to further developing such joint effort and in strengthening national research capacities in the areas of global change, water management, pollution prevention and control, and so on.

Ladies and Gentlemen, the 8th APN Inter-Governmental Meeting is a great opportunity to enhance and extend cooperation among member countries and international agencies. With this in mind, on behalf of the Ministry of Natural Resources and Environment of Viet Nam, I wish this meeting the very best of success.

Thank you very much for your attention!

8th APN Scientific Planning Group Meeting Opening Address

10 March 2003, Hanoi, Viet Nam

Mr. Tran Duc Hai

Director General, International Cooperation Department

Ministry of Natural Resources and Environment of Viet Nam

Distinguished Guests, Ladies and Gentlemen, it is a great honour for me to be here in the opening ceremony of the 8th APN Scientific Planning Group meeting. On behalf of the Ministry of Natural Resources and Environment of Viet Nam, I would like to thank the Global Change Research Agency for assistance and collaboration in organizing this Meeting and warmly welcome international guests and domestic participants.

At this forum, we have occasion to review achievements of the APN over the past year, and also to discuss and unify plans of action for the future.

Ladies and Gentlemen, Viet Nam is boosting industrialization and modernization with the scheme of rapid and sustainable development, economic growth in parallel with the implementation of social equality, advancement and environmental protection. Viet Nam also has great efforts in fulfilling undertakings of environmental protection at important meetings such as the World Summit on Sustainable Development (WSSD) held in Johannesburg, Republic of South Africa in 2002, the Kyoto Protocol, and the UN Framework Convention on climate change... It can be said that the task of environmental protection has become urgent in the present phase, facing great climate change and natural resources caused by human beings. Its negative impacts should be researched and scientifically forecast so as to minimize losses and damages. This is a very important and great issue which requires the cooperation of many countries in defining priority matters; initial and long term significant issues should be made clear and it is also necessary to have qualified mechanisms and systems and human resources to manage and operate effectively. APN was established at an opportune time, and has made great contributions to global change research and formulating the research network in the region. Through specific cooperation activities with APN, a research network that assesses the impacts of climate change and natural resources in Viet Nam has been established. Regulations and Laws with regard to aforementioned activities have also been initially formulated as well. Results of research have been directed, selected, intensively and extensively applied.

Viet Nam highly appreciates activities already performed by APN, and thanks the assistance of the Ministry of Environment of Japan in the direction of research and financial support for these activities.

Ladies and Gentlemen, in future we should pay further attention to improving the role of national governments in monitoring activities of global change research so that these activities will have further effectiveness and feasibility improved in the process of applying study results in practice. We should survey, assess, and clearly define immediate problems, updates in each region to formulate specific programs of global change research in each nation, and each phase to collaborate member nations in launching reasonable plans of action. It is highly appreciated for nations to prepare expenditure in the budget regarded as expenditure corresponding to the project program of APN. Furthermore, it is also necessary to integrate with research programs of the State subject to each priority extent and to avoid overlapping against other programs. The program of global change research can be put into ODA priority projects, at the same time regarding climate change and natural resources as an important factor in policies and activities in terms of social, economic and environmental aspects, enhancing observation and data in relation to the program for mutual reference, focusing on educating, training and providing information in this field...

Ladies and Gentlemen, on behalf of Ministry of Natural Resources and Environment of Viet Nam, I declare the 8th SPG meeting open and wish the meeting success, and I also wish the international guests and domestic participants good health, and I hope that you will have a good impression of Viet Nam during your stay.

Thank you very much!

AGENDA
8th INTER-GOVERNMENTAL MEETING
13-14 March 2003, Hanoi, Viet Nam

Thursday, 13 March

Session 1 – Opening & Administration Issues

09:00 **1. OPENING**

Dr. Cong Thanh Nguyen, Vice Minister, Ministry of Natural Resources and Environment, Viet Nam, and the Secretariat Director, Mr. Sombo Yamamura, will make opening statements.

09:30 Group photo and break.

10:00 **2. ELECTION OF OFFICERS**

Delegates will elect one vice-chair.

10:05 **3. ADOPTION OF AGENDA**

Agenda will be adopted. Items for Other Business may be raised.

10:15 **4. REVIEW OF ACTIVITIES 2002/2003**

Secretariat will provide a report on last year's activities:

- Secretariat Review
- Projects - Reports, Procedures and Extensions

10:55 **5. APN LIAISON OFFICERS' ANNUAL REPORTS 2002/2003**

Liaison Officers will provide a regional overview of the past year's activities.

11:55 **6. FINANCIAL REPORTS AND 2003/2004 BUDGET**

Secretariat will present the final Financial Report for the year ending March 2002 and the draft Financial Report for the year ending March 2003. The budget for the next fiscal year will be presented. Delegates will be asked to consider and approve each of these:

- Final 2001/2002 Financial Report
- Draft 2002/2003 Financial Report
- Proposed 2003/2004 Budget

12:40 Lunch

14:00 **7. FINANCIAL RESOURCES**

- 2002 Efforts (Australia and New Zealand)
- Ad Hoc Resources Development Committee

*Applicable
Papers*

IGM/8/01

IGM/8/02

IGM/8/03

IGM/8/04

IGM/8/05-01

IGM/8/05-02

IGM/8/05-03

IGM/8/06

IGM/8/07

*Applicable
Papers***Session 2 – Scientific Issues****14:30 8. PROPOSALS PROCESS**

Secretariat will report on pre- and full proposals process.

IGM/8/08

15:10 Break

15:30 9. SCIENTIFIC PLANNING GROUP REPORT

Dr. Andrew Matthews, Co-chair of the SPG, will provide an overview of the results of the SPG meeting.

15:50 10. 2003/04 FUNDED PROJECTS

Dr. Andrew Matthews will seek IGM approval for the SPG recommended funded projects (from proposals and MY Projects) for 2003/04.

*IGM/8/09**IGM/8/10***16:10 11. APN NETWORKING & CAPACITY BUILDING PROGRAMME**

Secretariat will provide an overview of the networking and capacity building programme.

*IGM/8/11***16:30 12. CAPaBLE PROGRAMME**

Ministry of the Environment, Japan will propose an APN Type II Capacity Building Partnership programme.

IGM/8/12

17:30 Adjourn

Friday, 14 March**09:00 13. ONGOING/PROPOSED APN ACTIVITIES**

Secretariat will propose:

- APN-IAI Joint Activity
- Asia Pacific Environmental Innovation Strategy Project
- Global Change Coastal Zone Synthesis
- 3rd World Water Forum
- Pacific Island Summit

*IGM/8/13**IGM/8/13-01**IGM/8/13-02**IGM/8/13-03**IGM/8/13-04**IGM/8/13-05***09:30 14. APN ANNUAL REPORT**

Secretariat will introduce:

- Annual Report
- Contents of the Annual Report

*IGM/8/14**IGM/8/14-01**IGM/8/14-02*

*Applicable
Papers*

09:50 **15. PREPARATION for 10th ANNIVERSARY**

Secretariat will outline plans for:

- Scientific Review/Achievements of APN
- Strategic Plan (2005-2009)

IGM/8/15

10:20 **16. APN CONTRIBUTION to IPCC 4th Assessment Report**

Secretariat will present possible APN contribution to IPCC AR4.

IGM/8/16

10:30 Break

Session 3 – Inter-Governmental Issues

10:50 **17. MEMBERSHIP DEVELOPMENT**

Secretariat will present membership development.

IGM/8/17

11:10 **18. NEXT MEETING**

Date and venue of the next SPG Meeting and Inter-Governmental Meeting will be discussed.

11:20 **19. ANY OTHER BUSINESS**

Members and observers raise any issues of concern that have not already been discussed.

Session 4 – Presentations & Closing

11:50 **20. PRESENTATIONS**

- *“Global Change and Ecosystems in the 6th Framework Programme on RTD of the EU – Perspectives and Chances for Co-operation”*
Christian Patermann, ENRICH
- *“The Millennium Ecosystem Assessment: Current Status and Progress Update”*
Marcus Lee, Millennium Ecosystem Assessment
- *“Antarctica - in from the Cold”*
Michael Stoddart, Australian Antarctic Division

12:50 Lunch

14:20 **21. CHAIRPERSON’S SUMMARY**

Delegates will discuss a draft chairperson’s summary.

IGM/8/18

15:50 **Closing**

Chair and Secretariat Director will make closing remarks.

Secretariat Review Activities Since 7th IGM

This paper is a Summary of the work undertaken by the APN Secretariat since the 7th IGM.

Action Points from 7th IGM/SPG

- Call for Proposals:
 - Modified the “Call for Proposals-Guide for Proponents”
 - Modified the review process
 - Questionnaire compiled to gauge the success of the Pre-Proposals stage
- Conducted 1st APN Synthesis (land use cover change)
- Organised global change awareness raising symposia throughout Asia
- Held one symposium and two workshops in Kobe
- Drafted and issued “Terms of Reference for APN Liaison Officers”
- Drafted contents of 1st APN Annual Report and began preparations for establishing an ad hoc committee
- Drafted report templates for reporting uniformity and to better reflect the character of APN. These reports have been combined into one publication
- Began preparation for establishment of “Resources Development Committee”
- Opened up communications for securing funding resources from Australia and New Zealand
- Began preparations for APN 10th Anniversary, APN Scientific evaluation, and 2nd Strategic Plan

APN Member Changes (out↔in)

New national Focal Point

Cambodia

Mr. Chou SOPHARK (Ministry of Environment)	↔	Mr. Sovannora LENG (Oct. 2002) (Ministry of Environment)
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Mongolia

Ms. S. SARANGOO (Min. of Nature and Env.)	↔	Ms. P. BAIGALMAA (Mar. 2003) (Min. of Nature and Env.)
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New SPG member

Japan

Dr. Shuzo NISHIOKA (NIES)	↔	Prof. Nobuo MIMURA (Nov. 2002) (Ibaraki University)
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Thailand

Mr. Suphavit PIAMPHONGSANT (Ministry of Sci., Tech. & Env.)	↔	Prof. J. BOONJAWAT (July 2002) (Chulalongkorn University)
--	---	--

Secretariat Staff Changes (out↔in)

Administrative Manager

Atsuhito FUKUOKA ↔ Toshiaki MITANI (April 2002)

Director

Ryutaro YATSU ↔ Sombo T. YAMAMURA (July 2002)

Publicity/Communications

- APN sessions at A-P Climate Change Seminar, World Water Forum, and WSSD
- Website updated weekly (plans for major over-haul in 2003/2004)
- Quarterly newsletter issued
- APN project information distributed throughout APN network
- Media coverage of symposia and workshops
- Website link and CD-ROM of APN/UNU roundtable session on “Post WSSD: Sustainable Science and the Way Forward for Global Change Research”
- APN Global Change Directory
- APN staff/representatives have attended/made presentations at:
 - IHDP/START – International Human Dimensions Workshop, Bonn, Germany
 - First Annual Mekong Flood Forum, Phnom Penh, Cambodia
 - 12th Asia-Pacific Seminar on Climate Change, Bangkok, Thailand
 - World Summit on Sustainable Development, Johannesburg, South Africa
 - GCOS Regional Capacity Building Workshop for East and Southeast Asia, Singapore
 - APN-UNU/IAS Roundtable Session, Tokyo, Japan
 - IGFA Plenary, Norwich, UK
 - Workshop on Sustainable Environmental Management of Catchment Ecosystems in Asia-Pacific Region, Tokyo, Japan
 - Fifth Session of the IOC Sub-Commission for the Western Pacific (WESTPAC-V), Fremantle, Australia
 - START SSC, Hanoi, Viet Nam
 - IAI-IGBP and IAI/SAC Meetings, Mendoza, Argentina
 - Planning meeting for an IRS of Monsoon Asia, Bangkok, Thailand
 - AIACC Asia/Pacific Open Meeting, Bangkok, Thailand

APN Workshops/Symposia:

- ❖ LUCC-Synthesis Workshop, Kobe, Japan
- ❖ LUCC-Vegetation Recovery Symposium, Kobe, Japan
- ❖ Vegetation Recovery in Degraded Land Areas, Kobe, Japan
- ❖ APN/START Global Change Research Awareness Raising Symposium in Northeast Asia, Vladivostok, Russian Federation
- ❖ APEIS Capacity Building Workshop on Integrated Environmental Assessment in the Asia-Pacific Region, New Delhi, India
- ❖ APEIS Capacity Building Workshop on Integrated Environmental Monitoring in the Asia-Pacific Region, Beijing, China

- ❖ Global Change Impact Assessment for Himalayans (2002-03), Kathmandu, Nepal
- ❖ GHG Mega-Cities in Asia (2002-04), Hawaii, USA
- ❖ Nutrient, Sediment and Carbon Fluxes to the Coastal Zone in South Asia (2002-05), Negombo, Sri Lanka
- ❖ Training Workshop for the Pacific Island Countries to Enhance Skills in Global Change Negotiations and Synthesis Activities (APN 2002-08), Suva, Fiji
- ❖ Symposium on Adaptation of Asia and Pacific to Global Change in the 20th Pacific Science Congress (APN 2002-11), Bangkok, Thailand
- ❖ Water Resources in South Asia (APN2002-12), Kathmandu, Nepal
- ❖ Atoll Island Change and Linkages to Sea Level Variations in Oceania (APN 2002-16), Suva, Fiji
- ❖ PABITRA Network for Collaborative Research on the Ecology of Global Change in Island Landscapes of the Tropical Pacific (APN 2002-17), Suva, Fiji

Programme Development

- Synthesis Activities
- Resources Development
- APN links with IPCC
- Scientific Review
- Annual Report
- Strategic Plan
- Networking & Capacity Building:
 - Awareness Raising Symposia
 - Asia Pacific Environmental Innovation Strategy Project
 - Website –Network- Development
 - CAPaBLE

APN Liaison Officer Reports

2002/2003

APN Liaison Officer Report for Oceania

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APN Liaison Officer Report for Oceania

Overview of work carried out on behalf of APN

The overview of work carried out on behalf of APN covers the newsletter regional news and articles published during FY2002 and workshops attended as follows:

- *Pacific Islands Community-Based Conservation Training Course, USP*

The Pacific Islands Community-based Conservation Training Course was conducted at USP, in two phases, 15 April-10 May and 28 Oct-15 Nov. Dr. Koshy (Director, START-Oceania Secretariat) and Ms. Leigh-Anne Buliruarua were resource persons, and the secretariat co-ordinated the overall running of the course. The course attracted key environmental management personnel from 9 Pacific nations. The aim of the course was to enhance the skills and knowledge of participants, in order to build their confidence and expertise in supporting community-based conservation management. SPREP (South Pacific Regional Environment Programme), ICPL (International Centre for Protected Landscapes), Pacific Centre for Environment and Sustainable Development (PACE-SD), USP and START were responsible for the management of the course.

- *Regional Consultation Workshop on SOPAC Sustainable Development Strategy 25-26 June 2002, Sigatoka, Fiji*

The meeting, attended by Leigh-Anne Buliruarua, was held in consultation with CROP agencies as well as SOPAC member countries on the Sustainable Development Strategy paper (SDS). The SDS is a coherent plan set within a medium-term development framework established by the new Corporate Plan (2002-2004) for SOPAC. Its primary objective was to strengthen national capacities in the key programme areas that fall within SOPAC's mandate, strengthen the focus of interventions and thereby promote long-term development with economic security, environmental integrity, social stability and intergenerational equity.

- *Climate Change Roundtable Meeting, 17-18 May, Nadi*

The second roundtable meeting, hosted by PACE-SD, USP, enabled regional and international organisations and donor agencies involved in climate change research and funding activities to provide updates of activities in the region. The START-Oceania Secretariat, together with the PACE-SD coordinated the roundtable.

The Secretariat compiled a detailed matrix and summary sheet of on-going and new climate related projects in the region. Copies are available from the START-Oceania website, <<http://www.usp.ac.fj/start/>>.

- *Climate Change Vulnerability and Adaptation Assessment 8 July-25 October 2002*

This year, the START-Oceania Secretariat took the lead role with PACE-SD in coordinating the overall running of a 16-week, full-time training course as part of continuing activities of the Climate Change and Variability Initiatives in the region. Dr. Koshy and Ms. Leigh-Anne Buliruarua were both involved in the teaching of the course. Six participants from the Pacific region including one from the Caribbean attended the course.

- Pacific-Asia Biodiversity Transect (PABITRA) Initial Synthesis Meeting, 15-19 July, 2002, Suva (APN 2002-17, PI: Prof. D. Mueller-Dombois, USA)

The meeting was held at USP with about ten participants from the USP, WWF-Pacific, National Trust of Fiji, Native Land Trust Board and Fiji's Department of Environment. Leigh-Anne Buliruarua represented APN and START at the meeting. One of the main objectives of the meeting was to develop the steps needed to make PABITRA in Fiji operational. This included the development of "Background Paper," which would bring together the existing data for the proposed Gateway site. Prof. Mueller (PI) also made a presentation on the PABITRA/APN relationship with a focus on island landscapes under global change. A training course was held on 18 November, for 10 days, as part of the capacity building component of the PABITRA project. The training focussed on methodologies and sampling protocols for fieldwork. The PABITRA strategy is to combine the horizontal and vertical approaches to ecosystem studies and biodiversity conservation.

- *Type II Initiatives to the World Summit on Sustainable Development (WSSD), Johannesburg*

From the outcomes of the WSSD, the Pacific Island Countries (PIC) perspective, it was important that the needs of the small island developing states were adequately recognised and reflected both within the two negotiated outcomes and also within the Type II initiatives. The Type IIs, (a series of 14 areas were identified as needing attention for sustainable development of the Pacific region), are broad umbrella initiatives, voluntary in nature, and not necessarily fully developed projects at this stage. However, these will serve as platforms for the development of many useful projects in the future. Donor agencies will be keener to fund projects in these areas than in others. The Type IIs are meant to create 'action' and have been acclaimed as the most creative of outcomes from the WSSD. In response to this, a number of umbrella initiatives have been developed on the basis of the Pacific Regional Submission to the WSSD as well as needs reflected in National Assessments. This provides an ideal opportunity for START/APN, in forming global change partnerships in the region. The secretariat was extremely actively involved in the lead-up, the WSSD meeting in Johannesburg and current follow-up activities.

- *Training Workshop for the Pacific Island Countries to Enhance Skills in Global Change Negotiations and Synthesis Activities 23-27 September 2002 (APN 2002-08, PI: K. Koshy, Fiji)*

This APN workshop, organised by the Pacific Centre for Environment and Sustainable Development (PACE-SD), was aimed at enhancing the global change negotiations and syntheses writing skills of the Pacific Island countries. About thirty participants from the region including one from the Caribbean attended the workshop, that was structured to address the region's needs in two vital areas - Technical Writing including computer based data base management and proposal writing (Synthesis) and Negotiations Skills. The APN Liaison officer took an active part in the co-ordination and running of the workshop.

- Atoll Island Change and Linkages to Sea Level Variations in Oceania (APN 2002-16, PI: N. Harvey, Australia)

A workshop, held on 23-24 November 2002 at USP, was facilitated by Prof. Nick Harvey (Australia) and Dr. Paul Kench (New Zealand). The aims of the workshop were to provide basic techniques for coastal monitoring and to outline plans to establish a regional support network in enabling participants to exchange information, and to conduct subsequent analyses and synthesis of data with regard to coastal management policy. As a follow-up to the November workshop, a team led by Prof. Harvey also visited Tuvalu on 20-23 Jan. 2003 to set up beach profiles on sites with minimal or no human impacts, to establish the baseline for coastal erosion arising from “global change”. A web site is being developed by the secretariat to assist in furthering the network: < www.usp.ac.fj.start/pacman >

- *START-Oceania Committee Meeting, 25-26 Nov. 2002, USP, Fiji*
Committee members were briefed on activities of the secretariat over the course of the year. Some of the main items discussed at the meeting included a drive for a wider regional representation on the committee including IRD (Institute of Research and Development based in New Caledonia) and University of Papua New Guinea, and the Oceania support plan for the START Decadal Plan.

Overview of Regional Activities

The overview of regional activities covers is listed as follows:

- *Integrated Coastal Management (ICM) Workshop, 9-11 April 2002, Suva*
This workshop was attended by over 60 participants from national government agencies, provincial government, local villages, research institutes, non-government organisations and the private sector, along with international representatives, attended the workshop at USP's Marine Studies complex. The main objectives of the workshop were to explore, within a case study on the Coral Coast, how an integrated coastal management approach could help address coastal issues and achieve more sustainable development; and, to recommend priority actions and mechanisms for advancing ICM in Fiji

- *Pacific Islands High Level Consultation, Investing in Adaptation 14-16 May, 2002, Fiji*
Dr. Koshy attended this meeting. The concept for a possible Regional Adaptation Facility emerged from a high-level meeting of finance, planning and environment ministers and heads of government agencies from the Pacific Island Countries (PICs) to deal with issues of adaptation to climate change, climate variability, sea level rise and associated disaster management. The meeting focused particularly on how to access adaptation financing and mainstream adaptation into economic planning. The meeting concluded that adaptation to climate change and disaster management are closely linked and need to be dealt with in the context of wider economic risk management.

- *The Global Biodiversity Forum (GBF) 4-5 July 2002, Rarotonga*
The meeting focused on three major biodiversity conservation issues: traditional knowledge and local communities, invasive species and global climate change. The recommendations and resolutions from the GBF were forwarded to and provided a very useful nucleus for the resultant resolutions arising out of the 7th Conference.

- *7th Pacific Islands Conference on Nature Conservation and Protected Areas 8-12 July 2002, Rarotonga*

The conference included participation from regional and international organisations, national governments and NGOs. The meeting focused on Breakout Working Groups to address the major conservation issues, come up with new visions and goals that could realistically be pursued during the next four years, and to identify activities or targets that could be achieved during this time period. The Working Groups also came up with resolutions related to the main areas of biodiversity conservation concern in the region. Two smaller-scale meetings were held prior to the Conservation conference.

- *High Level Pacific Regional Consultation on Water, 29 July–3 August 2002, Sigatoka, Fiji*

The meeting, attended by Dr. Philomena Gangaiya, USP, was organised by the South Pacific Applied Geoscience Commission (SOPAC) in conjunction with the Asian Development Bank (ADB), and co-sponsored by a number of other agencies with interest in the water sector from an international or regional perspective. The objectives of the meeting were: (i) to allow small island developing states to strengthen their policies and approaches for sustainable development in the water sector; and (ii) to prepare for the Third World Water Forum, to be held in Kyoto, Japan, in March 2003. The outcomes of the Sigatoka consultation included a Pacific Regional Action Plan for Sustainable Water Management and a Ministerial Declaration and Communiqué that has so far been adopted by 12 Ministers and Secretaries of State. The Action Plan is significant in that it is the first time government officials, NGOs, and people concerned with water have come together to agree on a unified approach to the water sector.

- *Pacific GIS/RS Annual User Conference 19-21 Nov. 2002*

The Pacific GIS and Remote Sensing User Forum held its 2002 Annual User Conference in USP, Suva. The objective of the conference was to encourage the development of a professional and more effective GIS and Remote Sensing User Community in the Pacific Island Region. The meeting enabled the sharing of organisational goals, achievements, problems, discussions on future directions, and the needs of the regional GIS and Remote Sensing community.

- *Assessment of Impacts and Adaptation to Climate Change (AIACC)*

This AIACC project is well under way, with case studies of a low atoll island (Aitutaki, Cook Islands), a high volcanic island (Viti Levu, Fiji) focusing on coasts, infrastructure, water resources, and agriculture. Two research assistants have been recruited and are assigned to the Pacific Environment Centre to assist with the project. The project will occupy a vital niche in the comprehensive programme of climate change adaptation activities endorsed by the SIDS of the region, and will complement the new climate change adaptation activities currently underway in the Pacific, especially those funded by CIDA.

- *Sugar and El Nino Project*

This project (featured in the October edition of the APN newsletter) focuses on the impacts of ENSO-related climate variability on sugarcane in Fiji with a view to assessing its influence on sugarcane yields and evaluating optional and sub-optional strategies for enhanced sugar production using climatological information. The project

has been completed and the final report is being fine-tuned. A major workshop relating to 'Sugarcane and Climate Change' for the latter part of the year is being planned. This workshop will be open to wider participation, including representatives from sugar producing countries.

- *Canadian International Development Agency (CIDA) Project*

The South Pacific Regional Environment Programme (SPREP) received funding (US\$ 1.3 million) from CIDA to assist governments, communities, and the private sector to respond to climate change in four Pacific Island Countries. The four countries selected to participate in the project are Cook Islands, Fiji, Samoa and Vanuatu. The funds will help to build capacity within the region, facilitate partnerships between stakeholders, and design and implement community-based pilot projects. The project, being implemented over 24 months, works in synergy with the AIACC project in that CIDA focuses on community-based projects while the AIACC project focuses more on research-based capacity building.

- *International Waters Programme*

The International Waters Programme (IWP), funded by GEF is a five-year programme for 14 Pacific island countries. There are two main components: Oceanic, which focuses on the management and conservation of tuna stocks in the western central Pacific and Coastal, focussing on integrated coastal watershed management. It also focuses on pilot projects that address sustainable resource management and conservation issues in the coastal zone. The first Tripartite Meeting for the IWP was held on 25 July 2002, Marshall Islands. Updates and discussions on IWP activities to date were made with representatives from IWP Secretariat, UNDP, and SPC/FFA and representatives from participating countries.

Outcomes and Products

- Training Manual of International Negotiations and Synthesis writing skills (APN 2002-08);
- Matrix of Climate related activities in the region;
- Pacific WSSD Type II Initiatives/Partnerships
- Pacific Islands Coastal Monitoring and Analysis Network (PACMAN) website <www.usp.ac.fj/start/pacman>;
- Capacity Building article published in "Tiempo," "*Climate Change and the Pacific Island Countries: Capacity Enhancement to Minimise Vulnerability*" by Prof. Koshy;
- Article published in APN newsletter, Oct. 2002, "*El Nino and Sugar Production*" by Prof. Koshy;
- First recipient from Oceania awarded the START Fellowship award, Mr. Francis Mani, post-graduate student, The University of the South Pacific, "*Methane Monitoring in the Pacific region*";
- Global Change Library Database at the Secretariat;
- Pending article from the START-Oceania Secretariat on Integrated Coastal Management in the Pacific region;
- Quarterly reports for APN Secretariat newsletter; and
- Four bulletins published in Oceanic Waves, promoting global change activities in the region.

Future Activities

- Future Projects
 - Integrated Coastal Management (ICM): A Pacific Synthesis and The ICM project followed directly from the APN Regional Synthesis workshop Regional ICM Synthesis workshop and ICM Book;
 - Changes in the Pacific Atmospheric composition and signals of global change;
- Promoting Pacific WSSD Type II Initiatives/partnerships in the region;
- Furthering the PACMAN network;
- Promoting START Fellowships/Awards in the region;
- Promoting APN/START related activities in the region;
- Facilitating the promotion of short-term internships to regional organisations involved in global change research;
- Disaster Management Training (negotiations stage with the East-West Center); and
- Professional Certificate in Integrated Coastal Management (with Institute of Applied Sciences, USP).

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APN Liaison Officer Report for South Asia

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APN Liaison Officer Report for South Asia

Overview of work carried out on behalf of APN

- *Contribution to APN Newsletter:*
 - Submitted quarterly inputs relating to global change activities carried out in South Asia for the APN Newsletter; and
 - Discussed and encouraged Project Leaders of APN funded projects in South Asia to submit articles for the APN Newsletter.

- *Information Exchange*
 - Disseminated the APN '2002 Call for Proposals' among researchers and scientists in South Asia;
 - Aided South Asian Scientists in seeking potential partners from the region and also in the development of their proposals for submission to APN;
 - Disseminated APN's role and current activities to the participants of several workshops/symposia organised in South Asia;
 - Distributed the APN Newsletter in the region;
 - Distributed reports of workshops and other global change events related to the South Asian global change community; and
 - Distributed information about START activities in the region.

- *Workshops Attended*
 - Initial Group meeting of the APN supported project "Water resources in South Asia: An Assessment of Climate Change, Associated Vulnerability and Coping Mechanism," 23-26 May 2002, Dhaka, Bangladesh;
 - SASCOM Meeting, 25-26 May 2002, Dhaka, Bangladesh;
 - IHDP-START International Workshop on the Human Dimensions of Global Environmental Change on Urbanization, 2-16 June 2002, Bonn, Germany;
 - Agenda for South Asian Journalists Workshop on Global Environmental Negotiations, 1-2 August 2002, New Delhi, India;
 - APN RWC-GCTE Research Planning Workshop on Climate Variability and Rice-Wheat Productivity in the Indo-Gangetic Plains, 8-10 October 2002, New Delhi, India;
 - APEIS Capacity Building Workshop on Integrated Environment Assessment in the Asia-Pacific Region, 24-26 October 2002, New Delhi, India;
 - APN/SASCOM/LOICZ Regional Workshop on Assessment of Material Fluxes to the Coastal Zone in South Asia and their Impacts, 8-11 December 2002, Negombo, Sri Lanka;
 - APN Workshop on Water Resources in South Asia: An Assessment of Climate-associated Vulnerabilities and Coping Mechanisms, 7-9 January 2003, Kathmandu, Nepal;
 - APN Workshop on Global Change Impact Assessment for the Himalayan Mountain Region for Environmental Management for Sustainable Development, 10-12 January 2003, Kathmandu, Nepal;
 - SASCOM OTC Data Synthesis Meeting, 11-12 January 2003, New Delhi, India; and

- APN/E-WC/IGES/START International Workshop on Policy Integration Towards Sustainable Urban Energy Use for Cities in Asia, 4-5 February 2003, Honolulu, Hawaii, USA.

Overview of Regional Activities

- *25-26 May 2002, SASCOM Meeting, Dhaka, Bangladesh*

The South Asia START Committee (SASCOM) meeting was held in Dhaka. The meeting was inaugurated by Dr Shamsheer Ali, Acting President of Bangladesh National Academy of Sciences and presided over by Dr Amir Muhammed, Chairman of SASCOM. During the meeting, ongoing global change related scientific activities in Bangladesh were presented to the SASCOM members. The SASCOM members also reviewed various global change related scientific activities being carried out in the SASCOM region and took decisions for the further strengthening of such activities in this region. The major decisions taken include the strengthening of an information network in the region and providing encouragement to regional scientists to submit proposals to APN (especially on sea-level rise, sundarbans, automobile emissions, and aerosols & respiratory diseases).

- *20-22 June 2002, Program Initiation Workshop, Kathmandu, Nepal*

The 'Program Initiation Workshop' was organized in Kathmandu, Nepal under the APN 2002-03 sponsored project entitled "Global Change Impact Assessment for Himalayan Mountain Region for Environmental Management and Sustainable Development". The workshop participants selected three mountain regions of the Himalayas, namely Kali Gandaki in Nepal, Alaknanda Valley in India and Galis in Pakistan as target areas to perform case studies under the project. The participants also identified the kind of data needed and agreed on a common format for the reporting of the same.

- *1-2 August 2002, Agenda for South Asian Journalists Workshop on Global Environmental Negotiations, New Delhi, India*

This workshop for South Asia journalists was organized by the Centre for Science and Environment in New Delhi. Workshop participants discussed various issues that the WSSD considered and the positions taken by different countries.

- *8-10 October 2002, APN RWC-GCTE Research Planning Workshop on Climate Variability and Rice-Wheat Productivity in the Indo-Gangetic Plains, New Delhi, India*

APN RWC-GCTE Research Planning Workshop on 'Climate Variability and Rice-Wheat Productivity in the Indo-Gangetic Plains' was organized by the Rice Wheat Consortium (RWC) in collaboration with IGBP-GCTE from 8-10 October 2002, in New Delhi. Workshop participants discussed several key issues like agronomical practices and constraints in Rice-Wheat ecosystems especially in the Indo-Gangetic Plains (IGP) area. Issues related to reduction in yields, available modelling capabilities, available and required data sets, possibilities of development of a full-scale proposal for 3-5 years and potential partners for collaboration were also discussed in detail.

- *24-26 October 2002, APEIS Capacity Building Workshop on Integrated Environment Assessment in the Asia Pacific Region, New Delhi, India*

The Indian Institute of Management (IIM), Ahmedabad, India and the National Institute of Environmental Studies (NIES), Tsukuba, Japan organized an 'APEIS Capacity Building Workshop on Integrated Environmental Assessment in the Asia Pacific Region' in New Delhi, 24-26 October 2002, with APN sponsorship under the Asia-Pacific Environmental Innovation Strategy (APEIS) Project. The objective of the workshop was to build capacity in the Asia-Pacific region to fulfil the need for integrated environmental assessment modelling and policy making which is required for meaningful participation of this region's nations in global environmental actions, such as in global sustainable development and climate change regimes. All these issues require integrated assessment of environmental policies and measures in the context of their specific local conditions. The Asia-Pacific Integrated Model (AIM) developed by NIES researchers is an important tool for development of integrated environmental assessment in the region. The workshop provided exposure of the state-of-the-art knowledge about AIM model structures, applications and hands-on experience to about twenty participants.

- *8-11 December 2002, APN/SASCOM/LOICZ Regional Workshop on Assessment of Material Fluxes to the Coastal Zone in South Asia and their Impacts, Negombo, Sri Lanka*

The 'APN/SASCOM/LOICZ Regional Workshop on Assessment of Material Fluxes to the Coastal Zone in South Asia and their Impacts', convened in Negombo, Sri Lanka, 8-11 December 2002. During the technical sessions, besides several keynote presentations, about 23 presentations were made by the project team members and other participants on the studies carried out by them in Bangladesh, India, Pakistan and Sri Lanka dealing with the deliveries to the coastal zones, biogeochemistry, material concentrations in coastal waters and coastal impacts. Participants also got hands-on training on the LOICZ-CABARET model to quantify the nutrient fluxes based on their own data. Country reports of Bangladesh, India, Nepal, Pakistan, and Sri Lanka were also presented in the workshop. Participants had detailed discussions on several issues like the need for generating the meta-data information, research needs for appropriate policy formulation, participation of stakeholders in decision making process and management, ranking and assessment of issues in the perspective of South Asian region. It was agreed by the project team members to try to bring out two reports. One on 'bio-geochemical budget' comprising of the seven budgets presented during this workshop and two budgets presented in the first workshop of the project held in 2000 in Sri Lanka along with few papers presented on nutrient fluxes in this workshop. The second report proposed to be brought out in the form of a regional assessment report based upon the papers and country reports presented in this workshop along with information available elsewhere. Two more regional workshop have been proposed to consolidate this endeavour for which funding will be explored.

- *7-9 January 2003, year-end meeting on Water Resources In South Asia- an Assessment of Climate Change-associated Vulnerabilities and Coping Mechanisms, Kathmandu, Nepal*

The year-end meeting of the APN 2002-12 supported project on Water Resources in South Asia was held in Kathmandu, 7-9 January 2003. The meeting was attended by participating scientists from Bangladesh, India, Nepal and Pakistan besides invited keynote speakers who presented papers on selected topics related to the project. The Hansen Institute for World Peace provided supplementary funding to support this

meeting and provided management for implementation of year one activities. The main objective of the year-end meeting was to discuss the reports prepared by teams of scientists from all the participating countries (Bangladesh, India, Nepal and Pakistan) that were prepared according to an agreed outline developed during the program initiation meeting in Dhaka in May 2002. The workshop was also aimed at preparation of the project progress report for submission to APN, and preparation of the Project Proposal on APN format to request extension of the project for the second year. Participants had in-depth discussions on all presentations in the context of the objectives of the project to ensure that all aspects of the study as given in the approved project for the first year had been covered, and to ensure a uniformity in format and style of all the country presentations for the purposes of inter-country comparison of the data and preparation of the synthesis report for the South Asia region. The participants also discussed the format for preparation of the Project Report and the Project Proposal for Year 2 on the basis of guidelines provided by the APN Secretariat. Draft reports were prepared by working groups and approved by workshop participants in the plenary session. Plans for compilation of comprehensive workshop proceedings and its publication were also discussed. It was decided that country reports would be reviewed by the respective team members to ensure conformity to the agreed outline and use of uniform format for presentation of climate, hydrological, agronomic and socio-economic data.

- *10-12 January 2003, APN 2002-03 Project Review Meeting on Global Change Impact Assessment for the Himalayan Mountain Region, Kathmandu, Nepal*

This meeting was held back-to-back with APN 2002-12 project on 'Water Resources in South Asia' and was attended by participating scientists from India, Nepal and Pakistan. During the workshop, national case studies for India, Nepal and Pakistan were presented by the country study teams, which were followed by extensive discussion on the individual country studies. Use of standard units and a common format, as well as submission of the final version by 15 March 2003, were agreed upon. It was then followed by presentation of synthesis report which included studies on snow and glaciers, hydro-meteorological parameters, agriculture, and socio-economics. It was decided to include gap-filling studies, accessing and using available models, developing scenarios, analyzing policy implications, and recommending policy alternatives with a future plan in the second year of the project.

- *11-12 January 2003, SASCOM OTC Data Synthesis Meeting, New Delhi, India*

The meeting was organised under the auspices of SASCOM at New Delhi in which the members of country teams carrying out the Open Top Chamber (OTC) studies for the effect of elevated carbon dioxide on agriculture yields in Bangladesh, India, Nepal, and Sri Lanka were invited to synthesize the results obtained so far. This OTC program initially was built up with the help of APN funding and presently being run independently by each country group using their own resources. The objective of the meeting was to strengthen the OTC network developed in the South Asian region and provide an opportunity to exchange data and synthesize the information to help in generating transfer functions which then can be used to extrapolate FACE results for specific cases in different countries. The FACE facility is currently available at the Indian Agriculture Research Institute (IARI), New Delhi. OTC scientists from Bangladesh, Nepal and India participated in this meeting and exchanged data with each

other. The participants were also exposed to the agriculture modelling capabilities of the IARI.

Outcomes and Products

- CD-ROM containing all presentations made during the APN RWC-GCTE Research Planning Workshop on 'Climate Variability and Rice-Wheat Productivity in Indo-Gangetic Plains' has been released;
- 'Global Change and Himalayan Mountains: Proceedings of a Scoping Workshop' edited by Dr K.L. Shrestha;
- 'Land Use - Historical Perspective: Focus on Indo-Gangetic Plains' edited by Drs Y.P. Abrol, S. Sangwan AND M.K. Tiwari; and
- Coastal zone project's web-site: www.coastal-fluxes.slt.lk

Future Activities

- Strengthening of networking efforts among scientists and researchers and other stakeholders in the South Asian region for rapid promotion of the exchange of information.

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APN Liaison Officer Report for Southeast Asia

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APN Liaison Officer Report for Southeast Asia

Overview of work carried out on behalf of APN

The overview of work carried out on behalf of APN covers the newsletter regional news and articles published during FY2002 and workshops attended as follows:

- *SEA News Update and Article published in APN Newsletters during FY2002 (April 2002-January 2003 issues)*

APN newsletter was used as an initiative for information dissemination and project updates among scientists within the region. Several communications were sent to groups of scientists to encourage a contribution on the article to be printed in the newsletter. Several articles and news updates were submitted. Southeast Asia START RC as the Southeast Asia liaison office for APN had coordinated with APN Programme Managers for the publications of these articles and activities reports. There were 23 activities updated in the APN Newsletter during FY2002 (from the April 2002 issue to the January 2003 issue). In the April Issue, an article contributed by Drs. John McGregor, Hal Gordon, Kevin Walsh and Kathleen McInnes on the Atmospheric Modeling Developments at CSIRO reporting the new development that had provided an enhanced ability to simulate climate and its changes for Asia and Oceania was accepted for publishing.

- *Meetings represented by APN Liaison Officer: Dr. Anond Snidvongs are listed as follows:*

- *23-25 April 2002.*

First Annual Mekong Flood Forum 2002 held in Phnom Penh, Cambodia. The forum was to support the riparian countries and the relevant international and civil society organizations of the Lower Mekong River Basin to communicate and to coordinate their policy and action plans towards a better regional integration of flood preparedness, management and mitigation for the upcoming flood season and future flood season. All Mekong River Commission member countries and many international agencies attended this event.

- *26-31 July 2002.*

Dr. Snidvongs met with Mr. Chanthanet Boualapha, the APN SPG of Lao PDR at the Science Technology and Environment Agency (STEA) as well as many other Senior Officials to discuss APN activities towards regional research and capacity building activities that would benefit Lao PDR.

- *5-7 September 2002.*

Dr. Snidvongs had met with Drs. John McGregor and Kim Chi Nguyen at CSIRO Atmospheric Research in Aspendale, Australia, to discuss on the improvement of climate modeling for Southeast Asia and how the model results would be efficiently used by other projects. During this trip Dr. Snidvongs had also traveled to Adelaide to meet with Prof. Matthias Tomczak at the Flinders University of South Australia to discuss on the progress of the regional textbook on "Physical Oceanographic Processes in Southeast Asian Waters" to be published by SEA START RC in 2003.

- *9-13 September 2002.*

At the Fifth Session of the IOC Sub-Commission for the Western Pacific (WESTPAC-V) in Fremantle, Australia, the projects and programs of WESTPAC for 1999-2001 were reviewed and future plans for 2002-2004 were adopted for the Sub-Commission. As APN representative, Dr. Snidvongs gave a presentation on APN and made several comments and suggestions especially those related to global change.

- SEA START RC promoted the announcement of the APN '2002 Call for Proposals' within the region. As a result, there were 13 proposals submitted by Principle Investigators from the Southeast Asia Region and many more proposals that involved Southeast Asian researchers.

Overview of Regional Activities

Regional activities carried out in the past year are highlighted as follows:

- *Workshops and Meetings on Climate Change in SEA:*

There were 23 global change related activities organized in Southeast Asia during FY2002 that the Liaison Office was aware of. Out of these activities, several cooperation and outcomes had been reached and mutually agreed upon at Country, Regional and Inter-Regional levels. During the past year much of the regional data in GIS and other forms as well as meta-database had been established. There were discussions on how to identify the potential source of data and information and to further improve the database operation and data synthesis at Regional levels.

Scientists and institutional networking had been among the hot topics discussed during the past year, as they would strengthen regional capability to do research and assess impacts of global change at all levels. Some of the regional activities did foster the policy analysis and options. There were several workshops, knowledge sharing sessions, and success stories sharing sessions arranged which enhanced the technology transfer, skills development, capacity building and development of strategic plans at national and regional levels. However, there are still new challenges and issues in global change research development for scientists to tackle for further improvements, which include the earth system science research and education, social and economic dimensions of global change, intra-regional inequity, and the capacity building for the least developed countries in the region.

- *Some Regional Research Projects:*

- Coastal and Marine Environment of Southeast Asia: Status and Opportunity for Regional Cooperation (PI: Anond Snidvongs, SEA START RC, Thailand) in cooperation with the ASEAN and funded by UNEP, the objective of the project was to strengthen capacity of the countries in integrated protection and management of the coastal and marine environment and to promote networking among concerned agencies.
- *Geo-Science Information System for Sustainable Development of Coastal Zone of South China Sea (PI: Anond Snidvongs, SEA START RC, Thailand)*
The objective of the project was to compile data and information related to the South China Sea coastal zone from open sources and to develop a prototype GIS that served requirements of potential users in the region. From an Agreement

between SEA START RC and UNEP/GEF South China Sea project, SEA START RC had also been served as the regional information center for the project.

- *Integrated Assessment of the Mekong Basin (PI: Anond Snidvongs, SEA START RC, Thailand)*
With funding from UNEP/GIWA and IUCN, the project aimed to assess the status of water resources, environmental quality and ecosystem goods and services of the Mekong Basin. SEA START RC in collaboration with Mahidol University in Thailand had been the core institutions regarding assessment of the Wetlands in the basin in relation to climate change.
- *International Cooperative Study on the Gulf of Thailand (PI: Anond Snidvongs, SEA START RC, Thailand)*
The project had conducted researches and developed several operational oceanographic information and near real-time marine forecasting systems for Southeast Asian seas.
- *Building Adaptive Capacity to Environmental Change in Southeast Asia: Integrating Contributions from Theory, Models and Case Studies for Better Development Strategies (PI: Louis Lebel, Chiang Mai University, Thailand)*
The project had three primary objectives: 1. to contribute to building theories and models of resilience and adaptive capacity; 2. to improve the capacity of groups within Southeast Asia to utilize some of these ideas, theories and modeling tools for analyzing adaptive capacity to regional and global environmental change; and 3. to develop awareness among decision makers in business, government and resource management agencies about the behavior of complex adaptive systems and explore ways of building adaptive capacity.
- *Land Use and Land Cover Change for Southeast Asia (APN 2001-13, PI: Sharifah Mastura Syed Abdullah, Universiti Kebangsaan Malaysia, Malaysia)*
The project had been proposed for a two-year term and completed in 2001. Research results and experiences from this project had developed a foundation for SEARRIN researchers to pursue future projects in Global Change Research.
- *Institutional Response to Global Change: The Consequences of Interplay between International Regimes and Local Institutions for the Forests of Southeast Asia (APN 2001-14, PI: Suparb Pasing, Walailak University, Thailand)*
Several activities, namely; case studies, working group meetings and an international workshop had been held focusing on the issues of interplay between international regimes and local institutions for the forests of Southeast Asia.
- *International Initiative on Science and Technology for Sustainability (PI: Louis Lebel, Chiang Mai University, Thailand)*
The main goal of project was to expand and deepen the research and development agenda for sustainability science and technology including strengthening the infrastructure and capacity for conducting and applying science and technology in the service of sustainability goals.
- *Resilience, Adaptive Capacity and Complex Adaptive Systems (PI: Louis Lebel, Chiang Mai University, Thailand)*
The objective of the project was to contribute a set of related activities funded by various sources that has theoretical, practical and capacity building goals. A number of workshops had been held to reach the objective.
- *Sustainable Development and Global Environmental Change Assessment Report for Southeast Asia (PI: Louis Lebel, Chiang Mai University, Thailand)*

The purpose of the Assessment Report was to provide a comprehensive and integrated assessment of the relationship between development process and global environment change in the Southeast Asia region. Agreement had been reached with START and the original sources of sponsorship that were administered via APN to complete the book by the end of 2002.

- *Global Carbon Project (PI: Louis Lebel, Chiang Mai University, Thailand)*
This joint IGBP-IHDP-WCRP project aimed at addressing the carbon challenge- reflected in the unprecedented rise in carbon dioxide concentrations in the atmosphere. SARCS Science Coordinator, Dr. L. Lebel contributed to the design of the overall structure of the Project, especially, the incorporation of relevant human dimensions processes and issues.
- *Sustainable Development Indicators Project (PI: Jiunn-Rong Yeh, National Taiwan University, Taiwan)*
As a follow-up implementation from the workshop on Sustainable Development Indicators conducted in Taiwan, SARCS invited for research proposals from Southeast Asia scientists focusing on global change and sustainable development indicators (SDI). Six projects had been awarded the funding.
- *Asian Aerosol Data Synthesis and Measurement Project (SEA PI: Jariya Boonjawat, SEA START RC, Thailand)*
The project was the proceeding of the agreement between the 3 regions namely the South Asia, Southeast Asia and Temperate East Asia regions to organize regional workshops on Asian aerosol data synthesis and measurement. Each region brought in their studies to meet and discuss in the Inter-Regional Cooperation workshop to be held in Kobe organized by TEACOM and the APN Secretariat. During this meeting the Southeast Asia Regional Workshop was drafted as the first activity along the scheduled time line.
AIACC Regional Study AS07: Southeast Asia Regional Vulnerability to Changing Water Resource and Extreme Hydrological Events due to Climate Change (PI: Anond Snidvongs, SEA START RC, Thailand)
The project used high-resolution climate and hydrological scenarios as the basis for assessing vulnerability of social and economic sectors in Mekong river basin to changing water regimes due to climate and land cover changes. This was going to be accomplished by an assessment team in concert with an expert workshop series that had been held.
- *AIACC Regional Study AS21: An Integrated Assessment of Climate Change Impacts, Adaptation, and Vulnerability in Watershed Areas (PI: Rodel Lasco, University of Philippines at Los Baños, Philippines)*
The project aimed to assess the impacts of climate change and associated land use and cover change on water resources, forest ecosystems, and social systems of watershed in Southeast Asia. The assessment was measured from change in biodiversity, carbon and water budgets, livelihood, health, demographic shifts, and changes in social structure resulting from climate and land use/cover change.
- *Sustainable Livelihoods and Biodiversity in the Uplands of Southeast Asia: a Multicultural assessment of Resilience, Risks and Opportunities (APN 2002-18, PI: Louis Lebel, Chiang Mai University, Thailand)*
The overall goal of this APN project was to explore the roles of biodiversity in sustaining the livelihoods of upland people in Asia.

Outcomes and Products

- Chinvano, S. 2002. AIACC Regional Study AS07: Southeast Asia Regional Vulnerability to Changing Water Resource and Extreme Hydrological Events due to Climate Change Progress report: period first half 2002. Southeast Asia START Regional Center Report No.9
- Snidvong, A., Utoomprurkporn, A., and Jarayabhand, S. 2002. Regional Coordination for Integrated Protection and Management of Coastal and Marine Environments in ASEAN: Phase I. Southeast Asia START Regional Center Report No.11
- Snidvongs, A., Choowaew, S., Chinvano, S. (in preparation). Impact of Climate Change on Water and Wetland resources in Mekong River Basin: Directions for Preparedness and Action. Southeast Asia START Regional Center Report
- UNEP 2002. Report of the UNEP/GEF/SCS and SEA START RC, GIS Workshop in Support of the UNEP/GEF Project "Reversing Environmental Degradation Trends in the South China Sea and Gulf of Thailand". UNEP/GEF/SCS/EW.1/3
- Effect of Atmospheric Aerosols on Solar Radiation, Cloud and Regional Climate (SEA PI: Jariya Boonjawat, SEA START RC, Thailand) The project aims to investigate the effect of aerosol in relation to solar radiation, cloud including regional climate. This investigation will promote education in atmospheric science and provide collaborative research opportunities.

(Only publications that involved START RC are reported here.)

Future Activities

- *Major Meetings and Workshops:*

- *11-14 February 2003*

The second International Symposium on the Management of Large Rivers for Fisheries: Sustaining Livelihoods and Biodiversity in the New Millennium, Phnom Penh, Cambodia.

- *17-21 March 2003*

20th Pacific Science Congress, Bangkok, Thailand. More details are available at www.20pscbangkok.org

- *22-24 March 2003.*

Meeting for an Integrated Regional Study of Monsoon Asia, Bangkok, Thailand. START with program sponsors (IGBP, WCRP, IHDP) will organize a meeting on integrated regional study of Monsoon Asia in the context of global environmental change.

- *24-27 March 2003.*

AIACC Asia Pacific Workshop, Bangkok, Thailand. The workshop will be hosted by the AS07 team discussing of progress made by AIACC studies of climate change impacts, solutions and future collaboration of the region.

- *New Research Projects:*

Integrated Regional Study (IRS) of Monsoon Asia. As the regional aspect of science for sustainability and of international global change research is becoming ever more important, it was agreed that “the substantive focus of much of the research and

development will have to be on the complex, dynamic interactions between nature and society, rather than on either the social or environmental sides of this interaction". And thus, integrated regional studies can represent a second major way to reconstruct the Earth System from its components and are complementary to the thematic project approach employed thus far in the International Global Change Programmes.

The Southeast Asia Carbon Pilot Project (PI: Chen Tung Arthur Chen, National Sun Yat-Sen University, Taiwan) The goal of the SARCS Carbon Pilot Project is to provide seed money in order to develop some aspects of the carbon cycle in Southeast Asia, including both its biogeochemical and human dimensions together with the interactions and feedbacks between them, by determining and explaining: 1. Patterns and Variability 2. Processes, Controls and Interactions 2. Future Dynamics of the Carbon Cycle.

Dynamics of Carbon Export to the Atmosphere and Oceans from Fluvial Systems of the Humid Tropics: Southeast Asia (PI: Jeffrey E. Richey, University of Washington, U.S.A.) This is a four-year project that has objectives to: 1.enhance the regional hydrological and material transport models 2. Conduct a field sampling campaign to determine the patterns and process dictated by modeling framework, and to provide independent data sets for model validation 3. Synthesize towards the understanding of the dynamic of river carbon.

START Regional Committee Members

The Regional Council for Southeast Asia consists of representatives from Government, Global Change Science Programmes, International Science Programmes, and Funding Agencies. The Council's responsibilities include engaging in science-policy dialogues and providing advice to better align regional science to regional needs and priorities. The Southeast Asia Regional Council for START comprises of:

Chao Han Liu, Chairman (National Central University, Chinese-Taipei)

Graeme Pearman (CSIRO Division of Atmospheric Research, Australia)

Haji Mohd Zakaria Haji Sarudin (Environment Unit, Brunei Darussalam)

Pum Vicheth (Ministry of Environment, Cambodia)

Sri Kaloka Probotosari (LAPAN, Indonesia)

Chow Kok Kee (Malaysian Meteorological Service, Malaysia)

Leoncio A. Amadore (PAGASA, Philippines)

Karina Gin (National University of Singapore)

Kasem Chunkao (Kasetsart University, Thailand)

Nguyen Huu Ninh (CERED, Viet Nam)

The Regional Scientific Committee is responsible for planning, implementing, and evaluating Global Change Science Programmes including capacity building and policy-support initiatives. At present, members of the committee are:

Chao Han Liu, Chair (SARCS Chairman, Chinese-Taipei)

Anond Snidvongs (SEA START RC Director, Thailand)

Louis Lebel (SARCS Science Coordinator, Thailand)

Sharifah Mastura (University Kebangsaan Malaysia)

Somporn Kamolsiripichaiorn (Chulalongkorn University, Thailand)

Eng Soon Chan (National University of Singapore)

Nguyen Hoang Tri (Center for Natural Resources & Environmental Studies, Viet Nam)

Jiunn-Rong Yeh (National Taiwan University, Chinese-Taipei)

Mark Howden (Resource Futures Program, CSE, Australia)

APN Liaison Officer Report for Temperate East Asia

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APN Liaison Officer Report for Temperate East Asia

Overview of work carried out on behalf of APN

- Contribution to APN newsletter:
 - Submitted quarterly reports about regional news for APN newsletters.
- Information exchange:
 - Distributed the announcement of APN call for proposals to individual scientists, corresponding institutes and TEACOM members.
 - Distributed APN newsletters, leaflets and other related information to individual scientists, corresponding institutes and TEACOM members.
- Workshops attended:
 - 973 Project Academic Workshop on Integrated Analysis of the Environmental Effects of Orderly Human Activities, 24-25 August 2002, Urumchi, Xinjiang Province, China.
 - The 10th TEACOM Committee meeting, 5-6 October 2002, Vladivostok, Russia.
 - APN/START Global Change Research Awareness Raising Symposium in Northeast Asia, 7-8 October 2002, Vladivostok, Russia.

Overview of Regional Activities

- *25-26 February 2002. International Workshop on East Asian Climate and Monsoon (IWEC). Seoul, Republic of Korea.*

This workshop was organized by KMS for the Memorial of Dr. Sung-Eui Moon, former president of the Korean Meteorological Society. The workshop provides a good opportunity to exchange advanced ideas and experiences on East Asian Monsoon and Climate as well as to cherish the memory of Dr. Sung-Eui Moon who made indelible contributions in research work on the East Asian Monsoon.
- *9 March 2002. First Coordinated Enhanced Observing Period (CEOP) Asia-Australia Monsoon Experiment (CAMP) International Science Panel (CISP) meeting at the Earth Observation Research Center (EORC) of the National Space Development Agency (NASDA). Tokyo, Japan.*

The CEOP is initially motivated by the World Climate Research Programme (WCRP) Global Energy and Water Cycle Experiment (GEWEX) international efforts focusing on the measurement, understanding and modelling of water and energy cycles within the climate system. CEOP has gained the interest of other international organizations outside of the WCRP community, as evidenced by the proposal for an integrated Global Water Cycle Observations (IGWCO) theme within the framework of the international Global Observing Strategy Partnership (IGOS-P), which has reaffirmed CEOP as “the first element of the IGWCO”. At this international meeting, the Status of whole CEOP and CAMP was introduced and a working group organization was discussed. *The CEOP Kick-off Meeting* was also

held at the same place from 6-8 March 2002. It was reaffirmed at the meeting that the meeting that CEOP, now in a build-up phase following an initial enhanced observation (EOP-1) from July through September 2001, will have two enhanced observing periods from October 2002 to December 2004.

The CEOP Science Steering Committee (SSC) addressed a number of important issues. These included finalizing the CEOP Data Policy statement; setting minimum standards for temporal sampling of CEOP Reference Site parameters (hourly); and setting a goal for the end of 2002 for the delivery of a CEOP seasonal data product (EOP-1).

- *8-14 April 2002. Exploratory search on establishing an observation station of the project "Predictive Study of Aridification in Northern China in Association with Life-supporting Environment Changes" (National key Basic Development Program of China).*

A working group of 6 including chief scientist of this national project, Prof. Congbin Fu, conducted ecological observations in Tongyu, Lishu and Qianan city of the west Jilin Province, and had initially chosen Tongyu city from the three. Two observation points will be set up that represent semi-arid agriculture and degraded grassland ecosystems. This observation station will provide first hand reference for the orderly human activity study and has been included in the network of CEOP motivated by Global Energy and Water Cycle Experiment (GEWEX), which is the only observation station ran by China out of 30 globally.

The Chinese government attaches great importance to this observation station and the Governor of Jilin Province, Honghu, expressed that they would give all-out support for this station linked with the development of the "Ecological Province" of Jilin Province and encourages enhancing international cooperation in this field.

- *18-21 August 2002. International Workshop on the Air-Land Interaction in Arid Areas and its Impact on Climate (IWALI). Dunhuang-City, Gansu Province, China.* This workshop was organized by the National Key Programme for Developing Basic Sciences: Research on the Formation Mechanism and Prediction Theory of Severe Climate Disasters in China, the Institute of Atmospheric Physics of the Chinese Academy of Sciences (IAP), the Cold and Arid Regions Environmental and Engineering Research Institute of the Chinese Academy of Sciences (CAREER/CAS), and was sponsored by the State Ministry of Science and Technology (SMST), and by the China National Sciences Foundation of China (NSFC). About 50 scientists working in the air-land interaction in arid and semi-arid areas from China, Korea, Japan, U.S.A, Germany, France, and The Netherlands attended this workshop.

The workshop had four components:

1. Observational study on the air-land interaction in arid and semi-arid areas;
2. The hydrological cycle, water resources, energy balance and biochemical processes;
3. The characteristics of boundary layer in arid and semi-arid areas; and
4. Land surface process, its parameterization and its impact on climate and monsoon.

The workshop provided a good opportunity to exchange advanced ideas and observed facts on land-surface processes and air-land interaction, hydrological cycle

and energy balance, especially in arid and semi-arid areas, to discuss and review recent studies on the impact of land-process and air-land interaction in arid and semi-arid areas on climate variability and climate change, and to promote the international cooperation of observation experiment on air-land interaction in arid and semi-arid areas.

- *24-25 August 2002. 973 Project Academic Workshop on Integrated Analysis of the Environmental Effects of Orderly Human Activities. Urumchi, Xinjiang Province, China.*

This workshop was organized by TEA Regional Center and sponsored by Xinjiang Meteorological Administration. Over 30 participants attended this workshop. As No. 8 sub-project of National Key Basic Research Development Programme: Predictive Study of Aridification in Northern China in Association with life-supporting Environment Change, this sub-project mainly focuses on the research of “Integrated Analysis of the Environmental Effects of Orderly Human Activities in Arid and Semi-arid Regions in Northern China and Recommendations of Policy-relevant Countermeasures”. This workshop summarized and exchanged research results of the past year and laid a course for the coming year. After the meeting, participants conducted field observations of the arid and semi-arid areas. Workshop proceedings were published in October 2002.

- *17-19 September 2002. EU-Japan Ad-Hoc Workshop on Climate Modeling. Yokohama, Japan.*

This workshop was held at the Institute for Global Change Research (IGCR); the main research site of the Frontier Research System for Global Change (FRSGC) located on the campus of the JAMSTEC Yokohama Institute for Earth Sciences (YES) and was jointly convened by senior researchers from both Japan and the EU. During the meeting researchers highlighted three important issues: scientific background of the modeling effect, modeling scenarios in the simulator and future modeling studies. Researchers also identified several important themes for collaboration: Monsoon, El Nino and Southern Oscillation (ENSO), Indian Ocean Dipole (IOD), teleconnections of IOD and ENSO, intra-seasonal disturbances and scale interactions, ocean data assimilation and seasonal forecast. The next EU-Japan meeting will convene in Paris, France.

- *6 October 2002, the 10th TEACOM meeting, Vladivostok, Russia*

The TEACOM meeting was held in Vladivostok with financial support from DGIS/Netherlands through the International START secretariat and in-kind support from the Institute of Marine Biology, Far East Branch of the Russian Academy of Sciences. The symposium was attended by the APN, the International START secretariat, TEACOM members, representatives from PAGES and LOICZ, and observers from Russia, Republic of Korea and Japan. This meeting was opened with a remark from Prof. Kasyanov, Chair of TEACOM, and followed by brief introductions about START and APN. In the morning session, progress reports of on-going TEA regional projects were presented by TEACOM members, which including the Regional Model Inter-comparison Project for Asia, Study on Aridification in Northern China, Russia Coast Ecosystem Study, LUTEA and Transition to an AIACC project in Mongolia, AIACC Project in Western China, etc. In the afternoon discussions centred on of the LOICZ East Asia Basins Project and

the development of a coastal Zone Research Proposal. This meeting also considered ways to improve the functioning of TEACOM. The Next TEACOM meeting will be held in either in Hong Kong or Japan.

- *APN/START Global Change Research Awareness Raising Symposium in Northern Asia (October 7-8, 2002) as part of the APN networking and capacity building programme.*

The symposium was held back-to-back with the TEACOM regional meeting and was organised by the APN in conjunction with the Institute of Marine Biology, Far East Branch of the Russian Academy of Sciences. The Symposium was attended by the APN, the International START secretariat, TEACOM members, representatives from PAGES and LOICZ, and observers from Russia, Republic of Korea and Japan. The APN/START Symposium addressed the need to recognize key problems in local/regional global change studies, focus areas under the impact of climate change and sea-level rise, and to bring together relevant Russian researchers and policy-makers as well as scientists from neighbouring countries in Northeast Asia and international organizations in order to summarize and develop our present knowledge and ideas on coastal Northeast Asian changes, to present summaries on climatic and environmental assessments, to discuss ways of sustainable development and adaptation strategies, and to develop a research proposal which was submitted to APN in the 2002 Call for Proposals. The Symposium was held as a part of the APN Networking and Capacity Building Programme.

Outcomes and Products

- *Publications*
 - The Proceedings of the RMIP for Asia, Phase I, from the workshop of APN Project #2001-05: Regional Modeling Inter-comparison Project (RMIP) for Asia (Phase 1), Kobe, Japan, Dec 11-14, 2001 was published in March 2002. About 20 papers on the 18-month inter-comparison result of the 10 participating models featured. The joint paper of the 18-month inter-comparison results has been submitted to Asia-BAMS for publication.
 - “Estimation of Agricultural Production Relations in the LUC Model for China” (ISBN 3-7045-0142-5) edited by Peter Albersen, Gunther Fischer, Michiel Keyzer and Laixiang Sun (published in April 2002) is a research report of the International Institute for Applied System Analysis (IIASA). This report represents the research results of the Land Use Change project using an intertemporal welfare-maximizing policy analysis model, especially the input-output relationships for agricultural crops in the models.
 - START recently published a regional synthesis book under the IGBP synthesis series, titled *Global-regional Linkages in the Earth System* (ISBN3-540-42403-2, Springer) edited by Peter Tyson, Roland Fuchs, Congbin Fu, Louis Lebel, A. P. Mitra, Eric Odada, John, Perry, Will Steffen and Hassan Virji. This book contains a chapter on East Asia. The book synthesizes current knowledge of the regional-global linkages in four regions to demonstrate that the study of environmental change on a regional scale can enhance understanding of global-scale environmental changes.

- Edited by Kuninori OTSUBO, CGER Report (CGER-I053-2002) “Study on the Process and Impact of Land-use Change in China—Final Report of the LU/GEC Second Phase (1998-2000)” (ISSN 1341-4356). This report consists of 24 papers. The first one introduces the highlights of the achievements of the LU/GEC Phase II. The remaining 23 papers are divided into 4 aspects: current and future food for China, land productivity in Northern and Northeastern China, ground water resource problems in Northern China, and changes in land use in the Lower Yangtze River basin.
- East Asia Basin: LOICZ Global Change Assessment and Synthesis of River Catchments-Coastal Sea Interaction and Human Dimensions. Eds. Hong G. H., H. Kremer, J. Pacyna, Chen-Tung Arthur Chen, H. Behrendt, W. Salomons and J. I. Marshall Crossland 2002, LOICZ Reports & Studies No. 26 , ii+262 pages, LOICZ IPO, Texel, The Netherlands.
- “Fundamental Issues Affecting Sustainability of the Mongolian Steppe”, edited by Togtohyn Chuluun and Dennis Ojima, was published in memory of Professor James E. Ellis who died on 14 March 2002 in an avalanche in the Colorado Rocky mountains. This book is the proceedings of the APN/START open symposium on “Change and Sustainability of Pastoral Land Use System in Temperate and Central Asia”, 28 June 1 July 2001, Ulaanbaatar, Mongolia.

● **Websites:**

- CEOP Internet site: <http://monsoon.t.u-tokyo.ac.jp/ceop/>
- CEOP Kick-off Meeting presentations site:
<http://monsoon.t.u-tokyo.ac.jp/ceop/meeting/kickoff/presentation/index.htm>
- CEOP Implementation Plan site: http://www.gewex.com/ceop/ceop_ip.pdf

Future Activities

- *Meeting calendar (2003)*

10-14 March, 8th APN Scientific Planning Group (SPG) Meeting and Inter Governmental Meeting (IGM), Hanoi, Viet Nam

17-21 March, 20th Pacific Science Congress, Bangkok, Thailand

28-30 April, APN 2002-02, RMIP Summary Workshop (Phase II), Shanghai, China

- *Common work*
TEA Regional Report to APN Newsletter

Information collection and changing

Translate Chinese Global Change Research Publication into English

Other activities required by APN

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APN Liaison Officers

According to the *Framework of the Asia Pacific Network for Global Change Research* adopted at the 7th IGM in Manila, Philippines, the role of APN Liaison Officers is to:

- Act as regional representatives in Oceania, South Asia, Southeast Asia, and Temperate East Asia; and
- Coordinate the flow of global change information

The APN Liaison Officers are:

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APN Liaison Officer Regional Reports (2002/2003) are available on APN website:
<http://www.apn.gr.jp/p-rep0200.htm>

Final 2001/2002 Financial Report

All figures in US\$

	Budget	Draft	Final
1. REVENUES	<u>1,878,000</u>	<u>1,726,100</u>	<u>1,726,400</u>
Ministry of the Environment of Japan	1,237,000	1,111,500	1,111,800
including, but not limited to:			
Networking and Capacity Building	<i>61,500</i>	<i>61,500</i>	
4 Projects with Multi-year Funding Commitment	<i>192,300</i>	<i>192,300</i>	
Asia-Pacific Environmental Innovation Strategy Project (APEIS)	<i>76,900</i>	<i>57,700</i>	
Hyogo Prefecture	230,800	230,800	230,800
NSF/USGCRP via START	308,750	328,400	328,400
AEON Group Environmental Foundation	15,400	15,400	15,400
Japan International Cooperation Agency (JICA)	38,460	40,000	40,000
2. EXPENDITURES	<u>1,877,850</u>	<u>1,726,100</u>	<u>1,726,400</u>
A. Scientific Activities	<u>1,420,250</u>	<u>1,307,300</u>	<u>1,297,400</u>
Funded Activities	1,227,200	1,141,950	1,135,400
Proposals Process including Contingency Fund	<i>687,000</i>	<i>705,100</i>	<i>689,000</i>
Climate Extremes	<i>48,000</i>	<i>46,800</i>	<i>46,800</i>
4 Projects with Multi-year Funding Commitment	<i>192,300</i>	<i>190,450</i>	<i>200,500</i>
Networking and Capacity Building	<i>61,500</i>		
Vegetation Recovery Workshop in Western Australia	<i>123,000</i>	<i>85,300</i>	<i>84,700</i>
EMECS 2001 Asian Forum		<i>21,700</i>	<i>21,800</i>
Asia-Pacific Environmental Innovation Strategy Project (APEIS)	<i>76,900</i>	<i>54,500</i>	<i>54,500</i>
JICA Training Course	<i>38,500</i>	<i>38,100</i>	<i>38,100</i>
IGM/SPG Meetings (incl. SC Meeting)	119,200	89,200	91,750
Liaison Officers	27,700	27,700	26,700
Publications	46,150	48,450	43,550
Newsletter	<i>13,100</i>	<i>13,300</i>	<i>13,300</i>
Homepage	<i>6,150</i>	<i>6,150</i>	<i>6,150</i>
Printing	<i>26,900</i>	<i>29,000</i>	<i>24,100</i>
B. Administrative Expenses	<u>457,600</u>	<u>418,800</u>	<u>429,000</u>
Travel Costs	61,500	53,300	51,500
Salaries and Related Charges	236,200	215,730	212,500
Salaries	<i>215,400</i>	<i>191,930</i>	<i>191,000</i>
Insurance	<i>20,800</i>	<i>23,800</i>	<i>21,500</i>
Communications	23,000	23,400	22,000
Others	136,900	126,370	143,000
General Office Expenses	<i>15,500</i>	<i>12,150</i>	<i>12,600</i>
Office Equipment	<i>46,000</i>	<i>36,900</i>	<i>40,450</i>
Interest on Loan	<i>10,800</i>	<i>9,200</i>	<i>7,950</i>
Tax	<i>57,700</i>	<i>63,450</i>	<i>77,700</i>
Bank Charges	<i>2,300</i>	<i>2,230</i>	<i>1,900</i>
Miscellaneous	<i>4,600</i>	<i>2,440</i>	<i>2,400</i>

Note: Exchange Rate: US\$ 1.00 = Yen 130

Draft 2002/2003 Financial Report

All figures in US\$
Exchange Rate: US\$ 1.00= JPYen 135

	Draft Budget	Draft Financial Report
1. REVENUES	<u>1,650,000</u>	<u>1,702,000</u>
MOEJ	1,100,000	1,100,400
Hyogo Prefecture	222,000	260,900
NOAA/USGCRP	328,400	340,270
2. EXPENDITURES	<u>1,650,000</u>	<u>1,668,500</u>
<u>A. Scientific Activities</u>	1,256,000	1,191,500
Funded Activities	1,112,000	1,052,100
Proposals Process including Contingency Fund	903,700	903,500
Partnership Activities/Inter-Regional Collaboration N & CB Programme	60,000	13,000
APEIS	37,000	41,000
Hyogo Prefecture Projects	111,100	94,600
IGM/SPG Meetings (incl. SC Meeting)	82,500	78,000
Liaison Officers	26,700	26,700
Publications	37,000	34,700
Newsletters	8,900	8,800
Homepage	5,900	5,900
Printing	22,200	20,000
<u>B. Administrative Expenses</u>	394,000	477,000
Travel Costs	44,450	35,000
Salaries and Related Charges	208,200	241,400
Salaries	186,000	208,200
Insurance	22,200	33,200
Communications	24,400	18,000
Others	117,000	116,190
General Office Expenses	11,000	14,600
Leasing of Office Equipment	33,000	28,600
Interest on Loan	8,900	7,400
Tax	61,000	62,900
Bank Charges	2,200	1,800
Miscellaneous	800	890
APN's Contribution to AIRIES Overheads		66,700
<u>Savings</u>		<u>33,500</u>

Draft 2002/2003 Financial Report: Funded Activities

Funded Activities		Budgeted ⁽¹⁾	Actual (US\$)			
		Total (US\$)	Total	MOE Japan	Hyogo Prefecture	USGCRP/NOAA
2002-01	Climate Extremes Indices and Indicators	40,000	40,000	0	0	40,000
2002-02	RCM Intercomparison	68,000	65,900	27,900	38,000	0
2002-03	Mountain Region	60,000	60,000	0	0	60,000
2002-04	Mega-Cities GHG	50,000	45,800	18,300	27,500	0
2002-05	Nutrient, Sediment & Carbon Fluxes	63,000	62,300	19,300	0	43,000
2002-06	Human Dimensions of Urbanisation and Sustainability	25,000	24,000	24,000	0	0
2002-07	Agriculture & Forestry	40,000	37,300	37,300	0	0
2002-08	PICs Global Change Negotiations	40,000	36,400	36,400	0	0
2002-09	Farming System Resilience	85,000	82,300	27,300	0	55,000
2002-10	Rice Wheat in Indo-Gangetic Plains	40,000	35,800	35,800	0	0
2002-11	20th Pacific Science Conference	30,000	27,300	27,300	0	0
2002-12	Water Resources in South Asia	60,000	60,000	0	0	60,000
2002-13	Phase III Dissemination Meeting	22,000	22,000	0	0	22,000
2002-14	Aerosol Properties & Surface UV Radiation	60,000	54,900	18,300	36,600	0
2002-15	GLOFS affected by Global Warming	77,340	74,340	37,000	0	37,340
2002-16	Atoll Island Change	22,930	22,930	0	0	22,930
2002-17	Island Landscapes	45,000	41,000	41,000	0	0
2002-18	Multi-Cultural Resilience, Risks & Opportunities	59,000	55,000	55,000	0	0
2002-NCB01	APN/START Global Change Research Awareness Raising Symposium in Northeast Asia, Vladivostok, Russia	59,300	18,200	18,200	0	0
2002-NCB02	APN/START Global Change Research Awareness Raising Symposium in Central Asia, Tashkent, Uzbekistan		26,800	26,800	0	0
	Contingency	27,000			0	0
	APN/UNU Round Table Session, Tokyo, Japan		4,300	4,300	0	0
	3rd World Water Forum, Kyoto/Osaka/Shiga, Japan		6,900	6,900	0	0
	SUBTOTAL I	973,570	903,500	461,100	102,100	340,270
APEIS IEM	Integrated Environmental Monitoring Workshop, Beijing, China	18,520	20,800	20,800	0	0
APEIS IEA	Integrated Environmental Assessment Workshop, New Delhi, India	18,520	18,300	18,300	0	0
	2nd APEIS Research Coordination Committee Meeting, Bangkok, Thailand		1,900	1,900	0	0
	SUBTOTAL II	37,040	41,000	41,000	0	0
2002-LUCC	LUCC Synthesis Workshop, Kobe, Japan	111,100	25,200	0	25,200	0
2002-VR2	2nd Vegetation Recovery Workshop, Kobe, Japan		49,400	0	49,400	0
2002-LUCC-VR-SYM	International Symposium on LUCC/Vegetation Recovery, Kobe, Japan		20,000	0	20,000	0
	SUBTOTAL III	111,100	94,600	0	94,600	0
	Partnership Activities / Inter-Regional Collaboration		13,000	13,000	0	0
	SUBTOTAL IV		13,000	13,000	0	0
	TOTAL (Subtotal I+II+III+IV)	1,121,710	1,052,100	515,100	196,700	340,270

Note: (1) The exchange rate used in the budget for 2002/2003 was US \$1 = Yen 135.

 Multi-year Projects, final year
 Ongoing Multi-year Projects

Proposed 2003/2004 Budget

all figures in US\$

1. REVENUES	2,065,470
Ministry of the Environment of Japan	1,428,000
including but not limited to:	
CAPaBLE	280,000
Asia-Pacific Environmental Innovation Strategy Project (APEIS)	40,000
Networking	24,000
Hyogo Prefecture	280,000
NOAA/USGCRP via START ⁽¹⁾	340,270
Environment Australia (AUS\$ 30,000) ⁽²⁾	17,200
2. EXPENDITURES	2,065,470
A. Scientific Activities	<u>1,527,200</u>
Funded Activities	1,367,600
Proposals Process including Contingency Fund ⁽³⁾	752,000
Partnership Activities/Inter-Regional Collaboration	14,400
CAPaBLE	537,200
- Capacity Enhancement: US\$ 280,000 (MOEJ)	
- Capacity Building: US\$ 240,000 (Hyogo Prefecture) and US\$ 17,200 (Environment Australia)	
Asia-Pacific Environmental Innovation Strategy Project (APEIS)	40,000
Networking	24,000
IGM/SPG Meetings (incl. SC Meeting)	88,000
Liaison Officers	28,800
Publications	42,800
Newsletter	9,600
Homepage ⁽⁴⁾	6,400
Printing	26,800

B. Administrative Expenses	<u>538,270</u>
Travel Costs	32,800
Salaries and Related Charges	282,000
Salaries	246,000
Insurance	36,000
Communications	26,400
Others	125,670
General Office Expenses	17,600
Leasing of Office Equipment	28,000
Interest on Loan	8,000
Consumption Tax	68,000
Bank Charges	2,070
Miscellaneous	2,000
APN's Contribution to AIRIES Overheads ⁽⁵⁾	71,400

Notes:

- (1) The exchange rate is set at US\$ 1 = JPYen 125 to avoid the risk of possible Yen depreciation.
- (2) The Australian contribution is to be used for CAPaBLE only. Exchange Rate: AU\$ 1.00 = JPYen 71.70
- (3) The remainder of US\$ 33,500 from FY 02/03 will be added to "Proposals Process including Contingency Fund".
- (4) Some savings may be invested for improvement of the website (search engine).
- (5) 5% of MOEJ's contribution to APN. Note, however, that this rate has yet to be confirmed.

Financial Resources Overview and 2002 Efforts

The 7th IGM stressed its concern that APN activities are expanding without increased resources. The financial situation of the APN in the fiscal year 2002/2003 stayed at about the same level since the 7th IGM in March 2003, with only two member countries (Japan and the USA) actively contributing to the APN. It should be stressed, however, that some member countries provided in-kind contributions to the APN.

Unfortunately, no other direct financial support other than from MOEJ and Hyogo Prefecture from Japan, as well as the USGCRP could be received.

Regarding the fiscal year 2003/2004 the Ministry of the Environment, Japan, will kindly increase its contribution by approximately US\$ 240,000. This money will be used for the new CAPaBLE programme.

The host prefecture of the APN Secretariat, the Hyogo Prefecture, Japan, will kindly continue its generous support of the APN. Approximately US\$ 240,000 will be available for APN activities, not to mention its in-kind support by providing office space, etc. to the APN Secretariat free of charge.

Furthermore, the APN can expect about the same amount of financial support (approximately US\$ 340,000) in the fiscal year 2003/2004 from the USGCRP.

The Commonwealth of Australia, acting through the Department of the Environment and Heritage (DoEH) and the Australian Greenhouse Office (AGO), is prepared to contribute AUS\$ 30,000 (approximately US\$ 18,200) to CAPaBLE in the fiscal year 2003/2004.

The Secretariat has also been in close contact with the national Focal Point of New Zealand as well as the Embassy of New Zealand in Japan, in order to seek some possibilities of support for the APN. These discussions are on-going.

Ad Hoc Resources Development Committee

The first informal meeting of the Ad Hoc Resources Development Committee convened on Wednesday, 12 March 2003.

Following an invitation from the APN Secretariat representatives from Australia, China, Japan, Malaysia, New Zealand, ROK, Sri Lanka, Thailand and the USA attended the meeting.

The Ad Hoc Committee considered a range of issues concerning the development of additional resources for APN.

It is agreed that it's principle objective is to investigate and mobilise funding resources.

Following discussions a number of action points were raised:

- Approach regional banks
- Develop an APN approach to GEF
- Private sector
- Foundations in Asia-Pacific region
- Membership development
- Develop an accounting of APN activities that includes all in-kind contributions
- Develop a profile of achievements of APN's first ten years
- Examine options of partnership developments
- Development of performance indicators for APN activities
- Annual report as a tool to showcase APN

Proposed interim arrangements:

- Membership including a Chair:
It is recommended that the committee should be open to every national Focal Point who is interested in the issue. After inviting all national Focal Points (or designee) to join the committee a chair will be decided from amongst this group. The chair will attend the Steering Committee
- To whom, and how to report?
The committee will act inter-sessionally through electronic means, and the chair will report to the Steering Committee (in December 2003) and IGM (March 2004).

*Proposals Process Overview

Report on Pre-Proposals

52 pre-proposals received

- Comprehensive List of Pre-proposals **SPG/8/05-Annex 1**.
- Number received is down **50%** on last year – proponents now understanding that this stage is optional.
- Just over **50%** of those who were **encouraged** to submit a full proposal did (see shaded areas of spreadsheet).
- Of the 20 pre-proposals submitted as full proposals – **33%** were short-listed for funding - see **SPG/8/05-2**
- The 7th SPG/IGM recommended that the success of the pre-proposals stage be investigated. In order to determine this, a questionnaire has been compiled which was approved at the Steering Committee meeting – See **SPG/8/05-03**. This questionnaire will be distributed to all previous pre-proponents and the results will be distributed to SPG members and national Focal Points.

Report on Full-Proposals

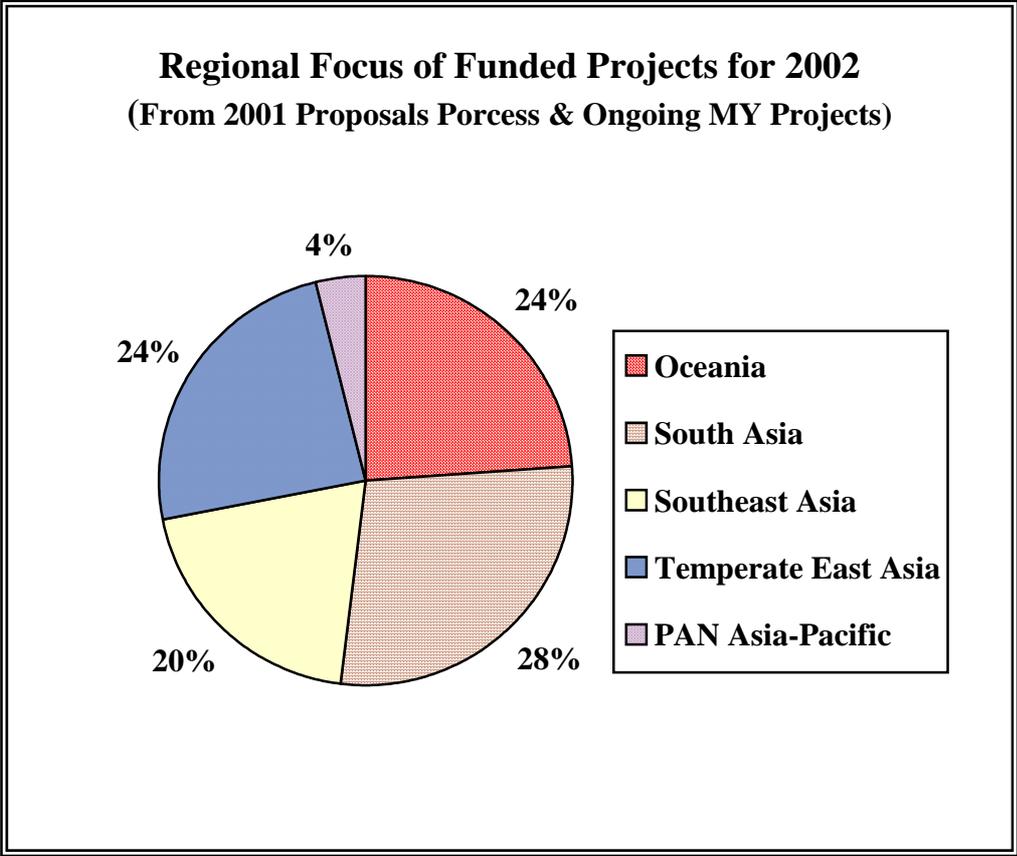
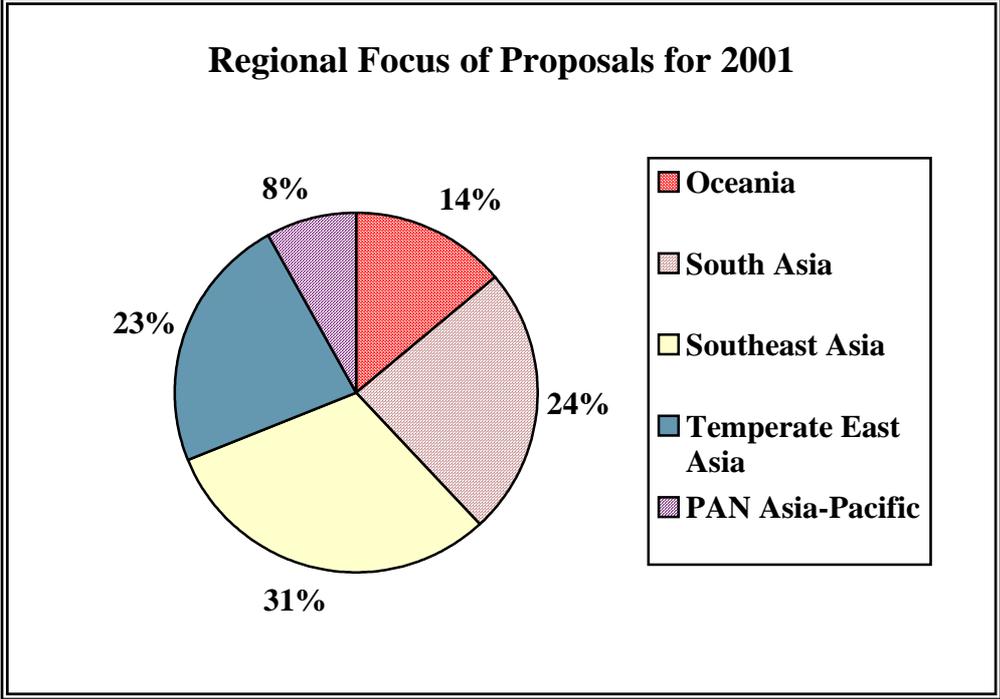
56 Full-proposals received

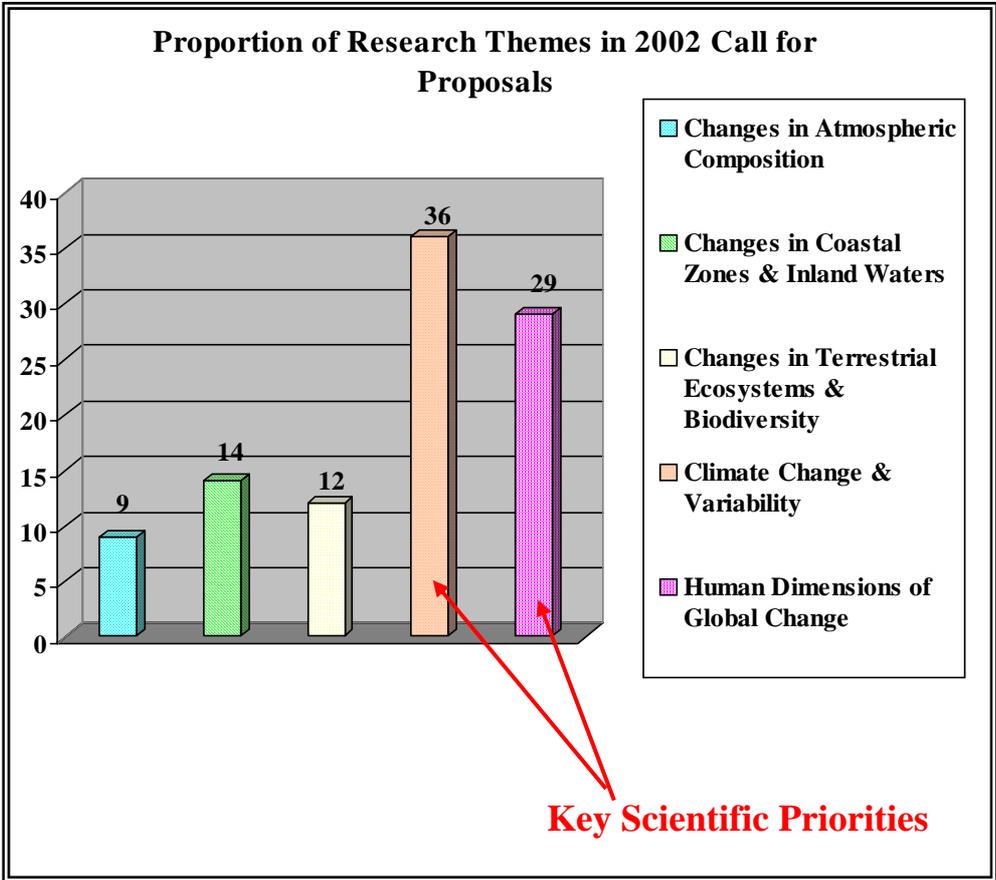
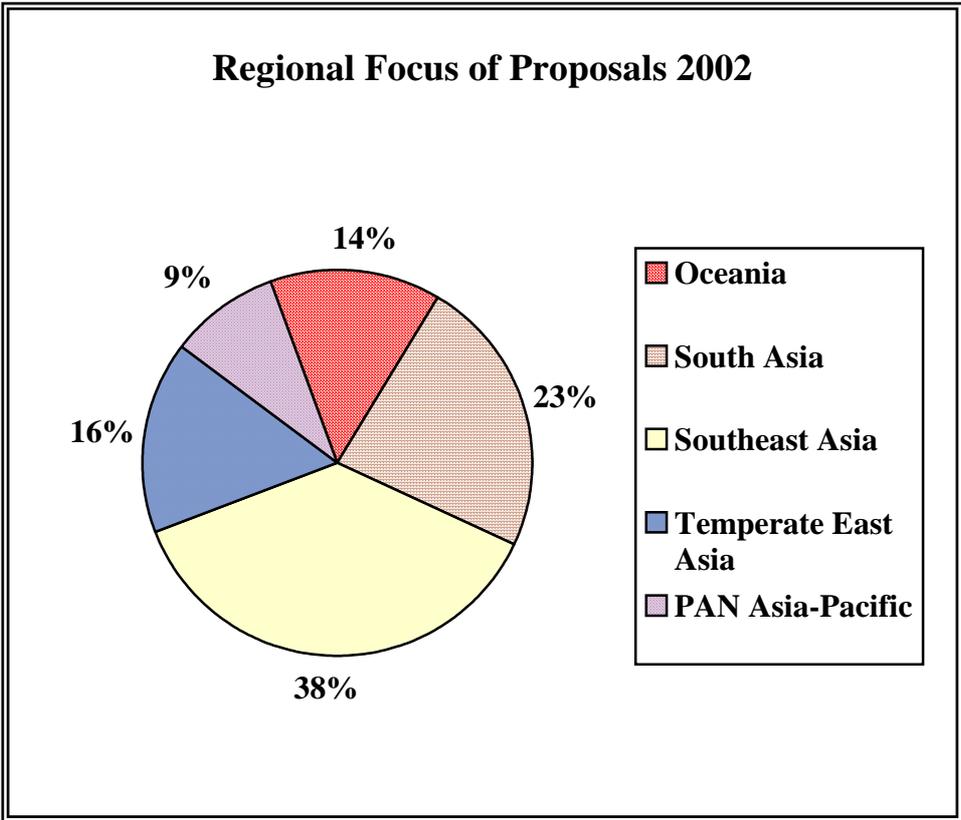
- Comprehensive List of Proposals **SPG/8/05-Annex 2**.
- As requested by the 7th SPG/IGM, the comprehensive list now contains sections on **co-sponsoring and other financial and in-kind contributions**.
- Number of proposals received is down **30%** on last year – general consensus is that more quality proposals are being received (this is also reflected in the fact that only one proposal was rejected at the Rapid Assessment Stage of the Review Process).
- Discussions were held at the Steering Committee meeting on how best to gauge “country participation” in the *Call for Proposals* process. From these discussions it became clear that:
 - Statistics compiled for country involvement (i.e. not project leader’s country) give a more realistic representation of country participation;
 - Since projects are selected in terms of region and 3-country participation, it may help to identify trends on a regional basis

APN regions are thus identified as follows:

Pan Asia-Pacific, Oceania, Southeast Asia, South Asia and Temperate East Asia

* Note that Annex 1 and other papers are not in these proceedings, for copies of these documents, please contact the APN Secretariat <info@apn.gr.jp>





APN Networking and Capacity Building Programme

2002/2003 Activities

APN/START Global Change Research Awareness Raising Symposium in Northeast Asia

There has already been APN capacity building efforts in Northeast Asia with one workshop in the Republic of Korea, and a symposium in Mongolia (both in 2001) and now in Vladivostok at the APN/START Global Change Awareness Raising Symposium in October 2002 (held back-to-back with the START-TEACOM meeting.) This symposium was organised following realisation at the 7th APN IGM and SPG meetings that Russian scientists have not yet lived up to their potential and taken an active - and indeed leading role - in APN projects and activities thus far.

At the symposium presentations were made by international organisations: APN, START, PAGES, and LOICZ. The following sessions were presented by Russian and other Northeast Asian country scientists on specific themes: climate variability, changes and impacts in Northeast Asia and the Northern Pacific; PAGES related research in Northeast Asia; and different aspects of global change research. There was also an evening poster session where local scientists presented research activities.

The afternoon of the final day was devoted to proposal development. There were two groups: 1) paleoenvironment, and 2) coastal zones. The paleo group disbanded after a lack of leadership and international involvement, combined with no clear research direction. Group two, on the other hand, submitted a proposal to APN to be considered for funding in 2003/04. (Ref: 2002-56. Climate variability and human activities in relation to Northeast Asian land-ocean interactions and their implication for coastal zone management). This proposal is currently under review.

¹ APN/START International Workshop on Global Change, Sustainable Development and Environmental Management in Central Asia

Following approval at the last IGM in Manila, APN and START began preparations for a Central Asia workshop. Objectives of the workshop in Uzbekistan are:

- To raise awareness of APN and the opportunities it presents for cooperation in regional collaboration in research and capacity building;
- To raise awareness of START and the global change science programmes (IGBP, IHDP, DIVERSITAS, and WCRP) and explore potential linkages to the scientific community of Central Asia;
- To review the status of global change activities in Central Asia, and identify priority knowledge gaps that may serve as the basis of future research and capacity building activities in the region; and
- To help define a relevant regional agenda focused on global environmental change issues, and identify potential funding sources for future projects;

Topics to be discussed include issues relating to:

- Climate change;

¹ 26-28 March 2003 Workshop has been postponed. Secretariat will circulate re-scheduled date in due course.

- Aridification and desertification;
- Water resources change and land management;
- Regional ecosystems change;
- Socio-economic drivers and impacts of regional environmental change, and environmental management practices; and
- Information needs of sustainable development and environment protection decision makers.

Expected participants include representatives of regional and national research institutes and universities of Kazakhstan, Kyrgyzstan, Tajikistan, and the Republic of Uzbekistan, representing the natural and social sciences; national policy-makers dealing with global change and related sustainable development issues; representatives of APN, START, MEDIAS-France, and other gc research programmes; other international climate change scientists; and representatives of potential funding agencies.

Future Activities

Capacity building and networking is a very important activity. However, it has become apparent that APN needs a more *systematic approach*. Regional workshops have mixed success, and there needs to be more structure and follow-up. Furthermore, in some targeted countries it has become apparent that the science is there, but in many cases regional cooperation may well be hampered by a limited English ability and/or lack of international experience and contacts. There has also been a disappointing low show of young scientists at some of these meetings.

The Secretariat provided an overview of the 2002/2003 Networking and Capacity Building Programme. The SPG meeting agreed that holding “awareness raising symposia” should not be seen as the highest priority and that future APN networking and capacity building activities might best incorporate the following:

- *Networking expansion through the Pacific Island Summit (being held in May) and through the APN Liaison Officers;*
- *Enrichment of the APN website as a tool for networking support and expansion;*
- *Further encouragement of networking of adjacent countries; and*
- *Linking with the “Scientific Capacity Building/Enhancement for Sustainable Development in Developing Countries” (CAPaBLE) programme for a more systematic development of the APN capacity building programme and its activities.*

At the SPG meeting, the Millennium Ecosystem Assessment indicated a willingness to collaborate with APN in the upcoming APN/START Central Asian workshop. Opportunities for EU/APN partnerships in Central Asian activities that APN may undertake should be considered. Furthermore, the SPG agreed that the APN continue its efforts on inter-regional networking with the EU. It was also mentioned that SPG members are encouraged to continue to promote APN.

For the future, it was agreed that Capacity Building activities should be conducted in a more systematic manner. Networking should also be continued as an important activity of APN.

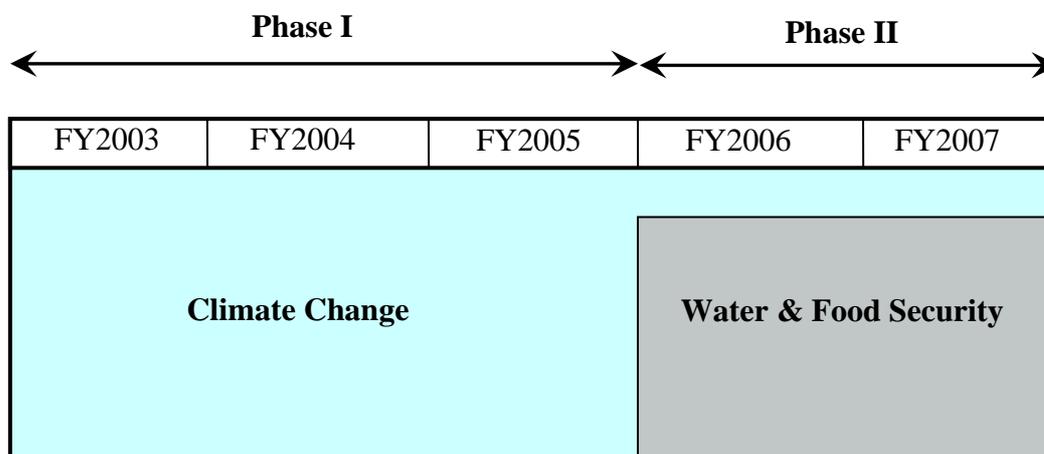
**Scientific Capacity Building/Enhancement
for Sustainable Development in Developing Countries
- CAPaBLE -
(IGM Endorsed Proposal)**

**Ministry of the Environment of Japan and Hyogo Prefecture
in collaboration with the APN Secretariat**

1. Objectives of the Programme

The Ministry of the Environment of Japan and Hyogo Prefecture are proposing to launch a new Programme - Scientific Capacity Building/Enhancement for Sustainable Development - or 'CAPaBLE,' under the framework of the APN from FY2003. The objective of this new 5-year Programme is to develop and enhance scientific capacity in developing countries to improve their decision-making in the target areas related to climate change and water and food security that are directly linked to their sustainable development. In Phase I of this new Programme, i.e. from FY2003-2005 (and continued through FY2007) the focus will be on Climate Change. Water & Food Security will be a focus of Phase II of the Programme and is expected to be implemented through FY2006-2007. This document will focus mainly on Phase I implementation of the Programme. Phase II will be developed at a later stage during the Programme.

The basic timeframe of the Programme is outlined below:



The **CAPaBLE** Programme is a concrete regional initiative to realize parts 107 to 114 of the Plan of Implementation for the World Summit on Sustainable Development (WSSD), and has been registered as a WSSD Type II Partnership/Initiative. *Please refer to Appendix 1 (page 10) for a detailed description of Parts 107 through 114 of the Implementation Plan.*

Of particular relevance in the WSSD Plan of Implementation to the proposed Programme is part 111:

111. Establish regular channels between policy makers and the scientific community for requesting and receiving science and technology advice for the implementation of Agenda 21, and create and strengthen networks for science and education for

sustainable development, at all levels, with the aim of sharing knowledge, experiences and best practices, and building scientific capacities, particularly in developing countries.

The objectives of **CAPaBLE** are expected to be achieved through a two-track approach, i.e.

- **Capacity building for young and/or aspiring scientists, and**
- **Capacity enhancement for experienced leading scientists.**

Proposed activities include:

Capacity Building

- Targeting specific countries
- Targeting specific topics
- Partnership activities with other networks, programmes, APN member & approved countries and other interested stakeholders
- Dissemination for policy-makers and civil society

Capacity Enhancement

- Comprehensive Research Activities planned and implemented by leading developing country scientists targeting specific topics

Programme End-Product

- An APN publication as an end-product (this may be in the form of an edited book that will bring together the activities and outcomes that resulted from this Programme).

The proposed Capacity Building activities could be designed by integrating with the current APN Networking and Capacity Building Programme so as to conduct these activities in a more strategic and efficient manner.

The final decision to launch this Programme will be subject to the approval of the Inter-governmental Meeting of the APN. The Steering Committee (SC), held on 9-10 December 2002, intensively considered the preliminary draft proposal, and strongly supported this initiative. The comments and suggestions by the SC have already been reflected in this elaborated proposal.

2. Expected Results

Expected results include:

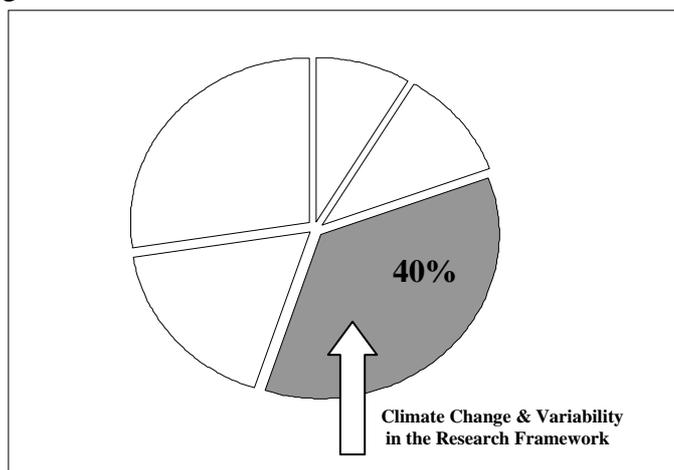
- Capacity enhancement of leading researchers in developing countries to produce comprehensive scientific information on climate change impacts, vulnerabilities, adaptation and mitigation opportunities which are made available for policy makers in developing countries and contribute to international scientific exercises such as the Fourth Assessment Report of the IPCC due in 2007.
- Capacity building of young and/or aspiring scientists through enhanced sharing of knowledge, experience and scientific information on quality data collection and analysis, impacts, vulnerability, adaptation and mitigation to climate change within the Asia-Pacific region and between regions in the world.
- Improvement of informed decision-making in developing countries by

disseminating the outcomes of the research activities to policy makers, and by enhancing collaboration between scientists and policy makers.

3. Review of Climate Change Research Activities by the APN

The highest priority goal of the APN is to “support regional cooperation in global change research on issues particularly relevant to the region.” In the APN Strategic Plan, one of the key activities to be conducted under this goal is the systematic identification of Key Scientific Priorities (KSPs) for the region.

With this in mind, at the 5th APN Inter-Governmental Meeting in 2000, Climate Change & Variability was identified as one of two KSPs (Human Dimensions of Global Change being the other). Climate Change and Variability has continued to be an APN KSP with statistics that confirm its relevance. For example, between 1998 - when APN first funded projects - and 2002/03, over one-third of APN funded projects have or have had a Climate Change & Variability theme.



Indeed almost 40% of 2002/03 APN funded projects covered this theme. This leaves Climate Change & Variability with the most hits out of APN’s five research themes.

Some recent successful climate-change projects are highlighted below:

98003, 99013, 2001-01, 2002-01

Indices and Indicators for Monitoring Trends of Climate Extremes

99012, 2001-12

The Network System for Monitoring and Predicting ENSO Event and Sea Temperature structure of the Warm Pool in the Western Pacific Ocean

2000-04, 2001-10

APN Workshop on Climate Variability and Trends in Oceania

2000-05, 2001-05, 2002-02

Regional Climate Model Intercomparison for Asia

2000-09 APN/SURVAS/LOICZ Joint Conference on Coastal Impacts of Climate and Adaptation

2000-11 Recent Sea-level Change and Coastal Management Implications in Oceania

2000-15 Policy Design of Climate Change Collaboration in Northern Asia: Possible Options and Constraints for Co-op. between Russia, Japan, China, Republic of Korea

4. Description of Expected Activities under the CAPaBLE Programme

In this Programme, scientific capacity building and capacity enhancement of developing countries will be achieved, in particular, through:

- Planning and implementation of selected comprehensive research projects by leading developing country scientists.
- Participation of developing country experts in inter-regional, regional, sub-regional and local workshops and other activities organized in collaboration with APN NFPs and other regional networks and programmes.
- Participation of policy makers in meetings/workshops/seminars for outreach of the outcomes.

In its first phase (FY2003-2005), all of the activities will focus on climate change (and climate change related issues) because it is considered as one of the biggest threats to sustainable development and APN activities have already created a sound research capacity on climate change enabling the proposed activities.

Descriptions of the above-mentioned activities are proposed in the following:

(a) Comprehensive Research Projects for Scientific Capacity Enhancement

¹This activity aims to produce scientifically excellent research outcomes that could be highly appreciated by international science communities and thus contribute to the development of the fourth assessment report of the IPCC and informed decision-making of the countries in the region. Planning and implementation of comprehensive research projects will offer opportunities for further enhancing scientific capacity of developing country leading scientists. The projects will last for 30 months, and will be planned and implemented primarily by developing country scientists with the assistance of experienced developed country scientists, as appropriate.

In support of the IPCC, the IPCC Third Assessment Report (TAR) clearly states that further research is required to strengthen future assessments and to reduce uncertainties in order to assure that sufficient information is available for policymaking about responses to possible consequences of climate change, including research in and by developing countries. TAR also suggests high priorities for further narrowing gaps between current knowledge and policy-making needs some of which are identified as specifically relevant to developing countries.

Two research topics are proposed from the suggested research priorities in TAR, taking into account the needs of policy-makers and relevance to Asia-Pacific developing countries. The proposed topics are:

- I. *Integrated assessment of climate change impacts, vulnerabilities and adaptation opportunities in vulnerable countries/areas such as the small island developing states, mountainous states and regions, and highly populated coastal areas with low-altitude*

¹ Although contribution to the development of the 4th IPCC report, which is due for completion in 2007, would be an integral part of the comprehensive projects of Phase I & II, priority will not only be given to research but will also be given to Partnerships and Capacity Building Activities as shown in sections 4(b) and 4(c).

II. Integrated model development and analysis of the potential of mitigation options and sustainable development opportunities

The first proposed topic is taken from the suggestions in the Summary for Policymakers of TAR WGII. These areas are considered extremely vulnerable and are already being affected by sea-level rise and melting of glaciers due to climate change. An integrated assessment of impacts, vulnerabilities and adaptation is highly expected to investigate interactions between components of natural and human systems and the consequences of different policy decisions.

The second proposed topic is taken from the suggestions in the Summary for Policymakers of TAR WGIII. Inclusion of sustainable development context in evaluating climate mitigation options is considered to be particularly important for developing countries. Research activities under this topic are highly expected to address this issue through a comprehensive study including the development of climate-socioeconomic integrated models, emissions and other data collection, and assessment of mitigation opportunities fully incorporating developing countries circumstances.

(b) Joint Activities with Networks, Global Change Programmes, Member & Approved Countries and Others for Scientific Capacity Building

This activity aims to provide researchers (in particular, young and/or aspiring scientists) with opportunities for scientific capacity building on climate change. An opportunity to develop joint initiatives will be explored by APN in collaboration with the APN Focal Points/SPG members/Liaison Officers and other regional research networks (such as IAI, ENRICH, MEDIAS, START) and the Global Change Science Programmes (DIVERSITAS, IGBP, IHDP, WCRP). All countries will benefit from the capacity building activities in the exchange of information and experiences as well as in seeking opportunities for joint research activities

The following preliminary proposal would be elaborated at the Programme Development Workshop to recommend concrete proposals of the capacity building activities and their selection procedure.

Mode of the capacity building activities may include, but not be limited to:

- (i) Regional Capacity Building Workshops/Seminars
- (ii) Partnership Activities with Other Regional Research Networks
- (iii) Country Capacity Building Activities (including capacity building/training workshops in local language).

Options for these activities might include:

- (i) Regional Capacity Building Workshops/Seminars
 - Programme Development Workshop to develop a framework of systematic capacity building activities (see Section 5)
 - Research scoping regional workshops
- (ii) Partnership Activities with Other Regional Research Networks
 - Joint APN/IAI activities targeting issues relating to climate change and Pacific Small Island developing states

- Joint activities with other regional research networks targeting issues relating to climate change.
- (iii) Country Capacity Building Activities (including capacity building/training workshops in local language).
- Training on quality data collection and analysis for improving national capacity in QA/QC of greenhouse gas emissions/removals measurements and inventory development
 - Awareness raising symposia in SPG/IGM host countries between SPG and IGM meetings

These capacity building activities should be separated from the regular call for proposals. Besides the APN Secretariat, the APN national Focal Points, in consultation with SPG members and Liaison Officers, are eligible for proposing the capacity building activities. The APN Secretariat will invite proposals from the APN National Focal Points (in consultation with the SPG members and Liaison Officers) and fund selected activities according to the new criteria to be developed for these activities. APN Secretariat will also organise capacity building activities with other interested partners/stakeholders. Proponents are highly encouraged to provide contributions for their proposed activities including co-financing and in-kind support in order to maximize the benefit of APN funding and enhance the sense of ownership.

(c) Synthesis and Dissemination Activities for Awareness Enhancement of Policy-makers and Civil Society

The APN Secretariat will explore every opportunity to provide policy makers and civil society with the outcomes of relevant APN activities for improved informed decision making through bridging the APN scientific activities and policy making process. In this regard, existing fora in which Asia-Pacific policy makers are participating, such as the Pacific Islands Forum (PIF), the Environmental Congress for Asia and the Pacific (ECO ASIA), the Asia-Pacific Seminar on Climate Change, COP/SBSTA of UNFCCC, IPCC workshops, etc. should be used as a vehicle for this purpose at the maximum level. The APN Secretariat is encouraged to approach these fora to report the results of APN activities to policy-makers and other stakeholders.

5. Requirements and Inclusion Procedure for CAPaBLE Programme

The following proposed procedures and requirements are for the APN Secretariat and the Comprehensive Research Projects. Concrete procedures and requirements for the Capacity Building activities would be elaborated at the Programme Development Workshop.

- **Research activities under the CAPaBLE Programme should:**
 - ◊ Meet the description outlined in Section 4.
- **The APN Secretariat should:**
 - ◊ Launch, in FY2003 (mid-April), a 2-month call for comprehensive research project proposals (for the Capacity Enhancement element of CAPaBLE). The project description(s) and main criteria will be elaborated and agreed upon at

the SPG/IGM meetings in March, 2003. The establishment of a “Programme Development Workshop” and its mandate should also be agreed at the SPG/IGM meetings.

- ◇ Organize, in FY2003 (early-May), a “Programme Development (PD) Workshop” with the participation of interested member countries, SPG members and other partners (e.g. IAI, START, GC Programmes etc.), to recommend to the member countries the implementation mechanism of the Programme, and selection criteria for and prioritized options of joint capacity building activities under the Programme. The implementation mechanism of the capacity enhancement activities will also be discussed at the PD workshop.
- ◇ Conduct, in FY2003 (mid-June/July), an SPG email review to select recommended comprehensive research projects to the member countries. One project from each research topic (e.g. two projects in total) will be selected within the budget available.
- ◇ Circulate, in FY2003 (June) PD workshop recommendations to the member countries (national focal points) for seeking their endorsement.
- ◇ Circulate, in FY2003 (August), the recommendations of the SPG email review to the member countries (national focal points) for seeking their endorsement.
- ◇ Explore synthesis and dissemination opportunities to outreach the outcomes of the APN activities to policy makers and civil society.
- ◇ Organize a climate change synthesis activity focused in the AP region with timing and focus of the synthesis being carefully considered according to the agenda of IPCC toward its Fourth Assessment report.
- ◇ Seek opportunities to hold inter-regional joint capacity building workshops in collaboration with other regional research networks on specific topics such as climate change impacts and vulnerability.

- **The Comprehensive Research Projects should:**

- ◇ Be reviewed and selected, through email review, by relevant SPG members and external experts as appropriate according to the project topics, selection criteria, and basic budget allocation agreed at the IGM in 2003, and established with the endorsement of the member countries.
- ◇ Be only composed of leading developing country scientists from different countries (with the assistance of developed country scientists, as appropriate).
- ◇ Be led by developing country experienced scientists who meet at least one of the following criteria:
 - Contribution to the relevant IPCC reports and technical papers as Coordinating Lead Author (CLA) and/or Lead Author (LA), but preferably CLA;
 - Involvement in established international research programmes such as DIVERSITAS, IGBP, IHDP and WCRP, and;
 - Have experience in planning, implementing and coordinating international research projects in the relevant field.
- ◇ No duplication with currently implemented APN-funded projects
- ◇ Have, in their project proposal, a clear description of policy-relevant questions to be answered, organizational arrangements of the research team, and publication and dissemination plan in addition to the currently required components.

8. Coordination and Implementation Mechanism

- Current APN mechanism (i.e. IGM, SPG, SC) will basically be used to coordinate and implement the Programme.
- Additional mechanisms (*such as the establishment of an external advisory group for the Comprehensive Research Projects, and a capacity building coordination opportunity which could be a continuation of the Programme Development Workshop*) may be developed at the Programme Development Workshop taking into account its characteristics that differ from current activities.
- In addition to the organized activities developed under this Programme, a mechanism should be created in which member countries could easily contribute including a co-funding mechanism. An example of such co-funding mechanism may include the provision of a subsidy (say 50%) with selected Country Capacity Building Activities (meaning remaining 50% is co-funded by the proponents).
- **If possible**, the additional administrative costs to manage this Programme should be kept to a minimum through the maximum utilization of existing APN mechanism and Secretariat resources.

9. Programme Budget

- The budget for the first year, i.e. from April 2003 to March 2004, is preliminarily pledged from the Ministry of the Environment of Japan and Hyogo Prefecture and is expected to be in the region of 60 Million Japanese Yen (US\$480,000).
(Note)
 1. 1 US\$ = ca. 125 Japanese Yen
 2. Total contribution from MOEJ to the APN is expected to increase from 148.5M JY (US\$1.19M) in FY2002 to about 178.4M JY (US\$1.43M), in FY2003, while that from Hyogo Prefecture is expected to remain at the same level.
- As discussed at the Scientific Steering Committee Meeting, held in Malaysia, December 2002, previous APN Capacity Building activities (carried out through the Networking & Capacity Building Programme) can be linked with CAPaBLE for a more systematic development of APN Capacity Building activities. With this in mind, a further 6M Japanese Yen (US\$48,000) will be available for the CAPaBLE Programme in FY2003.
- The Australian Greenhouse Office and Environment Australia has kindly committed to contributing AUS\$30,000 (US\$18,000) for this Programme.
- The government of New Zealand has kindly committed to contributing NZ\$10,000 (US\$6,100) for this Programme (announced at the 8th IGM by New Zealand FP).

The financial and in-kind commitments and contributions from other APN member (& approved) countries and other interested partners/stakeholders are also highly appreciated. Co-funding to the Country Capacity Building Activities might be a good entry for such contributions.

Appendix 1

Parts 107-114 of the Plan of Implementation for WSSD

107. Assist developing countries in building capacity to access a larger share of multilateral and global research and development programmes. In this regard, strengthen and, where appropriate, create centres for sustainable development in developing countries.

108. Build greater capacity in science and technology for sustainable development, with action to improve collaboration and partnerships on research and development and their widespread application among research institutions, universities, the private sector, governments, NGOs and networks, as well as between and among scientists and academics of developing and developed countries, and in this regard encourage networking with and between centres of scientific excellence in developing countries.

109. Improve policy and decision-making at all levels through, inter alia, improved collaboration between natural and social scientists, and between scientists and policy makers, including through urgent actions at all levels to:

(a) Increase the use of scientific knowledge and technology, and increase the beneficial use of local and indigenous knowledge in a manner respectful of the holders of that knowledge and consistent with national law;

(b) Make greater use of integrated scientific assessments, risk assessments and interdisciplinary and intersectoral approaches;

(c) Continue to support and collaborate with international scientific assessments supporting decision-making, including the Intergovernmental Panel on Climate Change, with the broad participation of developing country experts;

(d) Assist developing countries in developing and implementing science and technology policies;

(e) Establish partnerships between scientific, public and private institutions, and by integrating scientists' advice into decision-making bodies in order to ensure a greater role for science, technology development and engineering sectors;

(f) Promote and improve science-based decision-making and reaffirm the precautionary approach as set out in principle 15 of the Rio Declaration on Environment and Development, which states: "In order to protect the environment, the precautionary approach shall be widely applied by States according to their capabilities. Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation."

110. Assist developing countries, through international cooperation, in enhancing their capacity in their efforts to address issues pertaining to environmental protection including in their formulation and implementation of policies for environmental management and protection, including through urgent actions at all levels to:

- (a) Improve their use of science and technology for environmental monitoring, assessment models, accurate databases and integrated information systems;
- (b) Promote and, where appropriate, improve their use of satellite technologies for quality data collection, verification and updating, and further improvement of aerial and ground-based observations, in support of their efforts to collect quality, accurate, long-term, consistent and reliable data;
- (c) Set up and, where appropriate, further develop national statistical services capable of providing sound data on science education and research and development activities that are necessary for effective science and technology policy-making.

111. Establish regular channels between policy makers and the scientific community for requesting and receiving science and technology advice for the implementation of Agenda 21, and create and strengthen networks for science and education for sustainable development, at all levels, with the aim of sharing knowledge, experience and best practices and building scientific capacities, particularly in developing countries.

112. Use information and communication technologies, where appropriate, as tools to increase the frequency of communication and the sharing of experience and knowledge, and to improve the quality of and access to information and communications technology in all countries, building on the work facilitated by the United Nations Information and Communications Technology Task Force and the efforts of other relevant international and regional forums.

113. Support publicly funded research and development entities to engage in strategic alliances for the purpose of enhancing research and development to achieve cleaner production and product technologies, through, inter alia, the mobilization from all sources of adequate financial and technical resources, including new and additional resources, and encourage the transfer and diffusion of those technologies, in particular to developing countries.

114. Examine issues of global public interest through open, transparent and inclusive workshops to promote a better public understanding of such questions.

Appendix 2

SPG/IGM Meeting and PD Workshop Mandates

SPG/IGM Mandate

- Endorse the Programme Objectives, Components and Main Timeline for Phase I
- Endorse the Research Topics of the Comprehensive Research Projects
- Endorse main Selection Criteria for the Comprehensive Research Projects and main mechanisms for implementation
- Endorse the Basic Budget Allocation for Year 1 (amount of funding for comprehensive research projects, joint capacity building activities such as workshops/seminars etc., and Secretariat costs)
- Endorse the Programme Development Workshop and its mandate
- Discuss a co-funding mechanism

Steering Committee Mandate

- Establish a “Call for Proposals” for the Comprehensive Research Projects (CRPs) based on the criteria set in the CAPaBLE proposal.
- According to the criteria set in the CAPaBLE proposal, the steering committee should:
 - Establish a formal review process;
 - Select suitable SPG and external reviewers, as appropriate;
 - Establish guidelines for the reviewer.

Programme Development Workshop Mandate (2-3 days)

- Develop and recommend a Programme Mechanism for implementation of all activities (*See Sections 4(a), 4(b) and 4(c)*) that would include selection criteria for *Sections 4(b) and 4 (c)***, review, coordination and monitoring processes, financial guidelines (current APN financial guidelines could be used) etc.
- Elaborate and recommend priority joint capacity building activities and their selection procedure
- Develop and recommend Full Timeline for Phase I
- Develop and recommend co-funding mechanism(s)

** Main selection criteria for 4(a) will be a mandate for the IGM

Based on these recommendations, endorsement by member countries will be sought by mail

Appendix 3

SPG Recommendations for the CAPaBLE Programme

The SPG considered the “Scientific Capacity Building/Enhancement for Sustainable Development in Developing Countries” (CAPaBLE) Programme an excellent opportunity that is compatible with APN objectives and could facilitate APN’s approach to capacity enhancement and capacity building in a more systematic manner. The SPG congratulated the Ministry of the Environment of Japan on this exciting proposal.

The SPG noted that an element of flexibility and dynamism in the system will be required because of the newness of the programme and, although the current APN mechanism will be used to implement this programme, revisions must be made to these guidelines to accommodate both the objectives of APN and the objectives of CAPaBLE. It was also suggested that consideration be given to funding relevant infrastructure that may be required to undertake funded activities. Furthermore, the SPG recommended that the Scientific Steering Committee develop a streamlined “Call for Proposals” for the Comprehensive Research Projects. When doing so, the Steering Committee should also streamline the review process, the selection of reviewers and the guidelines for those reviewers involved in the review process, as appropriate.

The SPG highlighted the importance of support from developed country experts in aiding the activities in the developing country-led projects, as appropriate. The SPG recommended that the CAPaBLE Programme become an integral activity of APN.

APN/IAI Joint Activity

Following 7th IGM/SPG approval, the APN Secretariat is exploring future APN-IAI collaboration with the IAI Directorate. In discussions held thus far, the planning of a joint APN-IAI Inter-Regional Workshop on a common theme for the regions seems appropriate.

In January 2003, an APN Secretariat representative attended the IAI-IGBP and IAI-Scientific Advisory Committee (SAC) meetings in Mendoza, Argentina. At the SAC meeting a brief presentation was made on APN activities and there were further discussions on this joint activity between APN and IAI.

In consultation with the APN Steering Committee, the APN Secretariat proposed the following topic:

- **ENSO - Climate Extremes**

For an ENSO activity, the focus would be on the impacts of ENSO from a human dimensions perspective and/or an agronomy-related theme.

The steering committee agreed that an ENSO-related activity would be a natural interaction for APN and IAI.

SAC members welcomed the prospect of a joint activity and agreed that *ENSO – climate extremes* would be a suitable topic, but the IAI Directorate and the APN Secretariat should also consider other topics as well.

It was also explained to SAC members that when considering suitable topics we will have to keep in mind that APN funding is most likely to come through the CAPaBLE Programme, and thus should have particular relevance to climate change.

The SPG recommended to further explore with the IAI a future joint activity, and that a climate change-related activity be considered in this respect.

Asia-Pacific Environmental Innovation Strategy Project (APEIS)

1. History

APN's role in APEIS was to be limited to integrated environmental monitoring [IEM] and assessment [IEA] (6th IGM/SPG) and a joint workshop with the United Nations University was held to develop a research plan and identify the role of APN in APEIS (September 2001). APN's role was thus far been identified as follows:

- *To hold a series of joint capacity building workshops on integrated monitoring and assessment with the National Institute for Environmental Studies (NIES, Japan) and other institutes and organizations.*

2. Capacity building workshops on integrated monitoring and assessment

Objectives:

- To develop the capacity of APN member countries on integrated monitoring and assessment;
- To facilitate regional research cooperation on integrated monitoring and assessment; and
- To contribute to the implementation of APEIS.

Workshops sponsored in 2002:

- *APEIS CB Workshop on IEM in A-P, Beijing, China 20-21 September 2003.*
APN sponsored participants from **Mongolia, ROK, Russia, Uzbekistan, and Viet Nam.**
- *APEIS CB on IEA in A-P, Delhi, India 24-26 October 2003.*
APN sponsored participants from **India, Nepal and Sri Lanka** (no show). No nomination was received from Bangladesh.

3. Conclusions

APN is identified as a strong partner for APEIS and this partnership should continue. **However:**

- **APN Secretariat was concerned that the overall contribution to the APEIS CB workshops in Beijing and Delhi was poor:**
 1. *Standard of expertise of some selected APN participants (selected by national FPs) was not sufficient to contribute effectively to the workshops.*
 2. *Selection process was not suitable for securing participants from all countries in the workshop region.*
 3. *English ability of some APN participants was not sufficient.*

● **How can APN be a strong partner for APEIS?**

1. *Continue sponsoring APEIS Capacity Building workshops during its first phase (which ends in FY2004).*
2. *In these Capacity Building Workshops, have strict criteria for APN participant selection that should include:*

Proven expertise in the related field and proven English-language ability

As discussed at the Steering Committee Meeting in December, the Selection process could be improved as follows:

- *APEIS provides Secretariat with detailed workshop information.*
 - *Invite SPG members and national Focal Points (and possibly APN Liaison Officers if no SPG member exists) to liaise and provide a list of candidates from their country to Secretariat.*
 - *Secretariat then liaises with APEIS PIs for final candidate selection.*
3. *APN participants should submit a report to the Secretariat which should be published on the APN website.*

Proposed: APN Global Change Coastal Zone Management Synthesis

What is a synthesis?

“Synthesis” should basically be a combining of ideas. It should not just include a summary, but should also consider driving questions, identify commonalities, and generalizations, i.e. identify higher level concepts, patterns and needs (research gaps and future direction).

Background to APN Synthesis Activities

Following approval at the 7th Inter-Governmental Meeting, APN will produce an annual synthesis report with the theme changing each year. This report will be part of, or a joint publication of, an APN annual report. A common factor of this synthesis will be how the results of APN-funded projects have contributed to APN in terms of the six main goals highlighted in the current APN Strategic Plan (1999-2004):

- Goal 1. Support regional cooperation in global change research on issues particularly relevant to the region.*
- Goal 2. Strengthen the interactions among scientists and policy makers, provide a scientific input to policy decision making and scientific knowledge to the public.*
- Goal 3. Improve the scientific and technical capabilities of nations in the region.*
- Goal 4. Facilitate the standardisation, collection, analysis and exchange of scientific data and information relating to global change research.*
- Goal 5. Cooperate with other global change networks and organisations.*
- Goal 6. Facilitate the development of research infrastructure and the transfer of know-how and technology.*

Proposed Synthesis Activity (2003-05):

Two-year synthesis on *global change coastal zone management* - APN project related activities and their contribution to similar activities.

Note that the Secretariat is aware that the 7th IGM approved a one-year synthesis, however, experience from the first synthesis (LUCC) has shown that one year is insufficient for this kind of activity and that at least two-years is more realistic for a full synthesis.

The proposed coastal zones synthesis could have the following components:

1) Synthesis of APN Projects

Objectives:

- a) Evaluate achievements and present status of APN coastal zone projects (see projects

- listed on page 4 of this item) by reviewing past projects.
- b) Review present status and major problems of the coastal environment and identify urgent research needs (in-so-doing APN can identify gaps between research needs and APN activities.)
 - c) Identify a future research direction for coastal environments that is relevant to the region.
 - d) Report the results to the Inter-Governmental Meeting and Scientific Planning Group Meeting to review and thus determine future APN policy.

Expected outcomes:

- a) Synthesis Report (book, peer reviewed journals, etc.) that reviews and evaluates past projects.
- b) Report should contain results of a wide exploration of the present situation and problems of the coastal environment in the region. This part will contribute to the EMECS Coastal Environment Assessment
- c) Suggestions for future directions of APN coastal zone activities:
 - Gaps between needs and present research;
 - Areas to be focused in future projects;
 - Secretariat to be more proactive in APN proposal developments;
 - Relationship with international activities, such as IGBP-LOICZ¹, IPCC, IHDP, START, etc.; and
 - List policy relevant issues.

Possible candidates for synthesis organising committee:

Nick Harvey, Kanyathu Koshy, Patrick Nunn, Nobuo Mimura, Janaka Ratnasiri, Richard Warrick, Adeel Zafar, etc. (all have shown an interest in attending the proposed design workshop in May 2003. See timeline on page 3.)

2) Input and participation @ EMECS 2003

Hyogo Prefecture Government, one of APN's sponsors, is supporting the EMECS Secretariat and approached the APN Secretariat seeking APN's support for EMECS 2003, which will be held in Thailand in November 2003. With this in mind, the APN Secretariat proposes, as a new activity in 2003/04, the Asia-Pacific Forum at EMECS in Thailand (website: www.emecs2003.com/index.htm). This new activity will be subject to IGM approval and budget availability.

Incidentally, when EMECS 2001 was held in Kobe November 2001, APN co-sponsored the Asian Forum together with IGES and EMECS, inviting five panellists from the region. EMECS 2001 endorsed the programme to prepare the Outlook of the Asian-Pacific coastal environment and its management by 2005, having EMECS 2003 as a milestone meeting for its preparation process. The Secretariat is also considering, if the coastal zone synthesis activity (proposed in this paper) is approved by the 8th IGM, to convene an initial synthesis workshop back-to-back with EMECS 2003 (see timeline on page 3).

Note: APN Secretariat is, in principle, supportive of EMECS 2003. However, APN involvement must be approved by the 8th IGM in March 2003 (and is subject to budget

¹ Check no duplication of efforts.

availability.) Furthermore, EMECS 2003 Secretariat should be responsible for organising the Asia-Pacific forum; APN Secretariat could, for example, handle the scientific content of the forum. Overall, APN must be seen as a leading participant and strong partner at the Asia-Pacific Forum (EMECS 2003) – and not just as a co-sponsor.

Suggested Timeline for Synthesis Activity:

May 2003

Design workshop in Kobe, week beginning 12 May 2003 (2 to 3 days) to discuss the synthesis programme, nominate experts to be involved in the work, and decide activities to be carried out at Initial Synthesis workshop (Nov. 2003.)

Summer/autumn 2003

PI collects materials (with assistance from project collaborators) for Initial Synthesis workshop.

November 2003

Initial Synthesis WS @ EMECS 2003, Thailand (18-21 November 2003.) Activities should include general review of APN's past activities, identify research gaps and discuss the table of contents of the synthesis report (book, peer review journals, etc.)

Nov. 2003 – Sept. 2004

Synthesis team to complete draft report and work on key issues raised at Initial Synthesis workshop in preparation of Second Synthesis Workshop in autumn 2004.

Sept/Oct 2004

Second Synthesis WS in Kobe (Sept/Oct) to present draft report for editing and to highlight specific areas of interest to APN activities, and the global change community, etc.

October 2004 to January 2005

Complete end product (a technical editor could be assigned to do this work)

March 2005

End product presented @ 10th APN Anniversary

Meeting dates

Date	Mar	April	May	June	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb
2003 (Year 1)			• Design WS, Kobe, week beginning 12 May							Initial Synthesis WS @ • EMECS 2003, Thailand (18-21 Nov)		
2004 (Year 2)							• Second Synthesis WS, Kobe (Sept/Oct)					
2005	• End Product Presented @ 10 th APN Anniversary											

Budget for 2003-2005: US\$ 90,000 approx.

Recent Steering Committee supported this synthesis and made the following comments:

- One year is insufficient for synthesis output
- For bridging gaps, START regional initiatives and scoping activities may be useful
- A strategic approach should be adopted as opposed to looking at projects individually
- Strong leader and good timeframe are required for successful synthesis
- Report expected in time for 10th Anniversary

SPG recommendations:

This proposal was recommended for IGM endorsement. However, SPG members emphasised the need for strong scientific leadership and a manageable timeline. It was agreed to include not only the APN community but other regional stakeholders as well. *Most importantly, the SPG agreed that any such assessment should take into account the results of research undertaken in this area by other programmes (e.g. IGBP-LOICZ) in order to establish the widest possible basis for the assessment.* The Final product could include a book as part of the IGBP global change book series.

APN Coastal Zone Projects²

APN 98005, Toward an Integrated Regional Model of River Basin Inputs to the Coastal Zones of Southeast Asia, PI: Jeffrey Richey.

APN 98011, Planning Workshop - Marine and Coastal Zone Studies in the Asia-Pacific Region, PI: Roland Fuchs.

APN 2000-06, International Human Dimensions Workshop 2000 - Human Dimensions Issues in the Coastal Zone, PI: Nick Harvey.

APN 2000-07, Training Workshop for Capacity Building and Networking in the Area of Biogeochemical (BGC) Budgeting and Socio-Economic Modelling including Human Dimensions Aspects, in the Coastal Systems of South Asia, PI: Janaka Ratnasiri

APN 2000-09, APN/SURVAS/IGBP Joint Conference on Coastal Impacts of Climate Change & Adaptation, PI: Nobuo Mimura.

APN 2000-11, Recent Sea-level Change and Coastal Management Implications for Oceania, PI: Nick Harvey.

APN 2000-20, East Asia BASINS Workshop, PI: Hartwig Kremer.

APN 2001-20 & 2002-05, Assessment of Nutrient, Sediment and Carbon Fluxes to the Coastal Zone in South Asia and their Relationship to Human Activities, PI: Janaka Ratnasiri

APN 2002-08, Training Workshop for the Pacific Island Countries to Enhance Skills in Global Change Negotiations and Synthesis Activities, PI: Kanayathu Koshy

APN 2002-11, Joint Support for Symposium on Adaptation of Asia and Pacific to Global Change in the 20th Pacific Science Congress, PI: Shu Sun.

APN 2002-16, Atoll Island Change and Linkages to Sea Level Variations in Oceania, PI: Nick Harvey.

APN 2002-17, PABITRA Network for Collaborative Research on the Ecology of Global Change in Island Landscapes of the Tropical Pacific, PI: Dieter Mueller-Dombois.

² More details of these projects can be obtained from APN website:
<http://www.apn.gr.jp/prjct00.htm>

3rd World Water Forum

Following approval from the Steering Committee, the Secretariat began preparations for a 3rd World Water Forum (WWF3) session on “*Water and Global Change Research: APN Perspective*” in Kyoto, Japan, on 18 March 2003. Funds for this activity were made available through the APN contingency fund.

Participants of the APN session, which include a developing country project member of an APN inland water project and an experienced SPG member and leading scientist on water issues as related to global change research, were selected by the Secretariat after approaching APN project leaders.

The ninety-minute session will include:

- Overview of APN and its Water-related Activities
(Martin Rice, Programme Manager, APN Secretariat)
- APN Water Project Presentation: Inventory of Glaciers and Glacial Lakes and the Identification of Potential Glacial Lake Outbursts (GLOFS)
(Pradeep Mool, Project Member of APN Project 2002-15)
- Water: a Priority Area for Global Change Research
(Amir Muhammed, SPG Member and Project Leader of APN Project 2002-12)
- Questions/Answers Session.

The Secretariat has informed the global change community of this session and will display a Poster at the WWF3 that features APN water-related activities and the related activities with the global change programmes and networks. The APN will also present at the Global Water System Project meeting in Kyoto.

Finally, participants will attend relevant fora at the WWF3, for example, “Water and Climate,” “Water, Food, and Environment,” “Water, Nature and Environment” and write a follow-up article for future APN publications.

For further information on the 3rd World Water Forum and its relevance to APN’s goals and objectives, visit the WWF3 website: <http://www.worldwaterforum.org/>

Pacific Island Summit
Okinawa, 15-17 May 2003

APN may have an opportunity (subject to approval by the Ministry of Foreign Affairs, Japan) to showcase its activities – with specific reference to Oceania – at the forthcoming Pacific Island Summit in Okinawa, 15-17 May 2003.

If given the chance, the APN would like to be represented at the Summit in one or more (if not all) of the following settings:

1. Twenty minute presentation¹ to PIC leaders during the meeting. This presentation would provide:
 - introduction to APN;
 - highlight regional projects and activities in Oceania;
 - other global change partnerships within the region; and
 - display PIC involvement in APN's CAPaBLE Programme (type II)
 - links with IPCC
2. Display APN materials and poster in exhibition hall
3. Japanese delegation to present APN and its regional activities during the Summit

The Secretariat would very much like to see all of the aforementioned scenarios become a reality. If this is not possible, then we would be more than happy to see options 2) and 3) take place.

¹ This presentation can be given by a member of the APN Secretariat or the Co-Chair of the APN Scientific Planning Group, who is from Oceania.

APN Annual Report

APN has been promoting global change research since 1997 through the "APN Call for Proposals" process and has since produced promising scientific outputs. However, at present, the APN does not publish an annual report highlighting efforts at promoting global change research. This issue was raised at the last IGM in Manila, and as a result it was agreed upon by the 7th IGM that APN produce an annual report.

The 6th APN Steering Committee meeting recommended that:

- *Synthesis report to be included as part of Annual Report;*
- *To minimise costs, number of hard copies to be printed should be minimal and annual report placed on website. Monitor requests for hard copies; and*
- *Annual Report will probably be about 50 pages, style similar to that of START*

Ad Hoc Annual Report Committee

The overall goal of the ad hoc annual report committee is to assist the Secretariat in ensuring that the content and language of the report is matched to the target audience, e.g. policy makers, scientists, and the general public.

Committee members will include:

- Xuedu Lu, China;
- Michael Stoddart, Australia; and
- SPG Co-Chair

The 6th Steering Committee also recommended that the Ministry of Environment, Japan be invited to offer comments in the editorial process.

The SPG recommended revisions of the template (see next page), which will include:

- *A summary for policy-makers;*
- *List of publications/products in the Annex section;*
- *Should be visionary and include accomplishments;*
- *Adjust the contents so that financial resources are included at the back of the Report; and*
- *Report should be attractive to its target audience.*

**APN ANNUAL REPORT
(2002/2003)**

(Draft) CONTENTS:

APN Mission Statement

Director's Message

Future Outlook (planned activities 2003/2004)

Summary for Policy-makers

APN Projects 2002/2003

Networking and Capacity Building Programme

APN Achievements 2002/2003

Synthesis Report: Land Use Cover Change

APN in 2002/2003:

Events

Communication

People

APN Partnerships

Annex 1: Glossary of Acronyms

Annex 2: APN Framework Document

Annex 3: List of APN Activities 1996-2001

Annex 4: List of APN Publications/Products

Annex 5: APN Financial Resources

Preparation for 10th Anniversary

Scientific Review/Achievements of APN (including 2005 evaluation)

The 7th SPG/IGM meeting in Manila discussed preparation for the 10th anniversary of the APN in 2005 and highlighted the need to evaluate APN scientific activities since its establishment. In addition, a new 5-year strategic plan should also be issued.

The 6th Steering Committee meeting in Kuala Lumpur discussed preparation for the 10th anniversary and suggested the following:

- A short document should be produced (about 30 pages) that incorporates the review/evaluation of 1999-2004 and the new strategic plan 2005-2009.
- First strategic plan period was successful for networking but the second strategic plan period is more important to improve the quality and develop a more strategic approach.
- SC is considered most strategic to handle the evaluation and strategic plan – separate technical advisory committee not required
- A technical writer is to be invited to work for one half-year in 2004 (possibility of in-kind contribution from member country).
- START is to invite comments from GC partners in terms of evaluation comments.
- SC will work electronically and submit comments and names of possible contributors.
- A letter is to be drafted by the Secretariat, checked by SC, and distributed.

The Secretariat proposes the following:

(1) Review/Evaluation of First Period (1999-2004)

Evaluation can generally include various aspects such as assessing the strengths and weaknesses of programmes, policies, personnel, products, finance, and effectiveness of organisations. It should be noted, however, that no evaluation would be possible without having a benchmark. With this in mind, the secretariat suggests that the review/evaluation of the First Period (1999-2004) have specific reference to the six main goals set forth in the first APN Strategic Plan (1999/2004):

Goal 1. Support regional cooperation in global change research on issues particularly relevant to the region.

Goal 2. Strengthen the interactions among scientists and policy makers, provide a scientific input to policy decision making and scientific knowledge to the public.

Goal 3. Improve the scientific and technical capabilities of nations in the region.

Goal 4. Facilitate the standardisation, collection, analysis and exchange of scientific data and information relating to global change research.

Goal 5. Cooperate with other global change networks and organisations.

Goal 6. *Facilitate the development of research infrastructure and the transfer of know-how and technology.*

We should also consider if we have achieved the following:

“In short, the APN’s strategy for the next five years is to continue in the same broad framework but with more focus in terms of overall goals, scientific priorities and the types of projects funded. There will also be a much greater emphasis on proactive work led by a strengthened Secretariat focussing on network building, information provision and facilitating cooperative research. At the same time, the Secretariat will do more to strengthen the structure, staffing and funding base of the APN.”
(p. 3, Executive Summary, Strategic Plan 1999-2004.)

This benchmark should then be applied to the evaluation process in 2003/2004.

(2) New Strategic Plan for the Second Period (2005-2009)

A new strategic plan has to be developed based on the evaluation of the first period. However, the preparation of the second strategic plan has to be concurrent with the review/evaluation so that both reports are submitted at the 10th Anniversary meetings in 2005. With this in mind, the year 2003 will be used for information collection and discussions with stakeholders as to how to improve the quality and develop a more strategic approach. 2004 will be used for drafting the plan and holding discussions with stakeholders.

(3) Steering Committee’s role

The Steering Committee is considered to be in the best position to handle the evaluation and strategic plan, in consultation with the Secretariat (based on 6th Steering Committee recommendations). It will also discuss the nomination of a technical writer to be invited for a half-year’s work in 2004. The Steering Committee will also work electronically and submit comments and names of possible contributors.

(4) Timeline for product preparation

Following the completion of Secretariat tasks in 2003, the technical writer would work for half a year in 2004 and have products prepared in time for 10th SPG/IGM meetings in March 2005.

APN Contribution to IPCC Fourth Assessment Report (AR4)

The 6th Steering Committee in Kuala Lumpur discussed APN Contribution to the IPCC Forth Assessment Report and suggested as follows.

- Secretariat to introduce as an item at SPG/IGM – “How can APN contribute to IPCC AR4.” APN to strongly encourage recipients of APN grants to publish the results of their investigations in open, peer-reviewed literature and to cite APN support in their acknowledgements. Then, when this work is cited in the AR4, the APN acknowledgements can be searched for and quoted.

Schedule for IPCC AR4 according to IPCC document (5 Feb 2003)

- The IPCC at its 18th Session (Wembley, UK, 23-29 September 2001) decided to proceed with a Fourth Assessment Report, to be completed in 2007.
 - At the 19th Session, Geneva, 17-20 April 2002, the Panel undertook further planning for this assessment.
 - At its 20th Session (Paris, 19-21 February 2003) the Panel is expected to approve a work plan that will include two "scoping meetings" of experts to define the scope and structure of the Fourth Assessment Report.
 - These scoping meetings would most likely be held 14-17 April in Marrakech, Morocco and 1-3 September in Berlin, Germany (though both these locations and dates are subject to final confirmation).
- (1) The focus of the first scoping meeting would be to agree on the general scope and approach, and to identify key scientific issues to be addressed in the Working Group contributions to the Fourth Assessment. It would also consider user feedback and user needs. Issues related to scenarios would be addressed and cross cutting themes would be identified. Matters related to a possible Synthesis Report would be introduced.
 - (2) The second scoping meeting would focus on cross cutting themes and on the mechanism for addressing them. It would further address scope, nature and possible structure of the Synthesis Report, agree on an overall timetable and finalize the chapter outlines of the Working Group contributions. It is expected that while some experts may attend both meetings there would also be a significant number of experts only invited to one of the two meetings.
 - (3) Recognising that participation in the scoping meetings is, by necessity, limited, the Chairman of the IPCC, Dr Rajendra Pachauri, would like to invite Governments and interested organisations and individuals to submit their views on the scope and structure of the Fourth Assessment Report to him, through the

IPCC Secretariat. These contributions should be submitted to the IPCC Secretariat by Friday, March 28, 2003, and will then be made available to the participants at the scoping meetings.

With this in mind, the APN Secretariat proposes the following:

- (1) The recipients of APN grants are strongly encouraged to publish the results of their investigations in open, peer-reviewed literature and to cite APN support in their acknowledgements. Information about existing publications and on-going plans should be submitted to the Secretariat by the end of April 2003 in order to compile them in an APN database. They are also strongly encouraged to work for AR4 when nominated.
- (2) The Secretariat will develop a user-friendly website of APN in 2003 so that experts involved in the process of IPCC AR4 can easily access APN reports. This information might be provided to the IPCC Secretariat as part of aforementioned submissions from the APN, in conjunction with the views of APN SPG/IGM members on the scope and structure of AR4.
- (3) In order to submit the views on the scope and structure of the Fourth Assessment Report as appropriate, the Secretariat invites suggestions about possible contribution of APN to IPCC FAR for the second scoping meeting to be held from 1-3 September in Berlin, Germany. Particular contributions are expected from Congbin Fu, Jim Salinger, Michael Manton, Tsuneyuki Morita and Nobuo Mimura. Time limit for suggestions to the Secretariat is the end of July 2003.
- (4) The Secretariat should establish a close link with the IPCC Secretariat so that information about appropriate APN climate change activities can be inputted into the IPCC process. Information should include details of the CAPaBLE programme and its activities. In this regard, the Secretariat will seek opportunities to invite IPCC key persons (e.g. Bureau members, Coordinated Lead Authors, etc.) to APN meetings and workshops.

Possible additions may include:

- APN member countries are encouraged to nominate Coordinated Lead Authors and Lead Authors for AR4 from recipients of APN grants upon request from the IPCC Secretariat expected in late 2003. In particular, participating researchers in the Comprehensive Research Projects for Scientific Capacity Enhancement under the CAPaBLE would be the strongest candidates.
- The Secretariat will include a list of APN grant recipients in the website to be developed in 2003.

Membership Development

APN Member Changes

Have been provided in item 4 (IGM/8/02).

Member Countries with no FP and/or SPG Member

Bangladesh – no FP and SPG member

Secretariat has made repeated efforts to find an FP and SPG member. Both with direct communication with the Government of Bangladesh and contact with SASCOM and APN Liaison Officer. All attempts have been futile thus far.

Russia – no FP

No response from Russian Federation Government concerning appointment of a national Focal Point.

Cambodia– no SPG member

Secretariat will seek assistance of APN national Focal Point for Cambodia and APN Southeast Asia Liaison Office for guidance in arranging a SPG member for Cambodia.

APN Country Membership

Pacific Island Countries (PICs)

Pacific Island Countries are currently “approved” member countries. However, avenues to discuss collective representation of PICs (i.e. one participant to represent all PICs) has been on-going since the 6th IGM and APN has yet to establish how best to secure and maintain full PIC engagement.

Brunei and Singapore

Based on Steering Committee recommendations, the Secretariat seeks the approval of the IGM to approach Brunei and Singapore regarding the possibility of APN membership.

Presentations



ESSP: Earth System Science Partnership

The Earth System Science Partnership is a partnership of four global change research programmes for the integrated study of the Earth System, the changes that are occurring to the System and the implications of these changes for global sustainability.



DIVERSITAS



IGBP: International Geosphere-Biosphere Programme



IHDP: International Human Dimensions Programme on Global Environmental Change



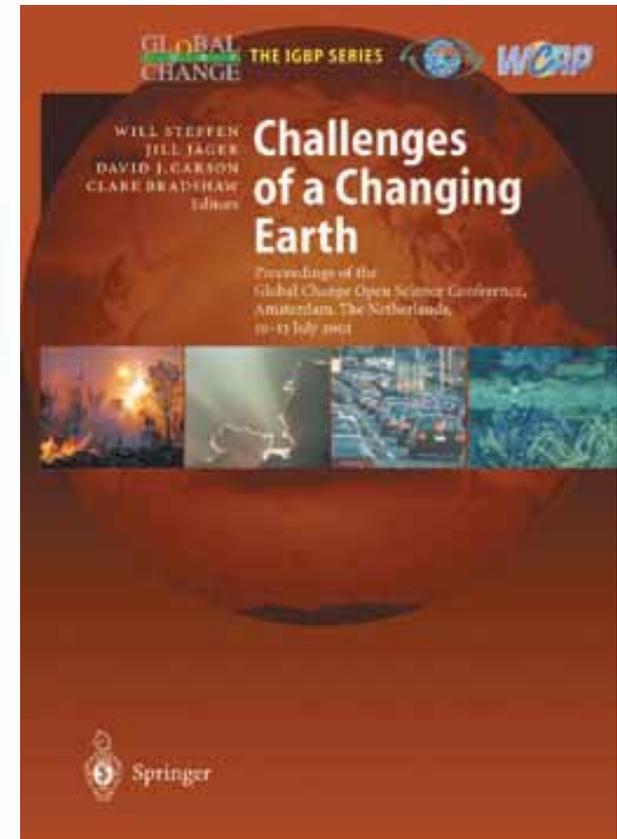
WCRP: World Climate Research Programme

ESSP: Activities

- Earth System Analysis and Modelling
- Global Change Open Science Conferences
- Joint Projects on Global Sustainability:
Carbon/Energy,
Food,
Water,
Health
- Communication Activities

Challenges of a Changing Earth

First ESSP Open Science Conference
Amsterdam, NL, 10-13 July 2001



Earth System
Science Partnership

www.sciconf.igbp.kva.se



Bob Dickinson, Mike Raupach, Oran Young
Co-Chairs

Pep Canadell
GCP International Project Office
Canberra, Australia



Earth System
Science Partnership

www.GlobalCarbonProject.org

GCP Research Agenda

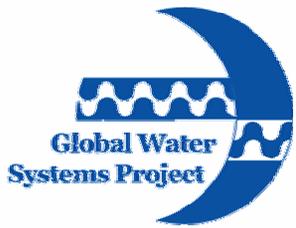
- 1. Patterns and Variability**
What are the geographical and temporal patterns of carbon sources and sinks?
- 2. Processes, Controls and Interactions**
What are the controls and feedback mechanisms - natural and anthropogenic - that determine the dynamics of the carbon cycle on scales of years to millennia?
- 3. Carbon Futures**
What are the likely dynamics of the global carbon cycle into the future?





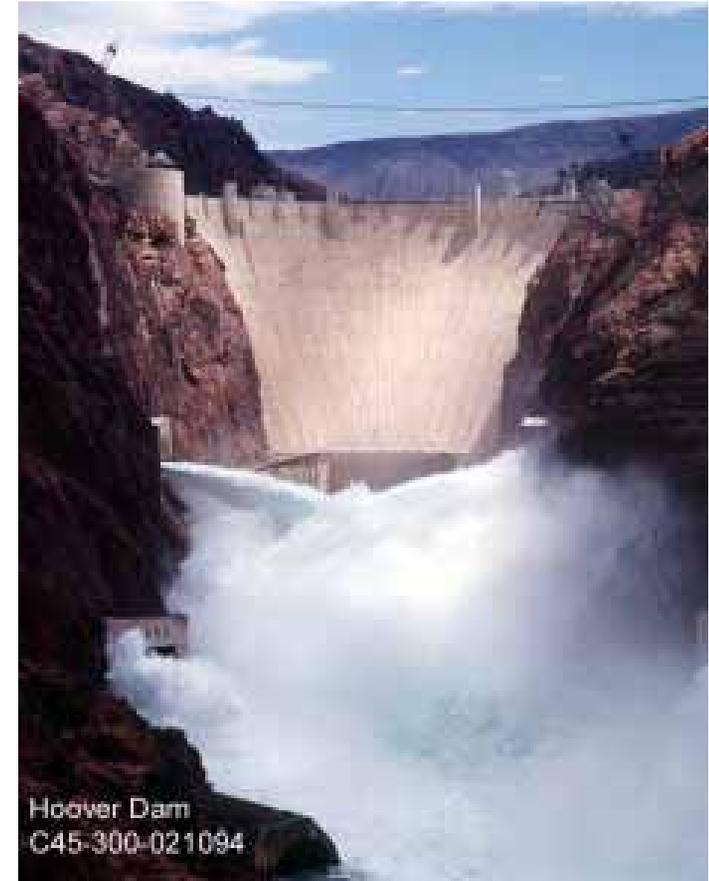
Carlo Jaeger, Dennis Lettenmaier, Christian Leveque,
Charles Vörösmarty
Planning Team Co-Chairs

Holger Hoff
Interim Executive Officer



GWSP Research Agenda

- What are the relative **magnitudes of changes** in the global water system due to human activities and environmental factors?
- What are the **main mechanisms by which human activities** are affecting the global water system?
- To what extent is the global water system **resilient and adaptable** to global change?





Peter Gregory
Chair

John Ingram
GECAFS International Project Office
Wallingford, UK



Earth System
Science Partnership

www.gecafs.org

GECAFS Research Agenda

1. How will global environmental change (GEC) additionally affect food **provision** and **vulnerability**?
2. How might different societies and categories of producers **adapt** their food systems to cope with GEC?
3. What would be the environmental and socioeconomic **consequences** of such adaptations?



Global Environmental Change

Changes in the biophysical environment caused or strongly influenced by human activities

For example changes in:

- Land cover & soils
- Atmospheric composition
- Climate variability & means
- Water availability & quality
- Nitrogen availability & cycling
- Biodiversity
- Sea currents & salinity
- Sea level

Food Provision

Provision = f (production, availability, access)

Production = f (yield, area)

Availability = f (production, distribution, storage)

Access = f (availability, socioeconomic potential [e.g. affordability], physiological potential [e.g. nutritional quality])

Effects of Global Environmental Change on Food Provision

Overarching questions

In which regions and to what extent are food production and provision potentially sensitive to GEC, and why?

How will anticipated changes in food production due to GEC influence the availability and accessibility of food?

To what extent might anticipated changes in socioeconomic conditions influence the impacts of GEC on food production potential?

Theme 2 Adaptations

Global Environmental Change and Options for Enhancing Food Provision

Overarching questions

How have food production systems coped with or adapted to environmental variability and change in the past?

What types of GEC will exceed the thresholds and speed of adaptive responses of current food production systems?

Are existing institutions capable of providing effective adaptation options?

What are the future costs to food provision of delaying the implementation of response strategies to GEC?

Theme 3 Feedbacks

Environmental and Socioeconomic Consequences of Adapting Food Systems

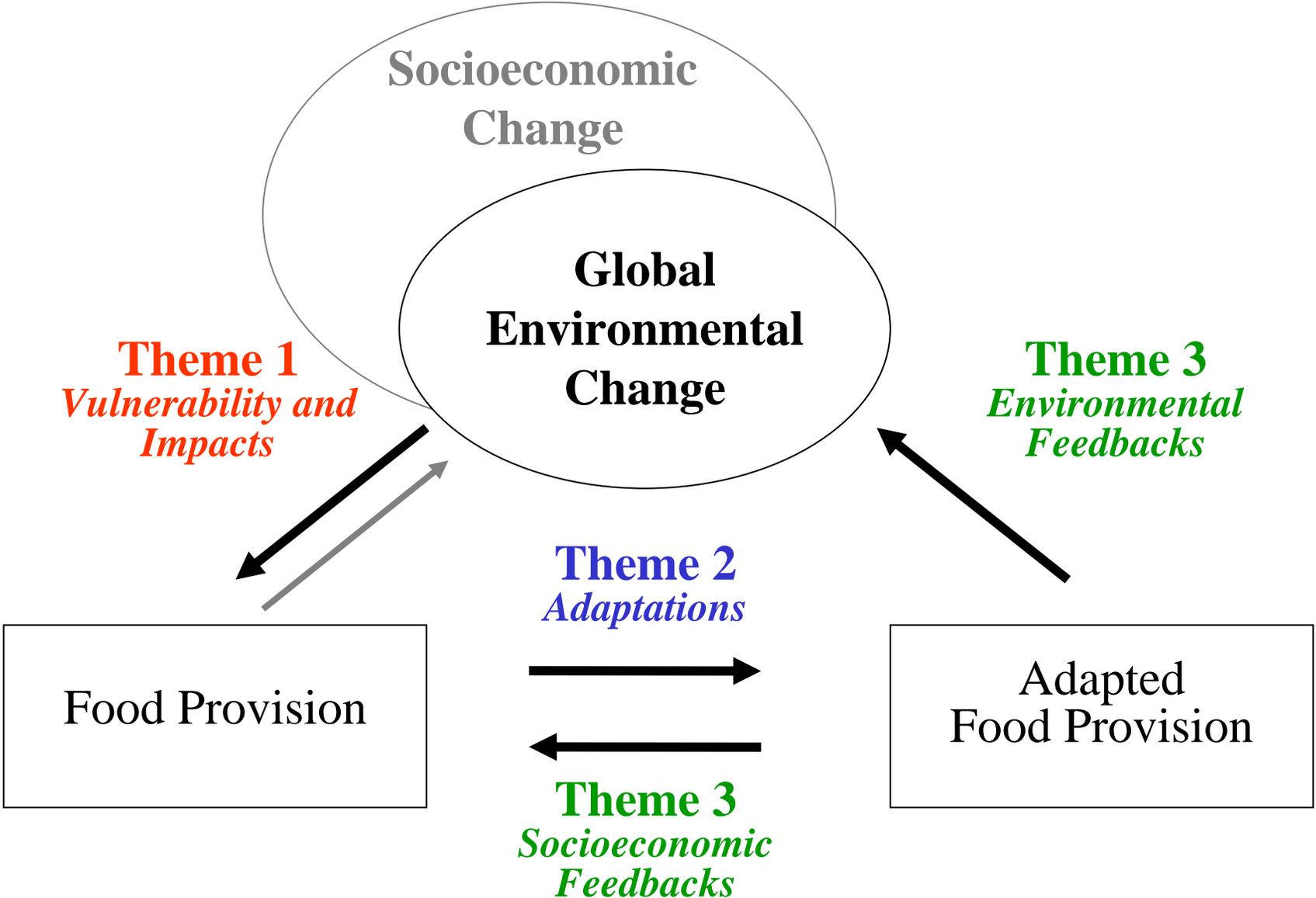
Overarching questions

How and to what extent will the environment be affected by adapting food systems in response to both changing demands and GEC?

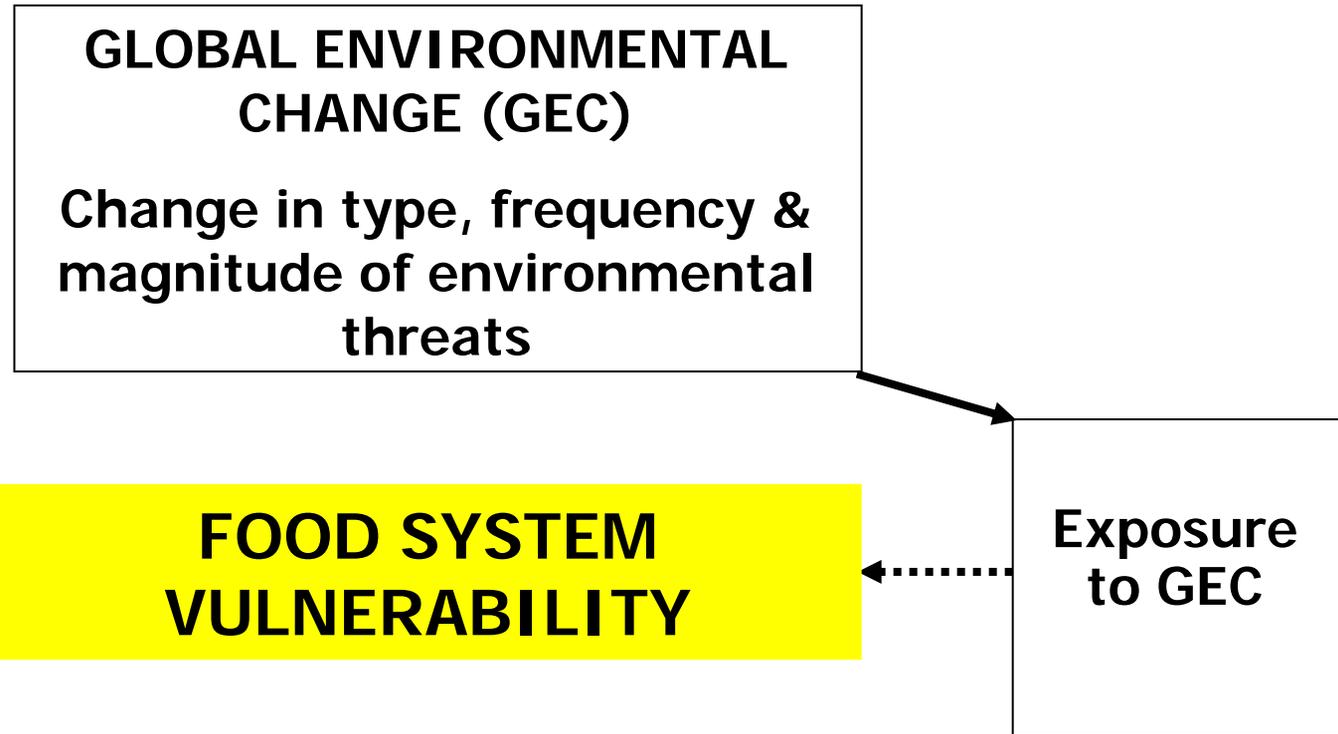
What are the socio-economic consequences of these adaptations?

To what extent are management responses effective in mitigating GEC and consistent with socioeconomic capacities?

GECAFS Science Themes



*“Traditional”
approach to
vulnerability
studies*



GECAFS
approach to
vulnerability
studies

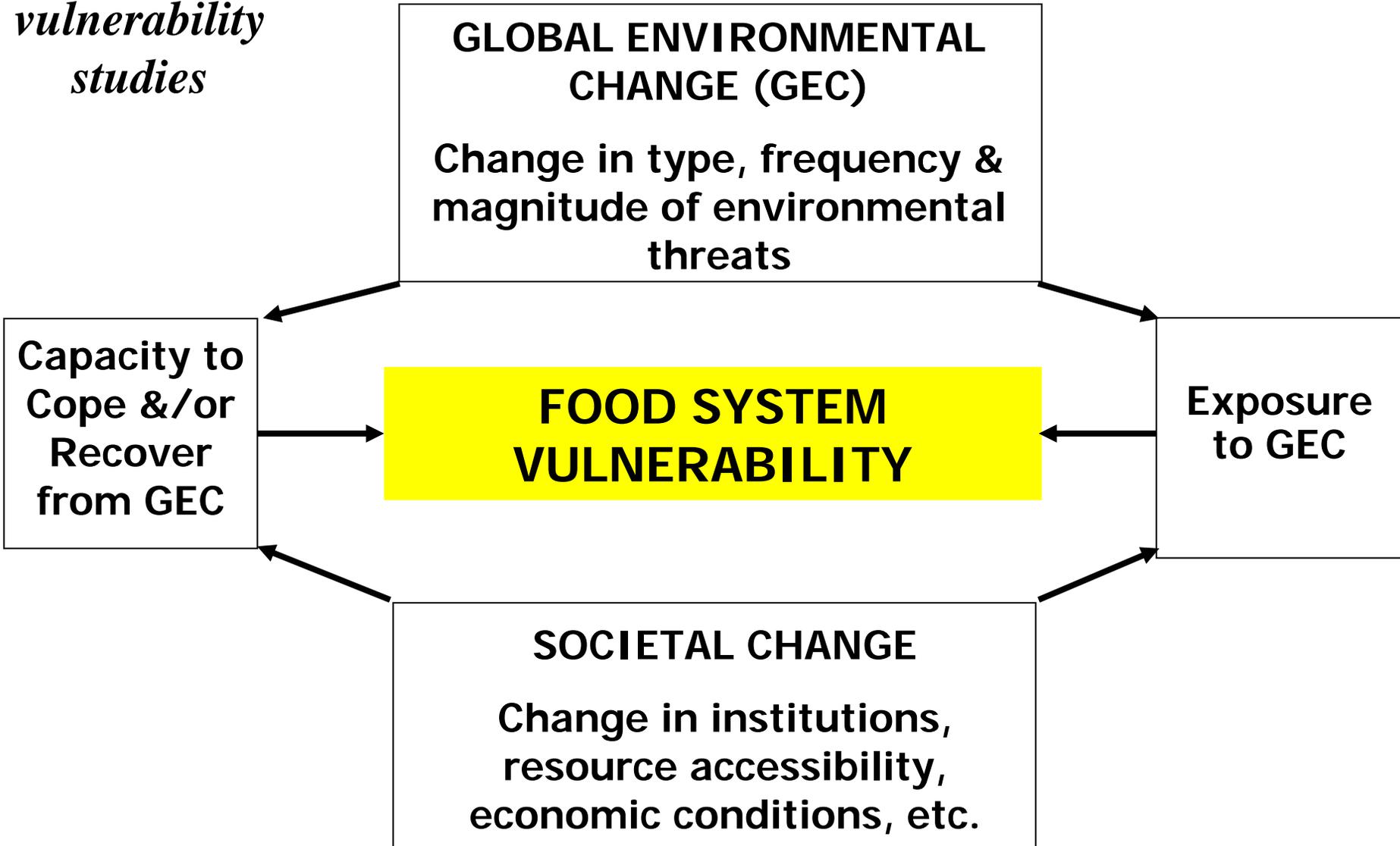
**GLOBAL ENVIRONMENTAL
CHANGE (GEC)**
Change in type, frequency &
magnitude of environmental
threats

**Capacity to
Cope &/or
Recover
from GEC**

**FOOD SYSTEM
VULNERABILITY**

**Exposure
to GEC**

SOCIETAL CHANGE
Change in institutions,
resource accessibility,
economic conditions, etc.



Minimum set of variables

Food system

Production

Consumption

Distribution

Socioeconomic

Population

Economic performance

Technology

Institutions and policies

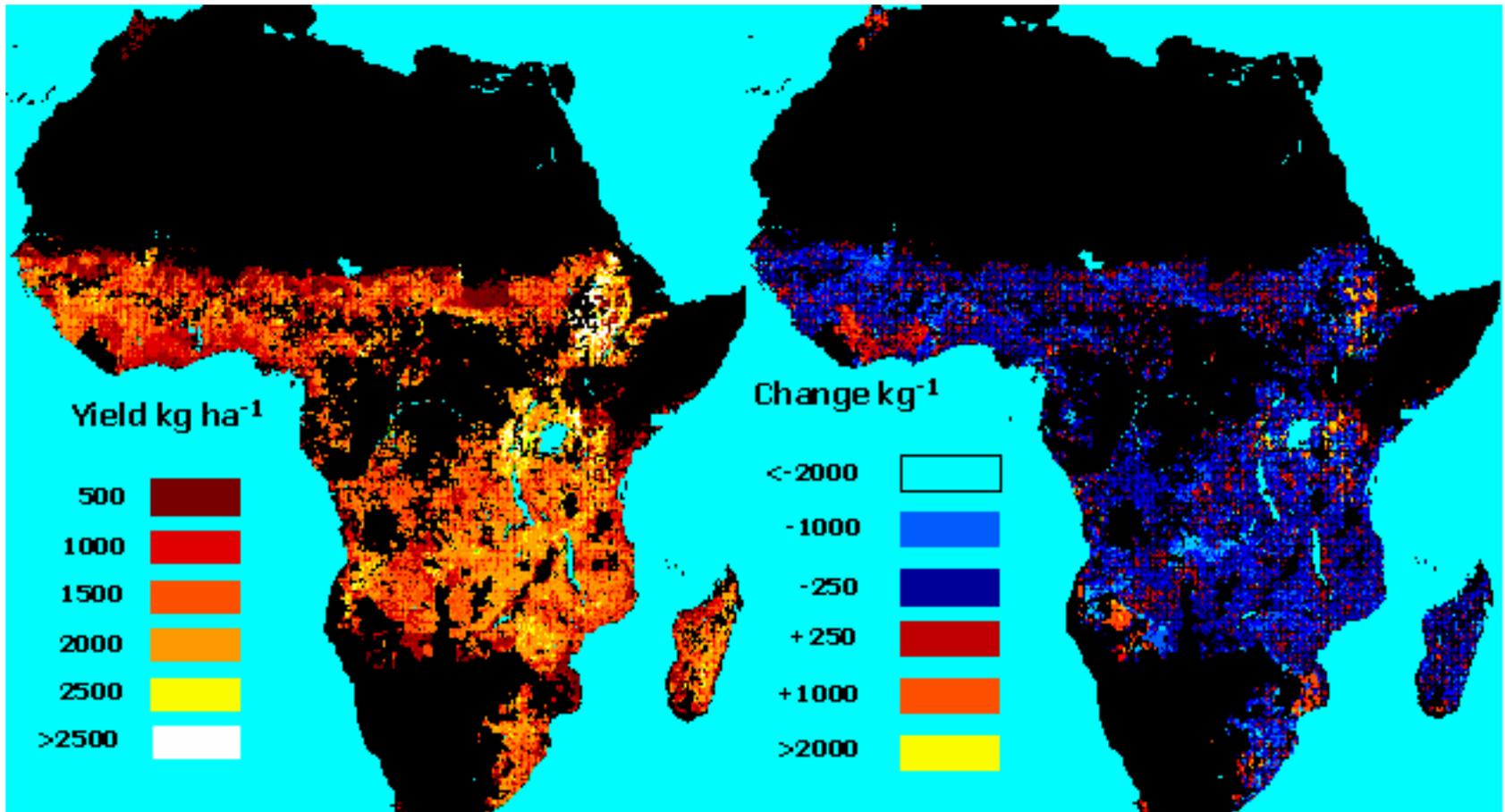
Biophysical/environmental

Resources (land, climate, water availability)

Ecological performance/condition

Simulated maize yields: baseline and changes by 2055

(from Jones & Thornton, CGIAR, 2001)



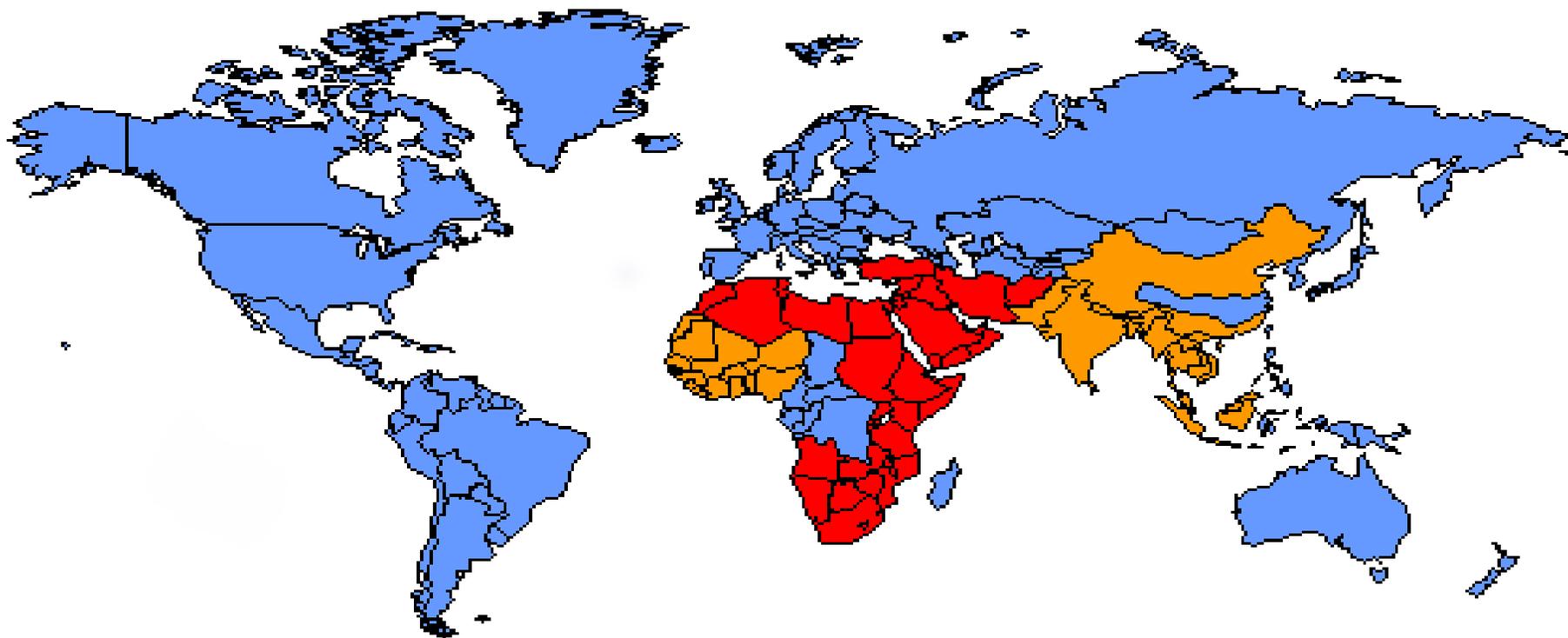
present

2055



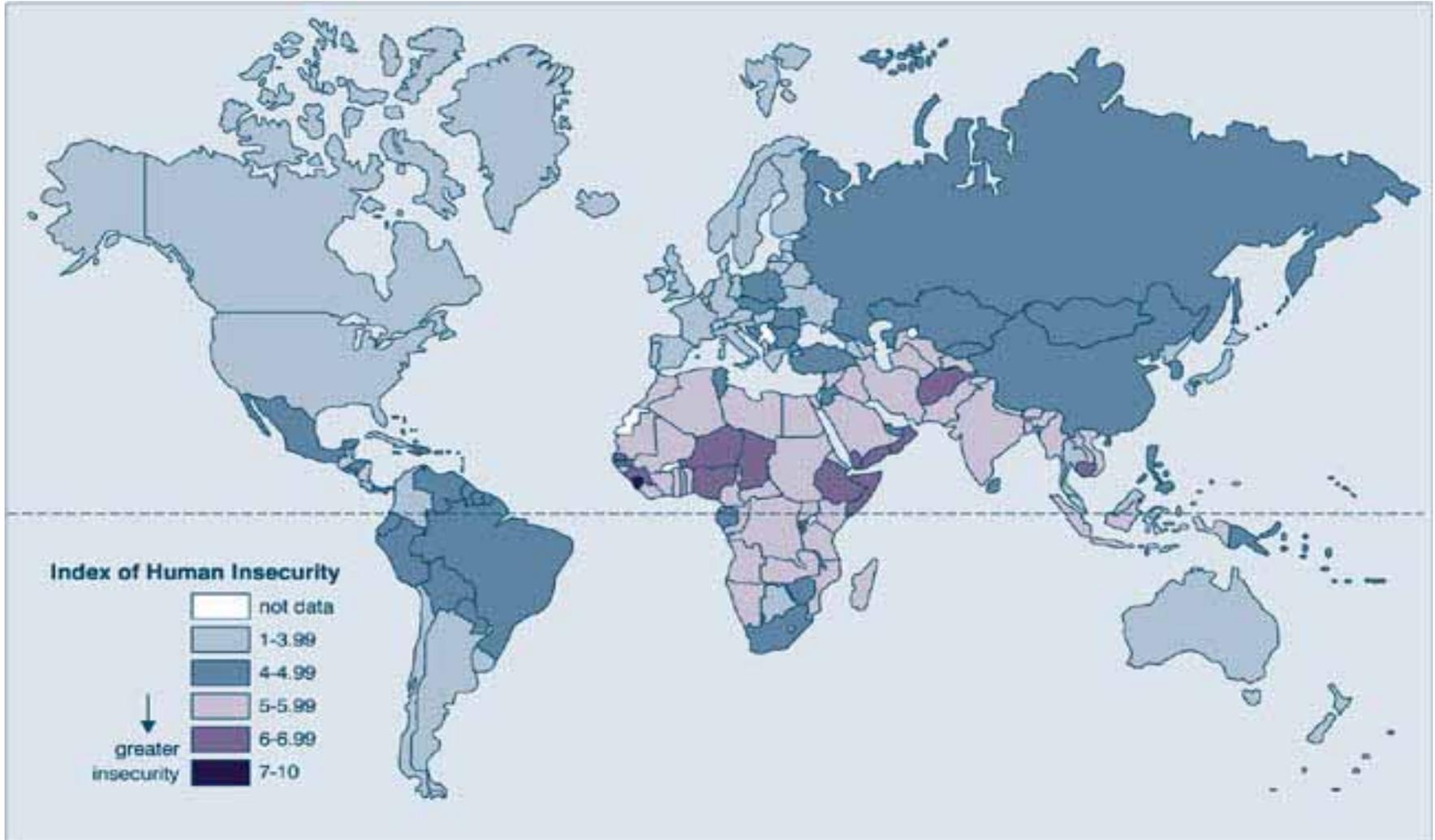
Estimated global water scarcity in 2050. Regions are coded according to their per capita annual renewable freshwater resource (m³/person/year) (from Wallace, 2000)

Red < 1000; Orange 1000 – 2000; Blue > 2000



Index of human insecurity (IHI) values for 1995

(from Lonergan *et al.*, 2000)



Initial GECAFS Projects

Strategic Research

- Vulnerability science
- Scenario development

Regional Projects

- Indo-Gangetic Plain food system
- Caribbean food system
- Eastern Pacific coastal fisheries
- Southern Africa livestock-maize food system

Example GECAFS Research Products

- ✓ Indices of human vulnerability based on a combined socioeconomic-biophysical approach.
- ✓ Comprehensive scenarios of future socioeconomic and environmental conditions.
- ✓ Region-specific recommendations on the institutional and technological factors that can reduce societal vulnerability to GEC.
- ✓ Quantitative methods for assessing the environmental and socioeconomic tradeoffs of scenario-based adaptations to food systems.

IGP Western Region

- high productivity – food surplus region
- high investment in infrastructure
- major use of fertilisers and ground-water for irrigation
- in-migration of labour

Example GECAFS Issues

Theme 1: How will climate variability affect change in water supply and demand for agriculture?

Theme 2: How can changes in water management (e.g. through policy instruments and/or agronomic aspects) reduce vulnerability of rice-wheat productivity to climate variability?

Theme 3: What will be the consequences of changed water management on rural livelihoods, intra-regional trade, GHG emissions and water tables?

IGP Eastern Region

- low productivity – food deficit region
- poor infrastructure and low inputs of fertilizer and water
- high risk of flooding
- out-migration of labour

Example GECAFS Issues

Theme 1: How will climate variability affect vulnerability of resource-poor farmers to flooding?

Theme 2: What are the market opportunities, social constraints and technical options for diversifying crops (e.g. aquaculture) to make more effective use of flood and groundwater?

Theme 3: How would diversification effect rural incomes, labour migration, water quality and regional biodiversity?

GECAFS Project on the Indo-Gangetic Plain Food System

- The IGP food system is both threatened by GEC *and* contributes to further GEC “forcing”.
- In the face of increased climate variability, policy requirements are to develop strategies that:
 - ✓ Increase agricultural competitiveness while limiting further environmental degradation;
 - ✓ Establish food provision systems which enhance the social security of the more vulnerable; and
 - ✓ Promote rural employment opportunities thereby reducing intra-IGP labour migration and urbanisation.
- Regional study needs to recognise marked socioeconomic and biophysical differences across the region.



MILLENNIUM ECOSYSTEM ASSESSMENT
- CURRENT STATUS AND PROGRESS UPDATE -

Presentation for the 8th APN IGM

Hanoi, Viet Nam, 12 March 2003

AGENDA



Introduction

Assessment design and methodology

Governance and structure

Progress update

Sub-global assessments

Getting involved

HUMAN DEMAND FOR ECOSYSTEM GOODS AND SERVICES IS GROWING DRAMATICALLY

Problems Expected To Become More Critical In The Next 30 Years



Food

Food production must increase to meet the needs of an additional 3 billion people over the next 30 years



One-third of the world's population is now subject to water scarcity

- Population facing water scarcity expected to double over the next 30 years



Wood

Wood fuel is the only source of fuel for one third of the world's population

- Wood demand expected to double in the next 50 years



WE HAVE MADE – AND ARE MAKING – CHANGES TO ECOSYSTEMS OF UNPRECEDENTED MAGNITUDE

Example: Shanghai, 1996-2000

1996



2000

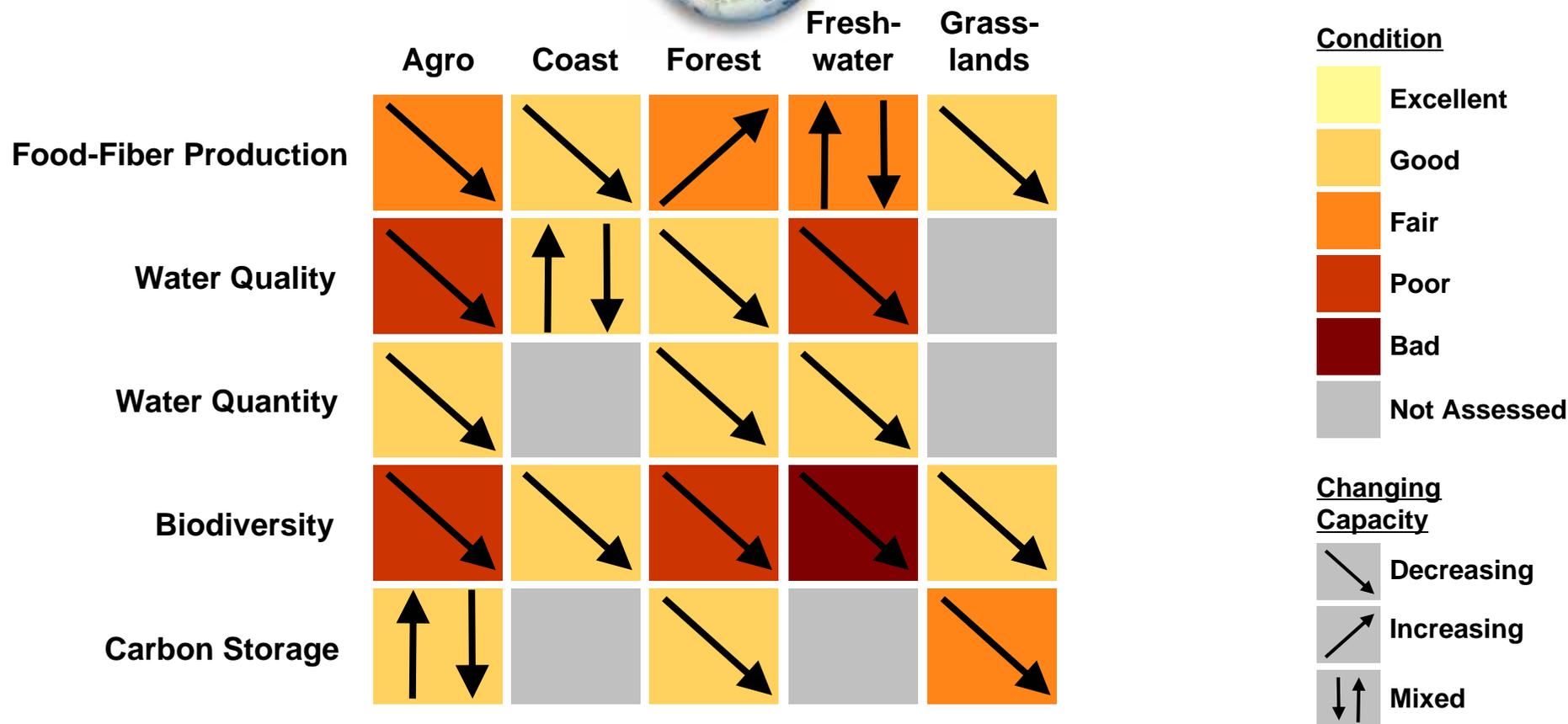


**It is essential that wise choices are made
in the use and conservation of ecosystems**

ENVIRONMENTAL SCORECARD FROM PAGE ON GLOBAL CONDITIONS AND TRENDS



Pilot Assessment of Global Ecosystems (PAGE), 2000



MILLENNIUM ECOSYSTEM ASSESSMENT

YET, SCIENCE IS NOT BEING BROUGHT TO BEAR EFFECTIVELY ON THESE CHALLENGES



Existing mechanisms for linking science and policy are highly sectoral

- **Forest Resource Assessment, World Water Assessment, Intergovernmental Panel on Climate Change, etc.**
- **But, the major problems today are increasingly multi-sectoral**

Significant issues identified by scientists are not on policy agendas

- **e.g. change in nitrogen and phosphorus cycles**

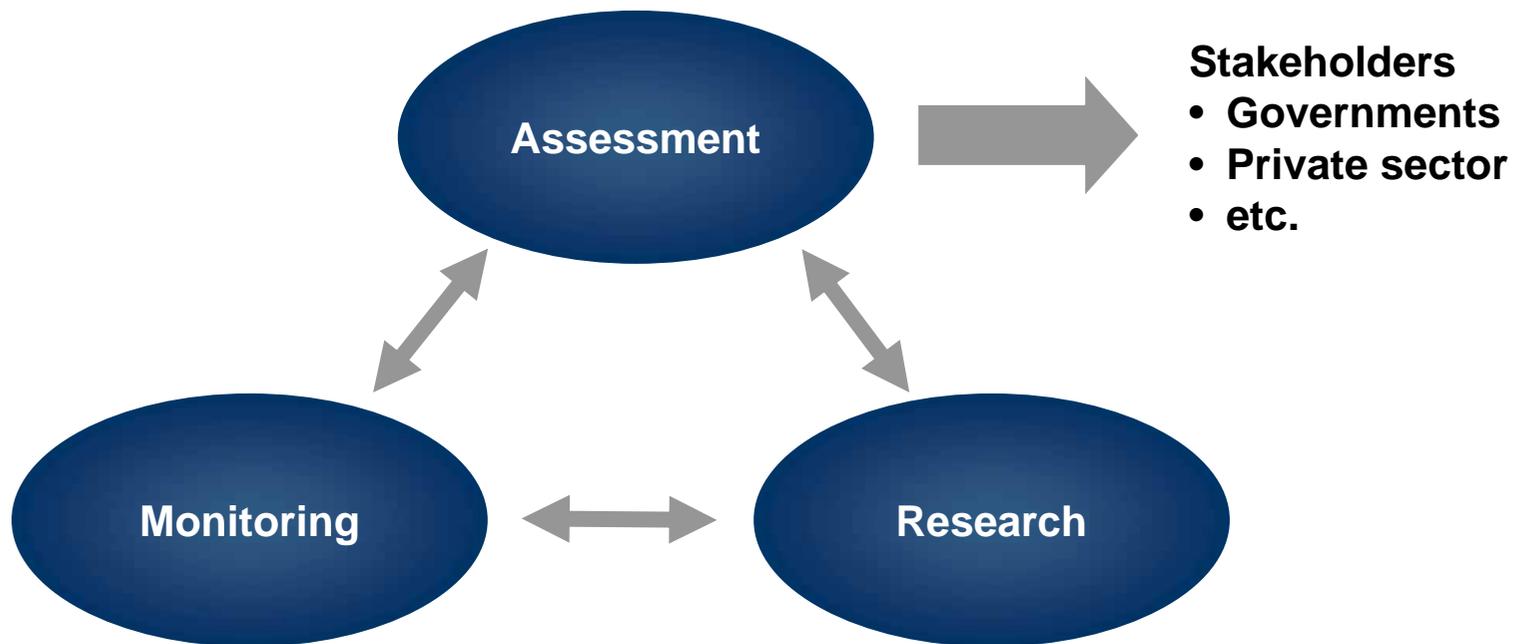
New data sources, methodologies and models are underutilized in many countries

- **Remote sensing**
- **Scenarios**

WHAT IS AN ASSESSMENT, AND WHAT DOES IT OFFER?

Assessment

- A social process to bring the findings of science to bear on the needs of decision-makers



Assessments assist in the process
of making tough choices

THE MILLENNIUM ECOSYSTEM ASSESSMENT IS A 4-YEAR, INTERNATIONAL SCIENTIFIC ASSESSMENT



Focused on ecosystem goods and services, and the consequences of ecosystem change on human well-being and other life on earth

- Basic components include Conditions and Trends, Scenarios, and Responses
- Undertaken at multiple scales (local to global)

Designed to meet a portion of the assessment needs of

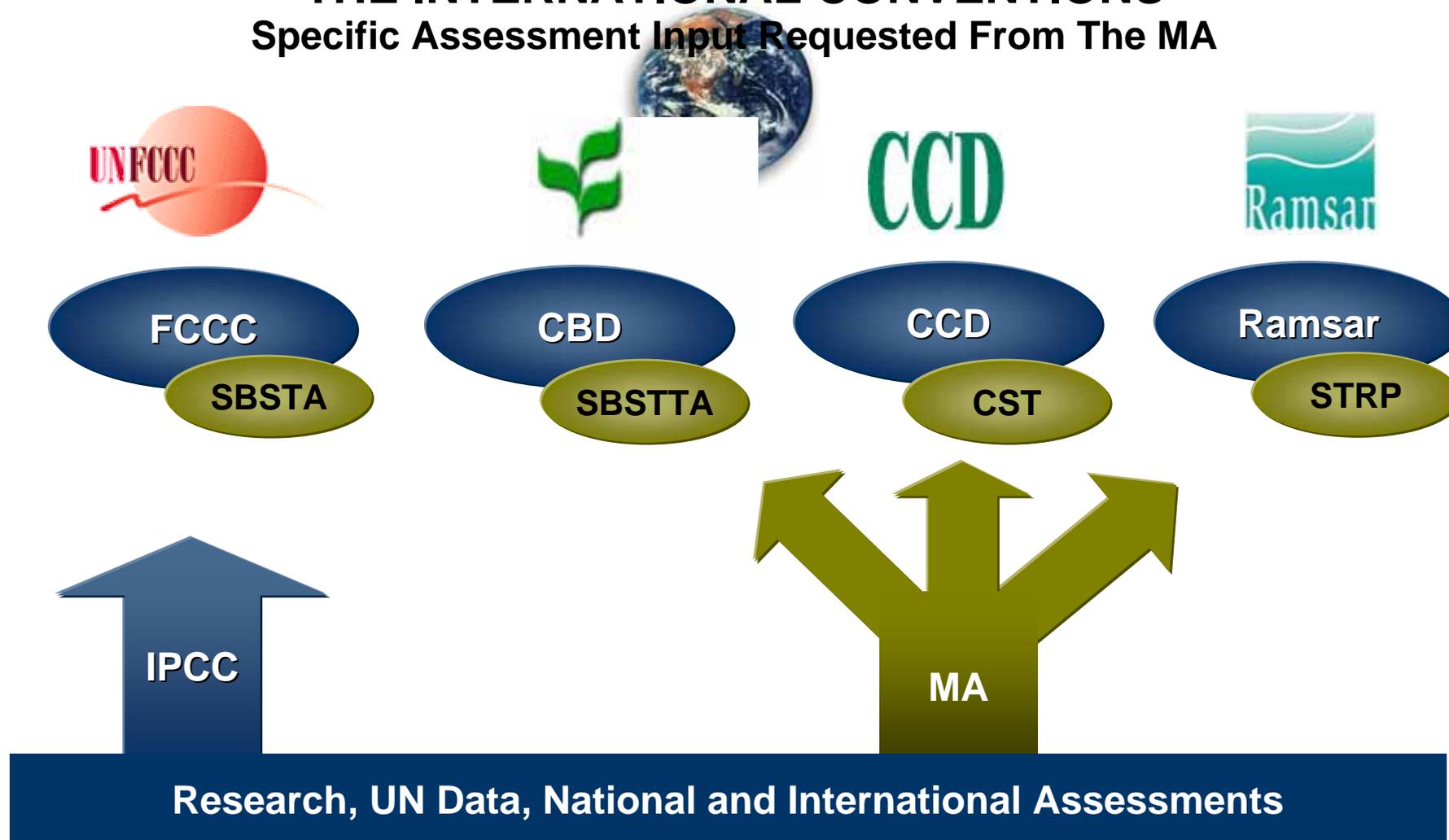
- Convention on Biological Diversity (CBD)
- Convention to Combat Desertification (CCD)
- Ramsar Wetlands Convention
- Other partners, including the private sector and civil society

Aims to provide information and build capacity

If successful, the expectation is that similar assessment processes will be repeated at 5-10 year intervals

THE MA HAS MULTIPLE USERS AMONG THE INTERNATIONAL CONVENTIONS

Specific Assessment Input Requested From The MA



FCCC: Framework Convention on Climate Change SBSTA: Subsidiary Body on Scientific and Technical Advice
 SBSTTA: Subsidiary Body on Scientific, Technical and Technological Advice CST: Committee on Science and Technology
 STRP: Scientific and Technical Review Panel

ADDITIONAL USERS AND AUDIENCES REPRESENT THE FULL SPECTRUM OF STAKEHOLDER GROUPS

International organisations



- Key action in the UN Secretary-General's "Millennium Report", April 2000
- Launched by Kofi Annan, June 2001

National and sub-national governments



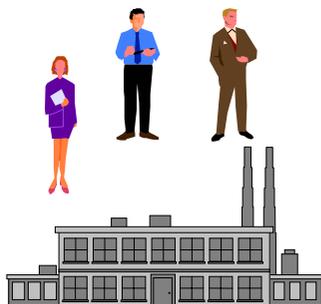
- ~180 governments represented through the international conventions
- Administrative authorities also engaged as users at other levels

Local communities and civil society



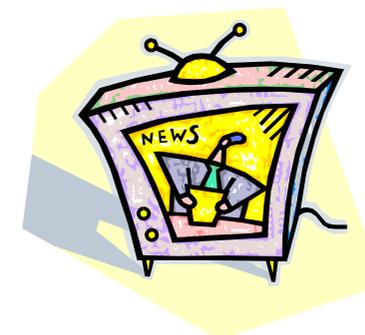
- Traditional knowledge of indigenous groups
- Assessment needs of indigenous and local communities

Private sector



- Individual companies
- World Business Council on Sustainable Development
- Intermediaries such as credit agencies, institutional investors
- Trade organisations

Media



AGENDA



Introduction

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Governance and structure

Progress update

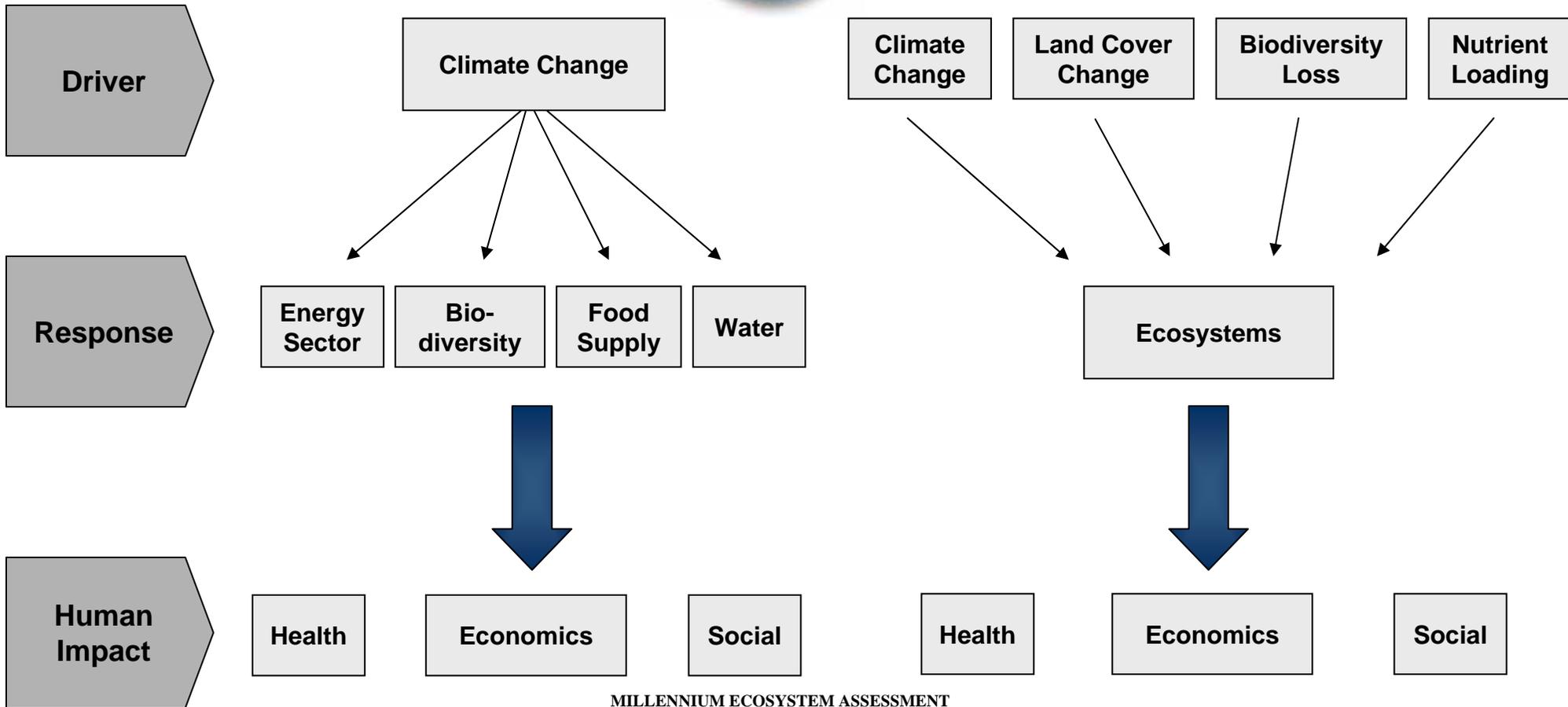
Sub-global assessments

Getting involved

THE MA IS AN INTEGRATED ASSESSMENT THAT EXAMINES MULTIPLE DRIVERS OF ECOSYSTEM CHANGE

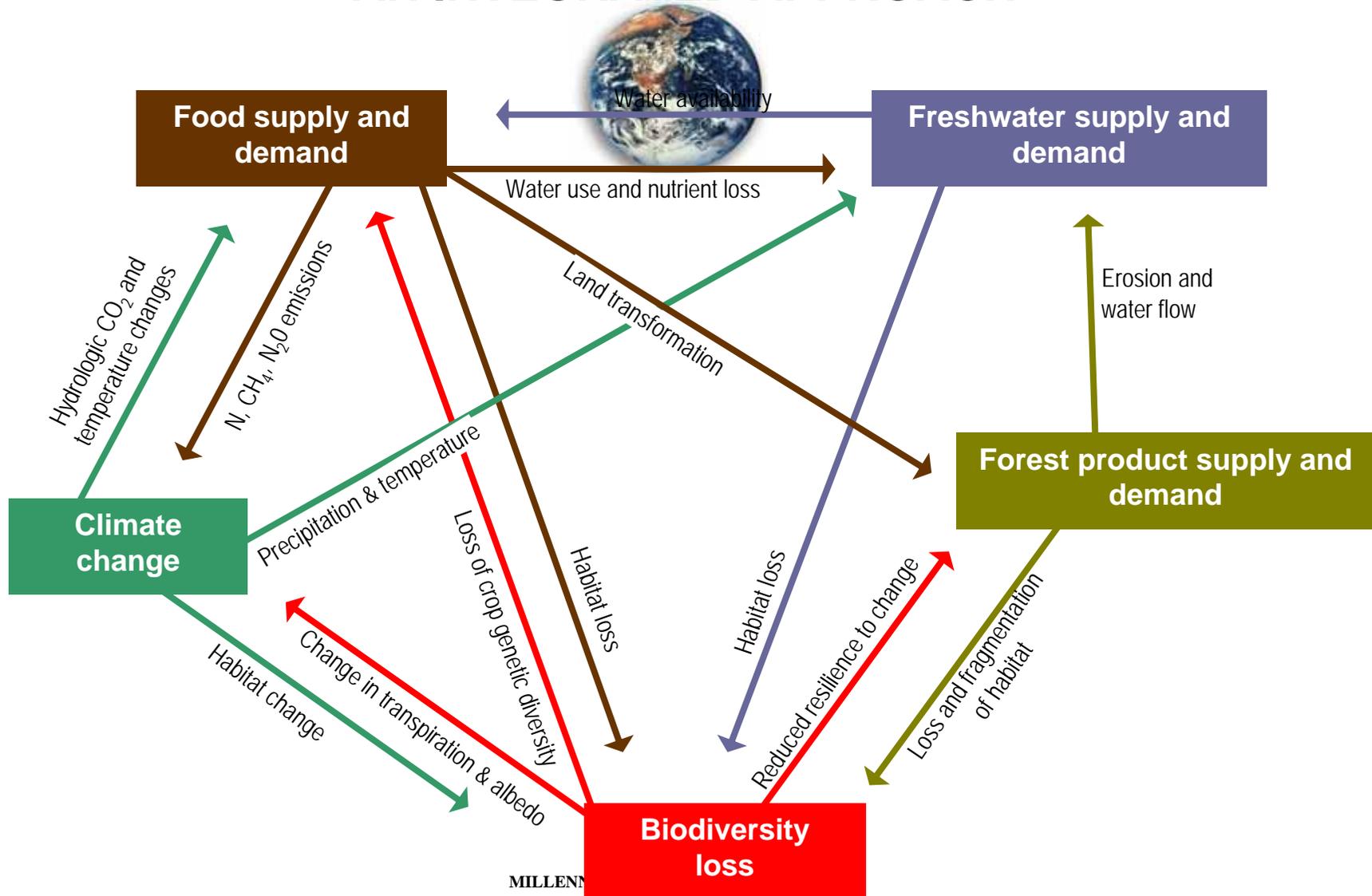
IPCC – focused on effect of a single driver on specific areas

MA – examines impact of multiple drivers on whole ecosystems

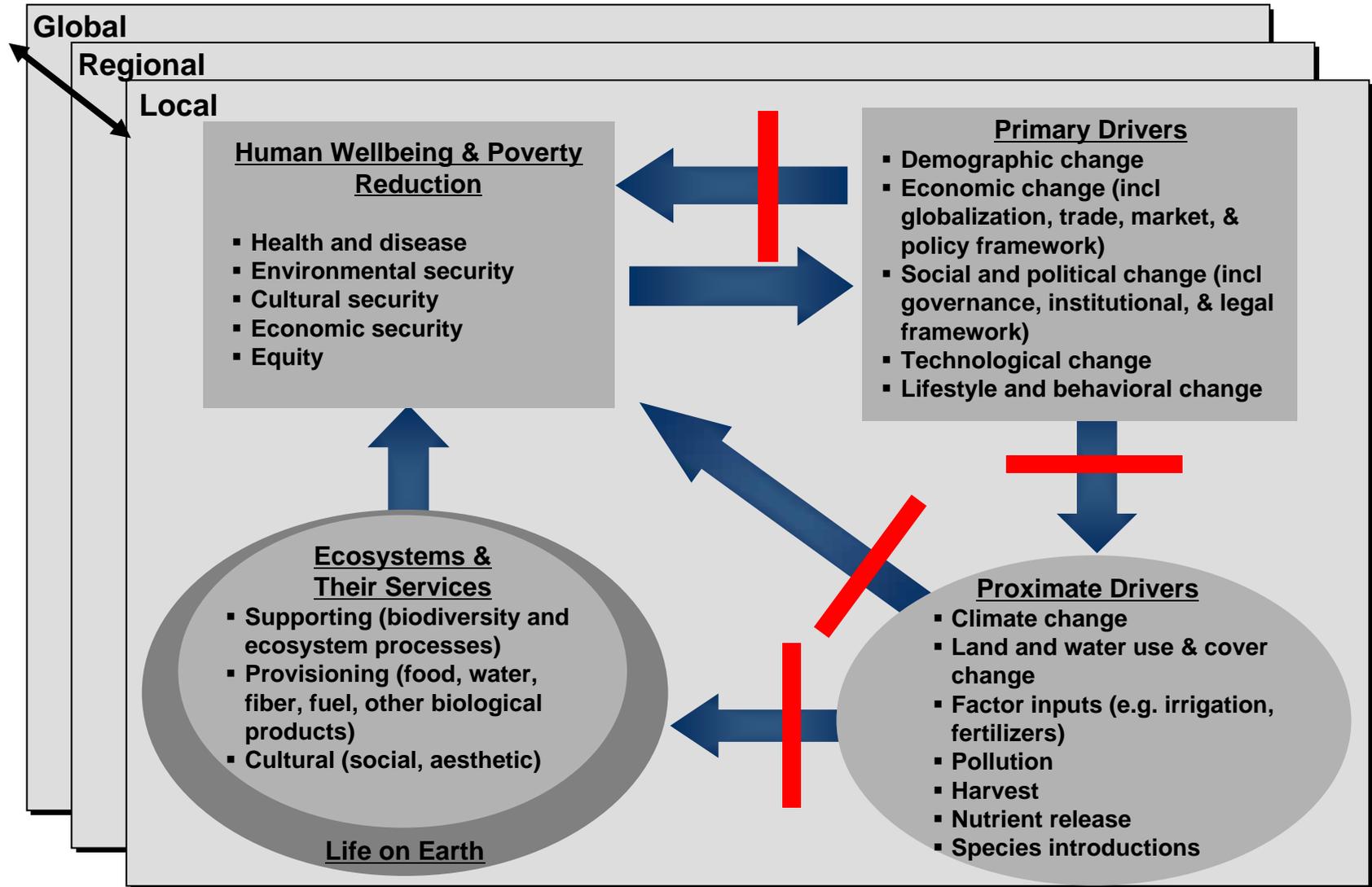


MILLENNIUM ECOSYSTEM ASSESSMENT

COMPLEXITY OF ECOSYSTEM ISSUES REQUIRES AN INTEGRATED APPROACH



MA CONCEPTUAL FRAMEWORK



 = Strategies and Interventions

ECOSYSTEM SERVICES ARE THE BENEFITS THAT PEOPLE OBTAIN FROM ECOSYSTEMS



Provisioning -

Goods produced or provided by ecosystems

- food
- fresh water
- fuel wood
- fiber
- biochemicals
- genetic resources

Regulating -

Benefits obtained from regulation of ecosystem processes

- climate regulation
- disease control
- flood control
- detoxification

Cultural -

Non-material benefits obtained from ecosystems

- spiritual
- recreational
- aesthetic
- inspirational
- educational
- communal
- symbolic

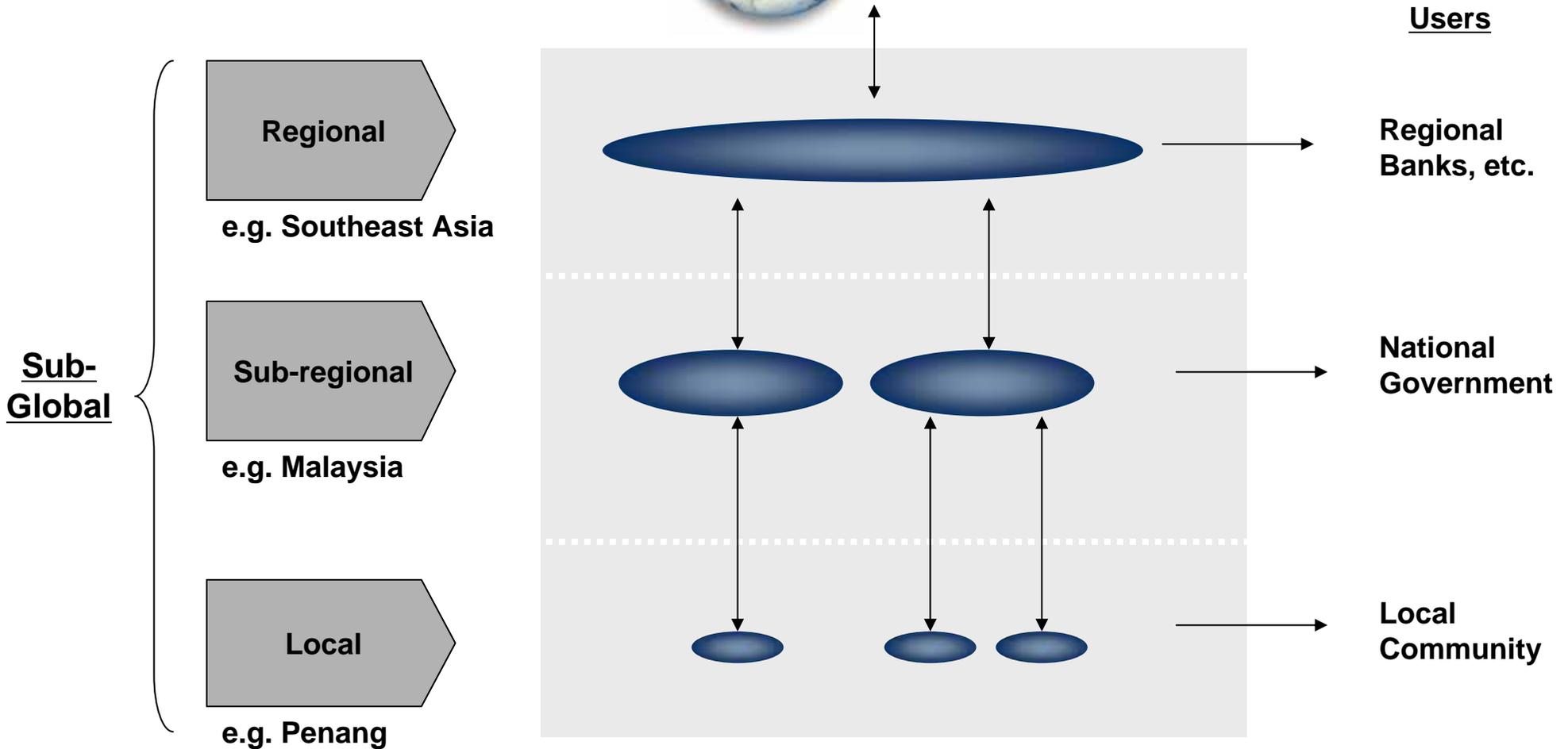
Supporting - Services that maintain the conditions for life on earth

- Soil formation
- Nutrient cycling
- Pollination

THE MA IS A MULTI-SCALE ASSESSMENT

With Multiple Layers Of Nesting

Global Assessment: Conditions, Scenarios, Responses



WHY A MULTI-SCALE ASSESSMENT?



Findings of a multi-scale assessment will differ from those of a single-scale assessment

- **As a result of information and perspectives from other scales**

Some variables and processes are scale-dependent

- **Cannot assume that results at one scale are automatically valid at another**
- **“Big” processes are often “slow”; “small” processes often “fast”**

Some processes have ‘cross-scale’ impacts

- **Transfer of water, energy, nutrients across boundaries**

People will have different perspectives on ecosystem services (and “disservices”) at different scales

AGENDA



Introduction

Assessment design and methodology

Governance and structure

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Sub-global assessments

Getting involved

A BROAD SPECTRUM OF SPONSORS AND DONORS

Contributions Are Both Financial And In-Kind



Financial contributions

Sponsors

- Global Environment Facility (\$7M)
- United Nations Foundation (\$4M)
- Packard Foundation (\$2.4M)
- World Bank (\$2M)

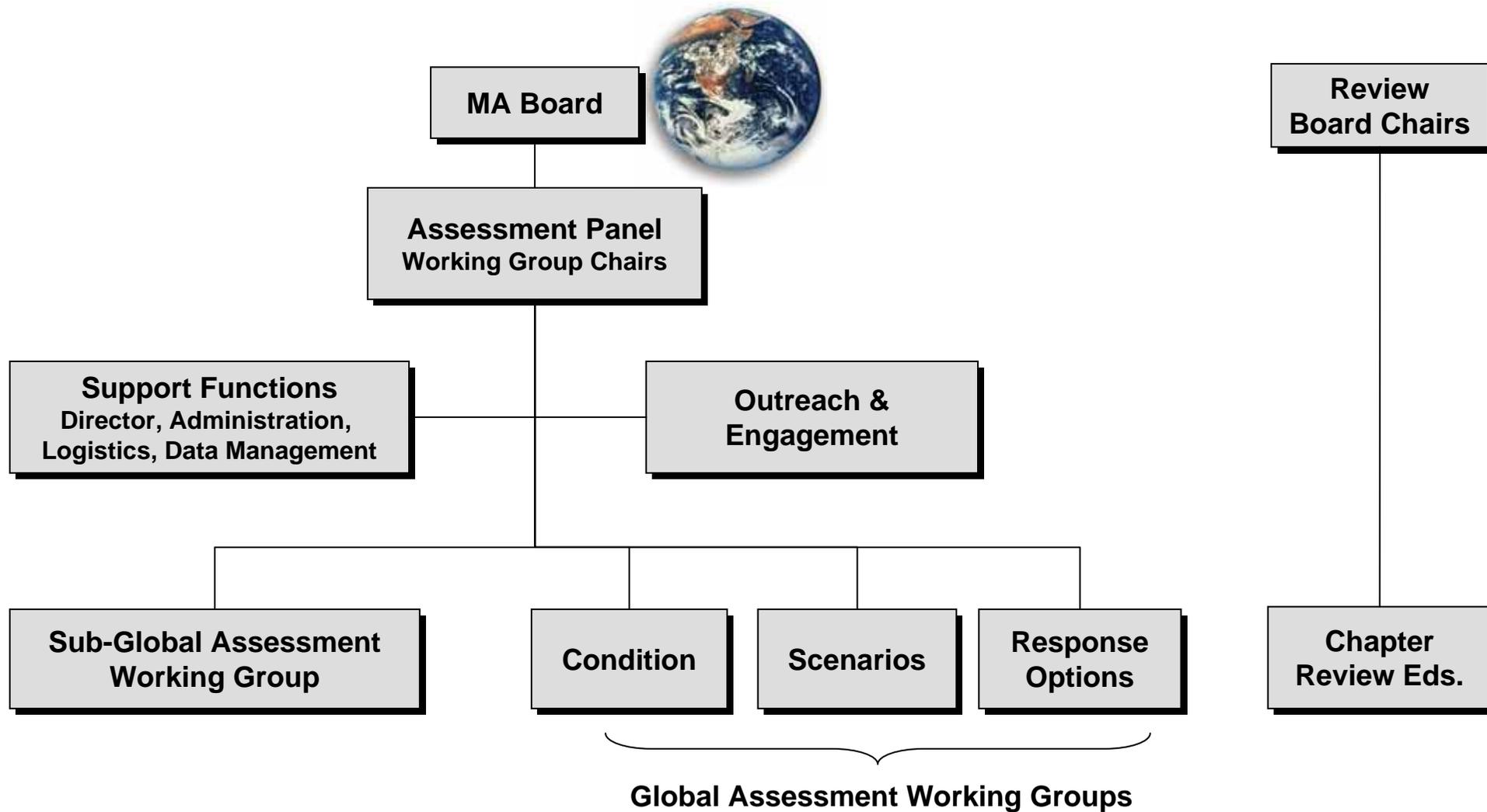
Other Donors

- United Nations Environment Program (\$0.8M)
- Government of Norway (\$0.5M)
- Rockefeller Foundation
- NASA

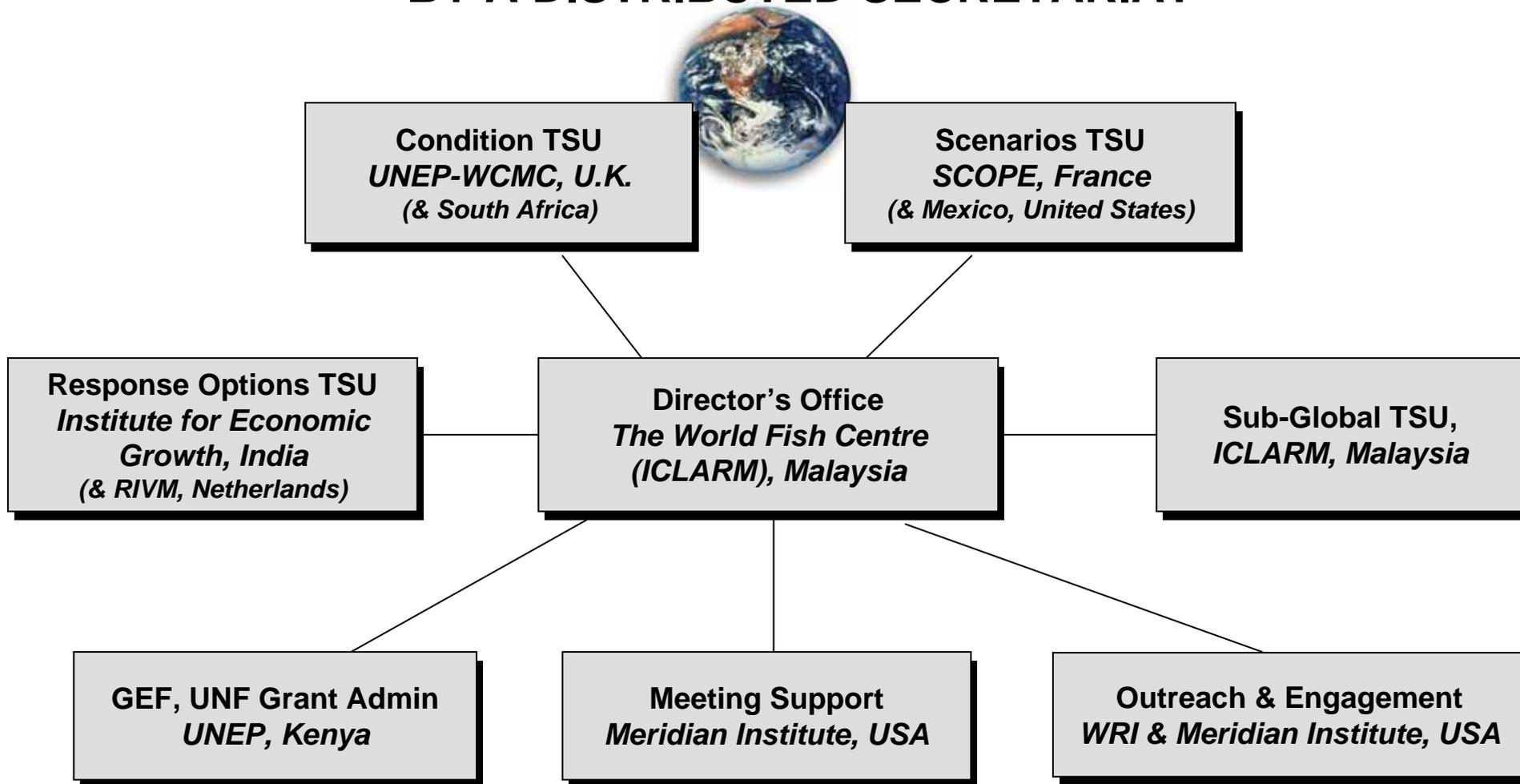
In-kind contributions

- Government of Norway
- Government of China
- European Commission
- FAO, UNDP, WHO, UNESCO, UNEP
- NASA
- ICRAF, ICLARM
- Numerous other countries and institutions are supporting travel costs of experts

MA ORGANISATIONAL SETUP



THE WORK OF THE MA IS SUPPORTED BY A DISTRIBUTED SECRETARIAT



AGENDA



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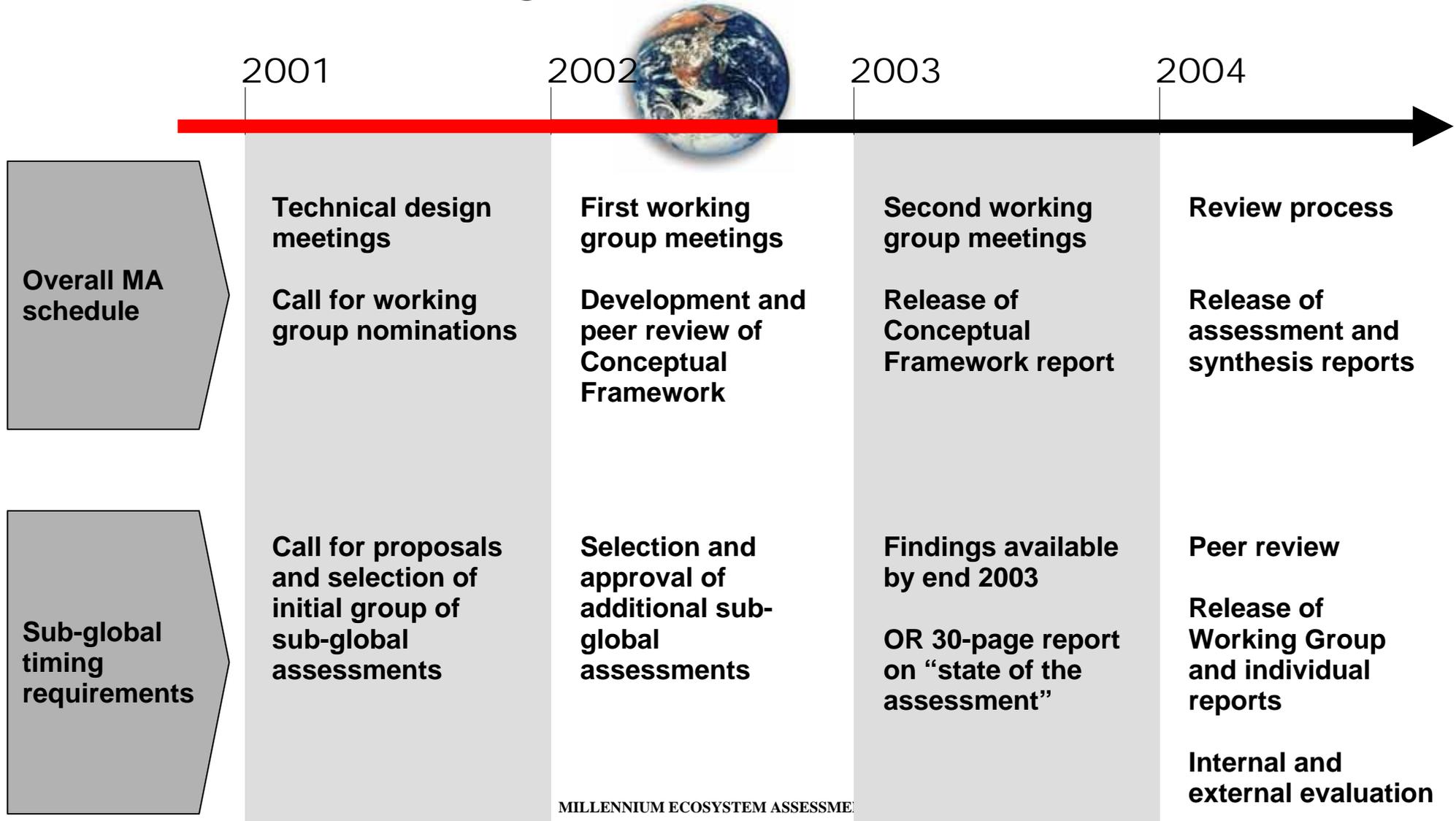
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THE MA PROCESS IS WELL UNDERWAY...

Sub-Global Timing Critical Within The Broader MA Process



...WITH KEY DELIVERABLES AS WORK PROGRESSES



Conceptual Framework 2003

- First major product of the MA process
- Sets the stage for the global assessment
- Provides guidance for the sub-global assessments

Assessment Reports 2004

- Sub-Global Assessment
- Condition/Trends Assessment
- Scenario Assessment
- Response Options Assessment
- Summary Volume (Summaries for Decision-Makers from 4 reports)

Synthesis Reports

- Biodiversity (2004)
- Desertification (2005)
- Wetlands (2005)
- Private sector (2005)
- Human well-being (2005)

Outreach & Communications

- Radio, documentaries, internet
- Partnerships to enable distribution to broader audience

MA GLOBAL WORKING GROUPS ARE ASSESSING GLOBAL CONDITIONS, SCENARIOS AND RESPONSES



Conditions Working Group

- What is the current condition and historical trends of ecosystems and their services?
- What have been the consequences of changes in ecosystems for human well-being?

Scenarios Working Group

- Given plausible changes in primary drivers: what will be the consequences for ecosystems, their services, and human well-being?

Responses Working Group

- What can we do about it?

Sub-Global Working Group: all of the above. . .

. . .at sub-global scales

CONDITIONS WORKING GROUP



Analysis of major ecosystem services

- **Provisioning: e.g. fresh water, food, fuel**
- **Supporting: e.g. nutrient cycling, soil fertility, climate regulation**
- **Cultural: e.g. spiritual, social, aesthetic**

Chapter templates include

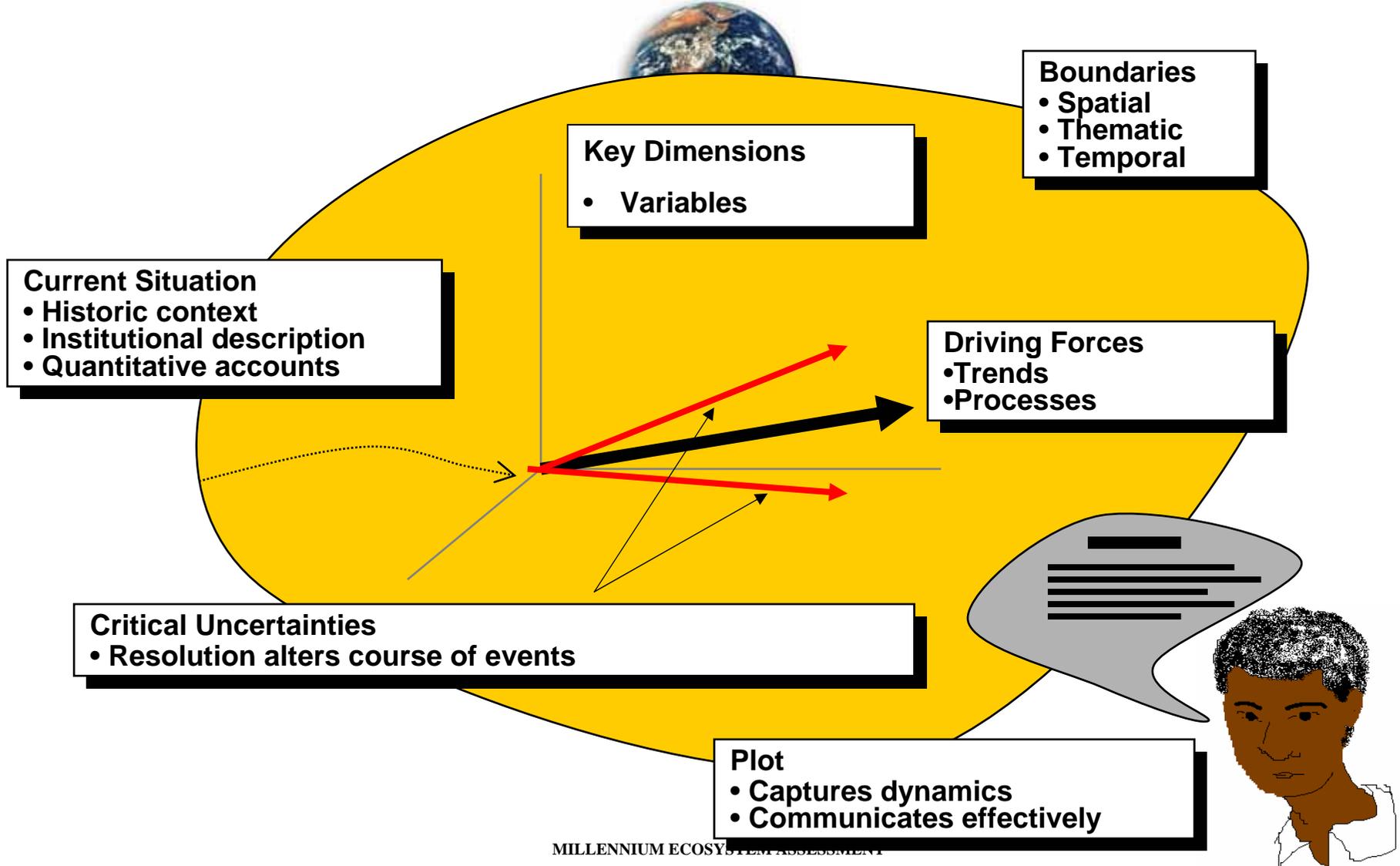
- **Historical trends in demand and supply**
- **Proximate and ultimate causes of changes**
- **Consequences of change on services human well-being**

Conditions and causality

- **Analysed by major systems: e.g. cultivated systems, forest systems, urban systems, coastal systems, desert systems**

SCENARIOS WORKING GROUP

Anatomy Of Scenarios



RESPONSES WORKING GROUP



Conceptual framework for evaluating responses

- **Typology of responses: e.g. institutions, decision-makers**
- **Assessing effectiveness: criteria, indicators, evaluation**

Assessment of current and past responses

- **By major ecosystem services**

Ingredients for successful future responses

- **Lessons learned**
- **Priority-setting**
- **Responses in global and regional scenarios**
- **Uncertainties**

THE MA HAS A PROGRAM OF CAPACITY-BUILDING

With A Long-Term Vision Beyond The Timeframe Of The MA



Fellowship program

- **For younger scientists involved as LAs in the working groups, including from the sub-global assessments**
- **Training workshops and exposure to working group meetings**

Training on scenario-building for the sub-global assessments

- **In conjunction with the Scenarios Working Group meeting in March 03**

Distance-learning/online training materials

- **Introduction to assessment processes, products and participation**

Partnerships and exchanges (see also following slides)

- **Structured interactions between global and sub-global teams on scenarios and modelling (e.g. SAfMA and RIVM)**

Ad-hoc opportunities as they arise

AGENDA



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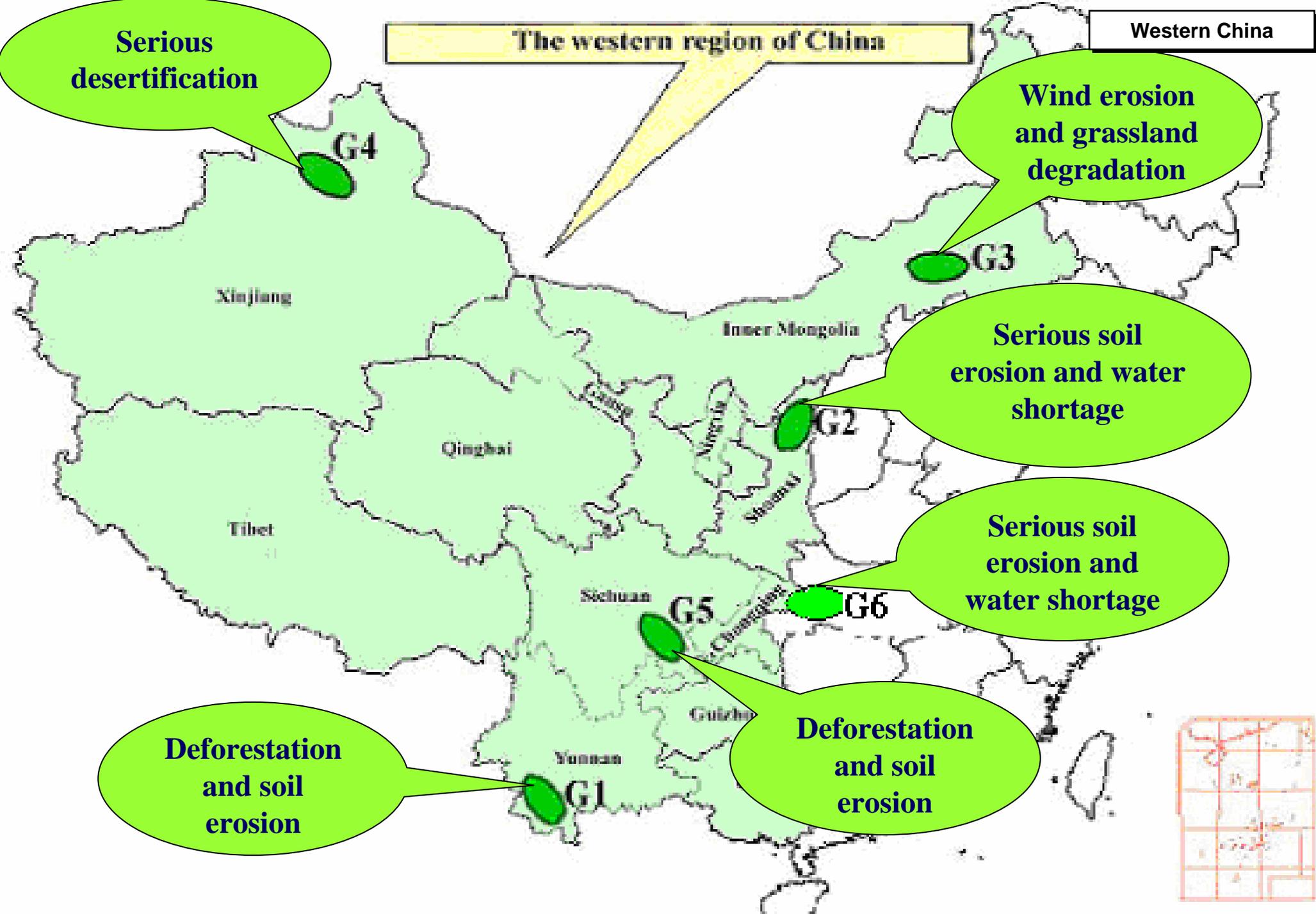
Getting involved

OVERVIEW OF SUB-GLOBAL ASSESSMENTS UNDER THE MA



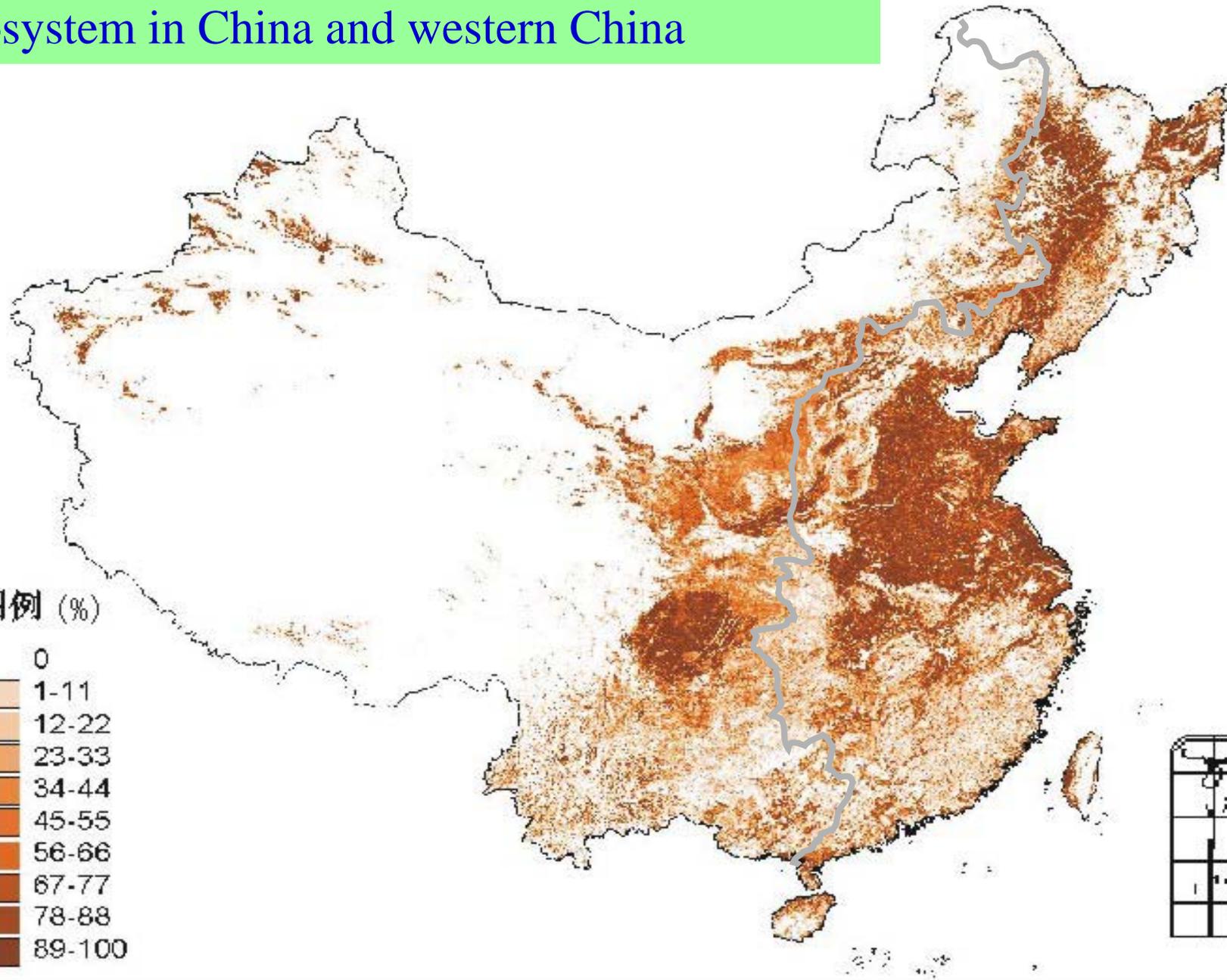
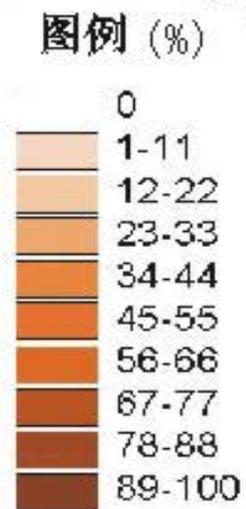
MILLENNIUM ECOSYSTEM ASSESSMENT

(1) ASB: Alternatives to Slash and Burn – multiple local sites worldwide



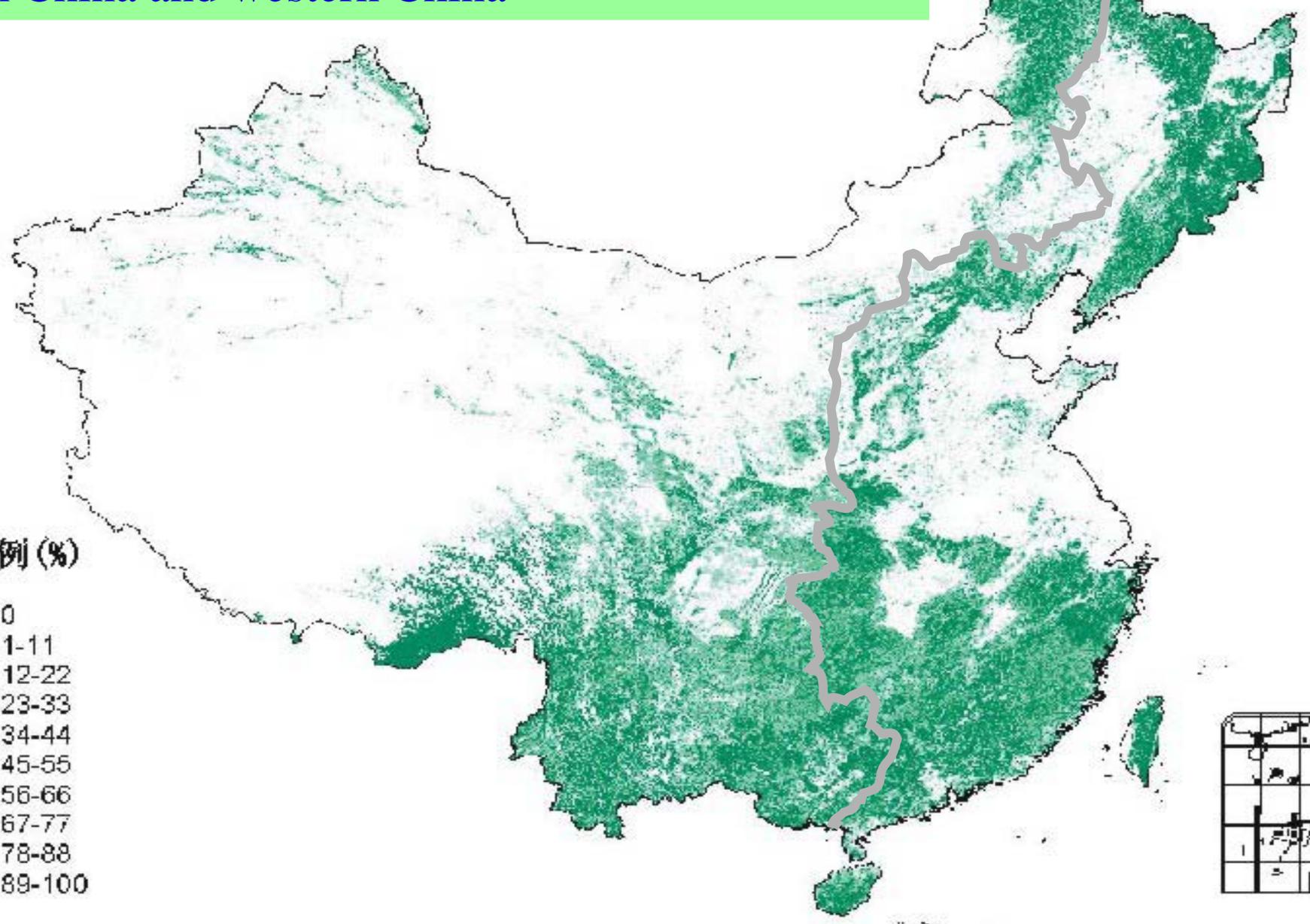
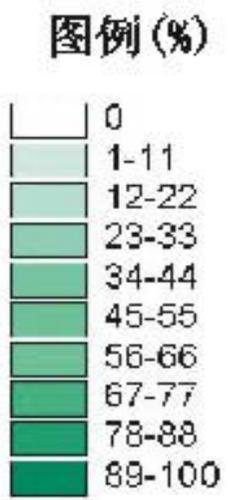
The spatial distribution of agricultural ecosystem in China and western China

Western China



The spatial distribution of forest ecosystem in China and western China

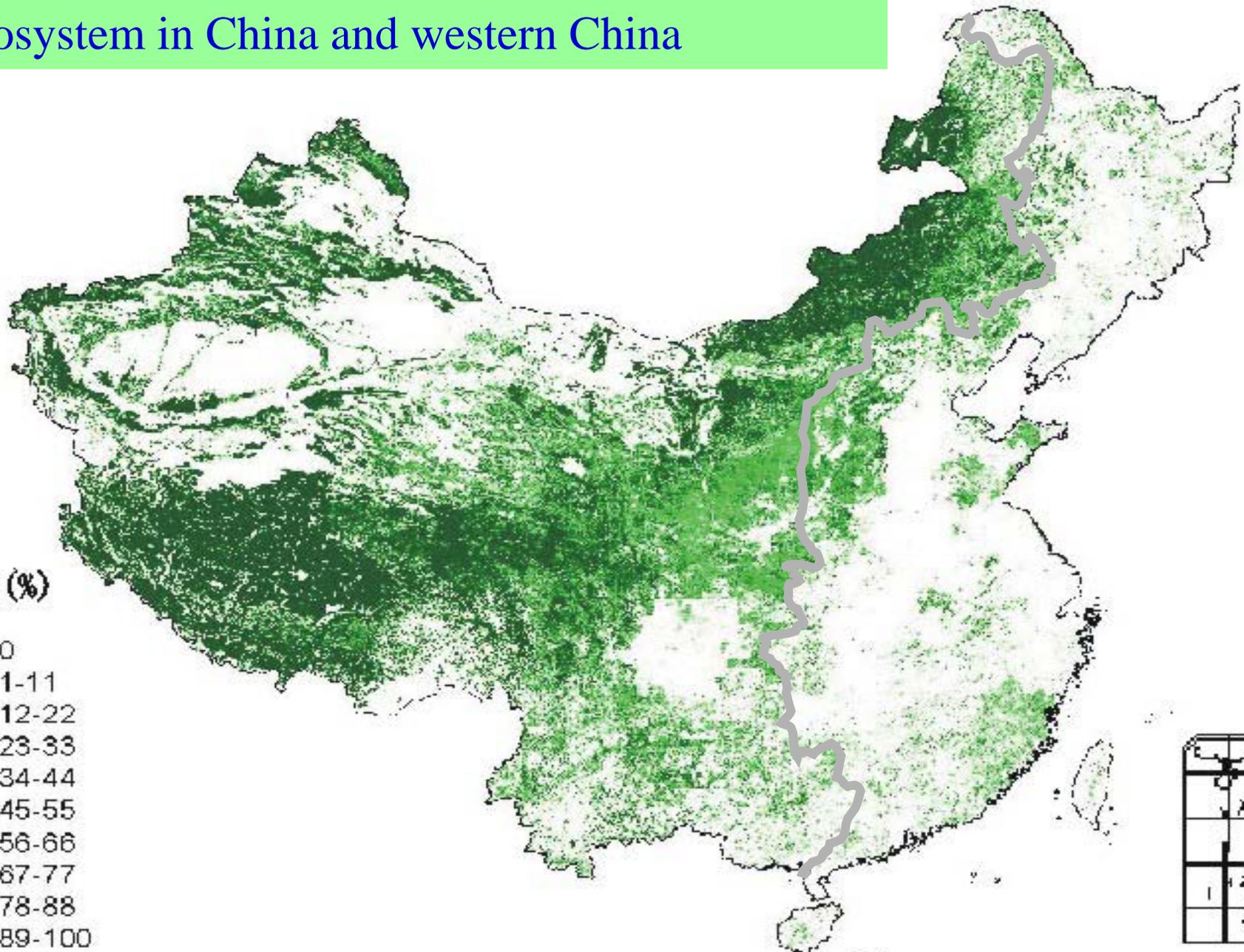
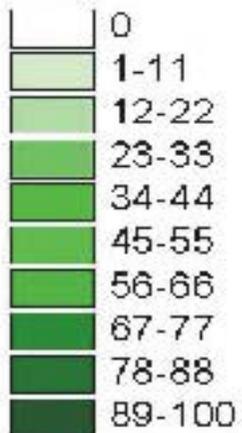
Western China



The spatial distribution of grassland ecosystem in China and western China

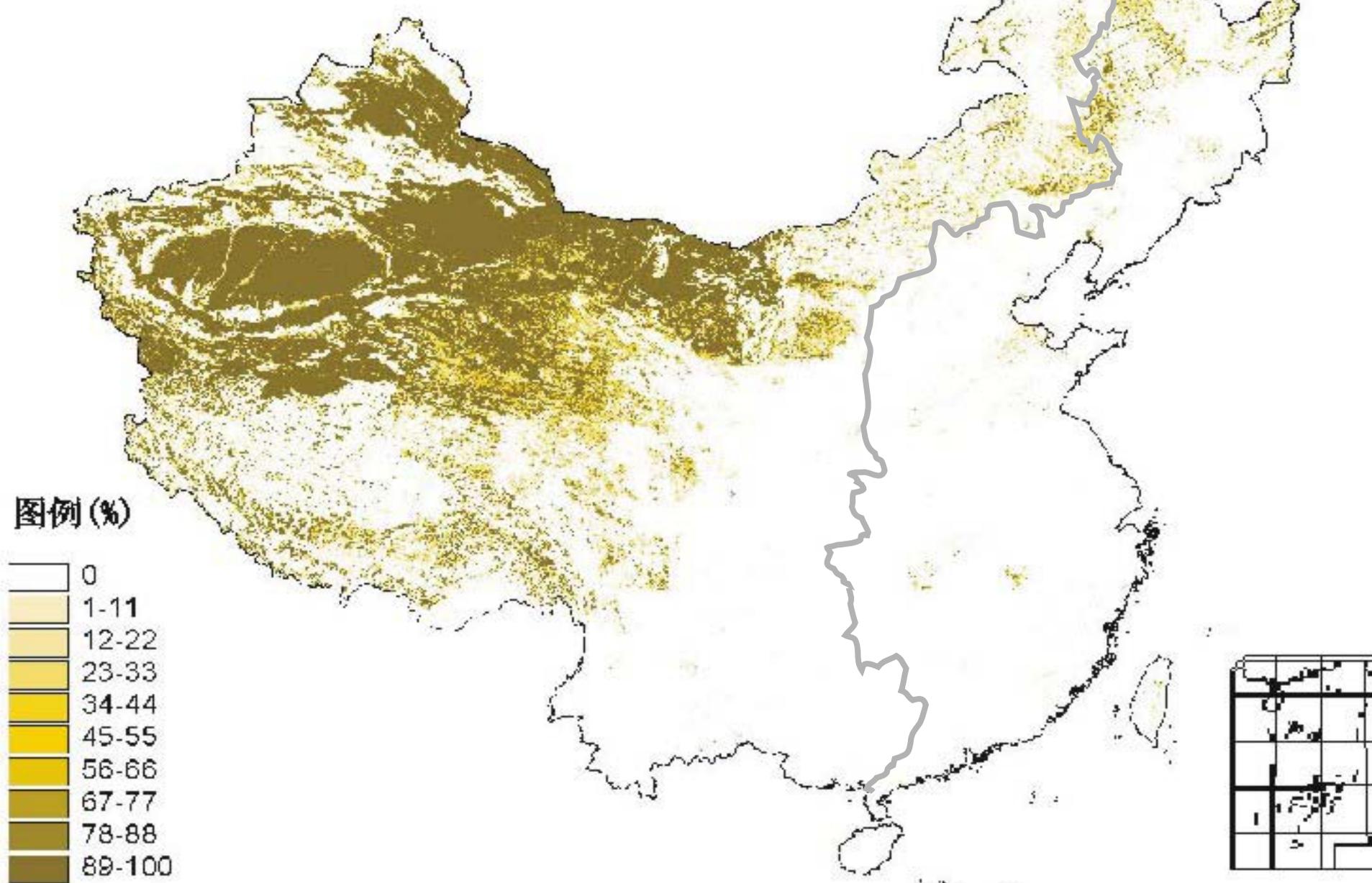
Western China

图例 (%)



The spatial distribution pattern of unused land in China and western China

Western China



The screenshot displays the ArcView GIS interface with several key components:

- Table of Contents:** A table titled "土地资源汇总" (Land Resource Summary) showing data for various counties. The selected row is 652801.
- Main Map (View2):** A satellite-style map showing land use patterns with red and white areas.
- Photo:** A photograph of a river valley in a semi-arid region.
- Map Legend (View1):** A legend for the main map, including categories like "森林" (Forest), "灌木" (Shrubland), "疏林地" (Barren land), "其它林地" (Other forest land), "高覆盖度" (High coverage), "中覆盖度" (Medium coverage), "低覆盖度" (Low coverage), "沟渠" (Canals), "湖泊" (Lakes), "水塘" (Ponds), and "冰川" (Glaciers).
- Administrative Boundaries (View3):** A map titled "县级行政边界图" (County-level administrative boundary map) showing county outlines in green.
- Province List:** A list of Chinese provinces with their corresponding codes, with "Xinjiang.sh" selected.

County	水田	旱地	有林地	灌木林
652801	0.00	849289.00	80877.73	20162.8
652822	0.00	769368.94	189842.16	440640.3
652823	0.00	737745.75	346511.47	547615.7
652824	0.00	121746.98	25988.42	839481.0
652825	0.00	206764.22	57818.87	449862.6
652826	0.00	651008.88	599.83	78.2
652827	0.00	594239.00	777420.50	42535.2
652828	0.00	430491.78	195799.09	17214.3
652829	0.00	372065.38	922.03	8731.6
652901	13522.70	2223778.50	4582.91	132060.6
652922	96796.96	1240827.38	147230.50	62644.4

ASSESSMENT IN VIETNAM: DOWNSTREAM MEKONG RIVER WETLANDS (I)



Coordinating institution

- Institute of Geography, National Centre for Natural Science and Technology (NCST)

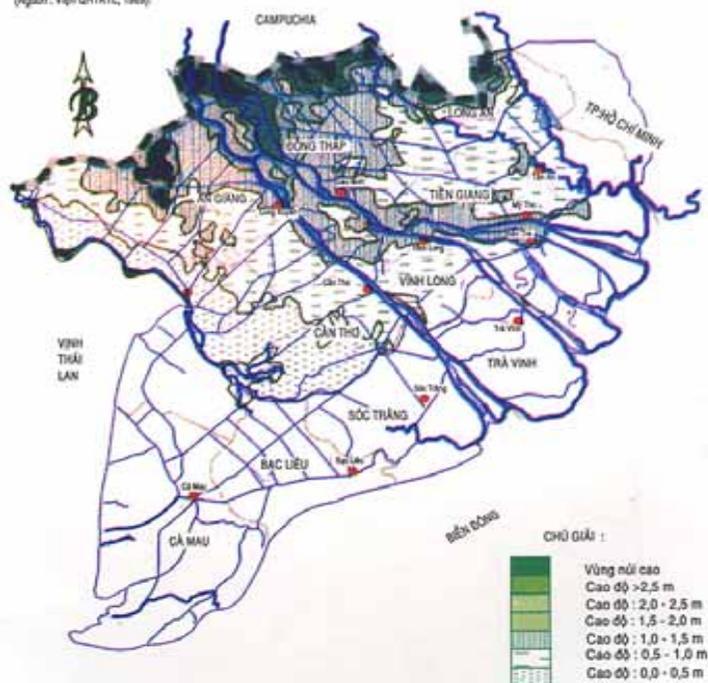
Partners

- Respective Departments of Agriculture and Rural Development; of Science and Technology; and of Aquaculture of provinces in the study area

Collaborative institutions

- University of Can Tho
- Vietnam National Mekong River Commission
- Institute of Ecology and Biological Resources
- Centre of Mangrove Research (in Ca Mau)

Hình 3 : Bản đồ địa hình khu vực ngập lũ
Đồng Bằng Sông Cửu Long.
Tỷ lệ 1/1.500.000
(Nguồn : Viện QNTKT, 1989)



Hình 3. BẢN ĐỒ ĐỊA HÌNH KHU VỰC NGẬP LŨ ĐỒNG BẰNG SÔNG CỬU LONG

ASSESSMENT IN VIETNAM: DOWNSTREAM MEKONG RIVER WETLANDS (II)



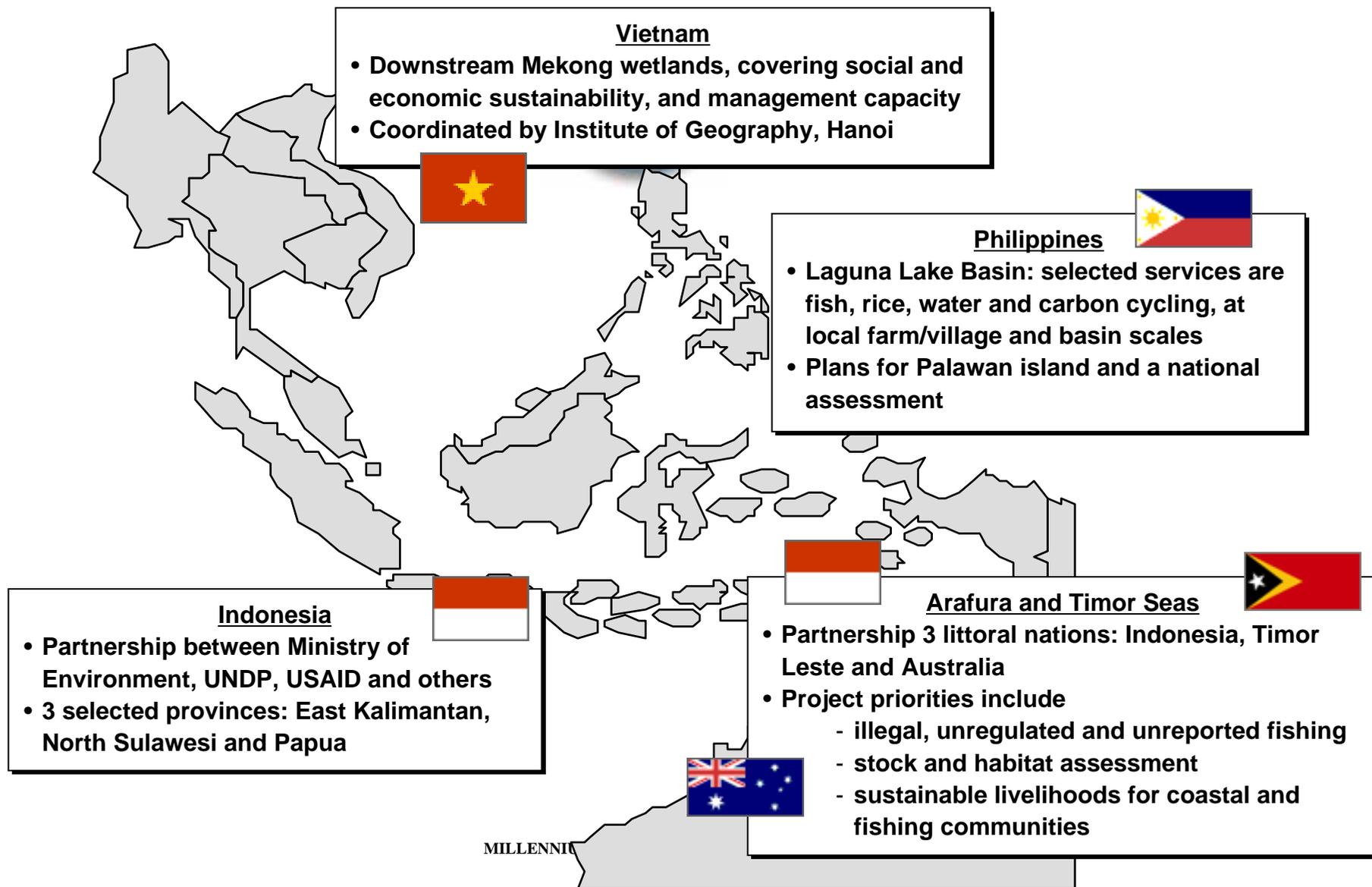
Focal issues and key questions

- What is current situation of three typical wetland ecosystems?
- What have been the changes in the ecosystems in terms of biodiversity, biotopes, etc. ?
- What about the human Impacts ecosystem change? (overpopulation, over-exploitation, toxic chemicals, etc.)
- Trends and scenarios for next 10, 20 years
- Planning, strategies and tools for policy, development and management (response options)

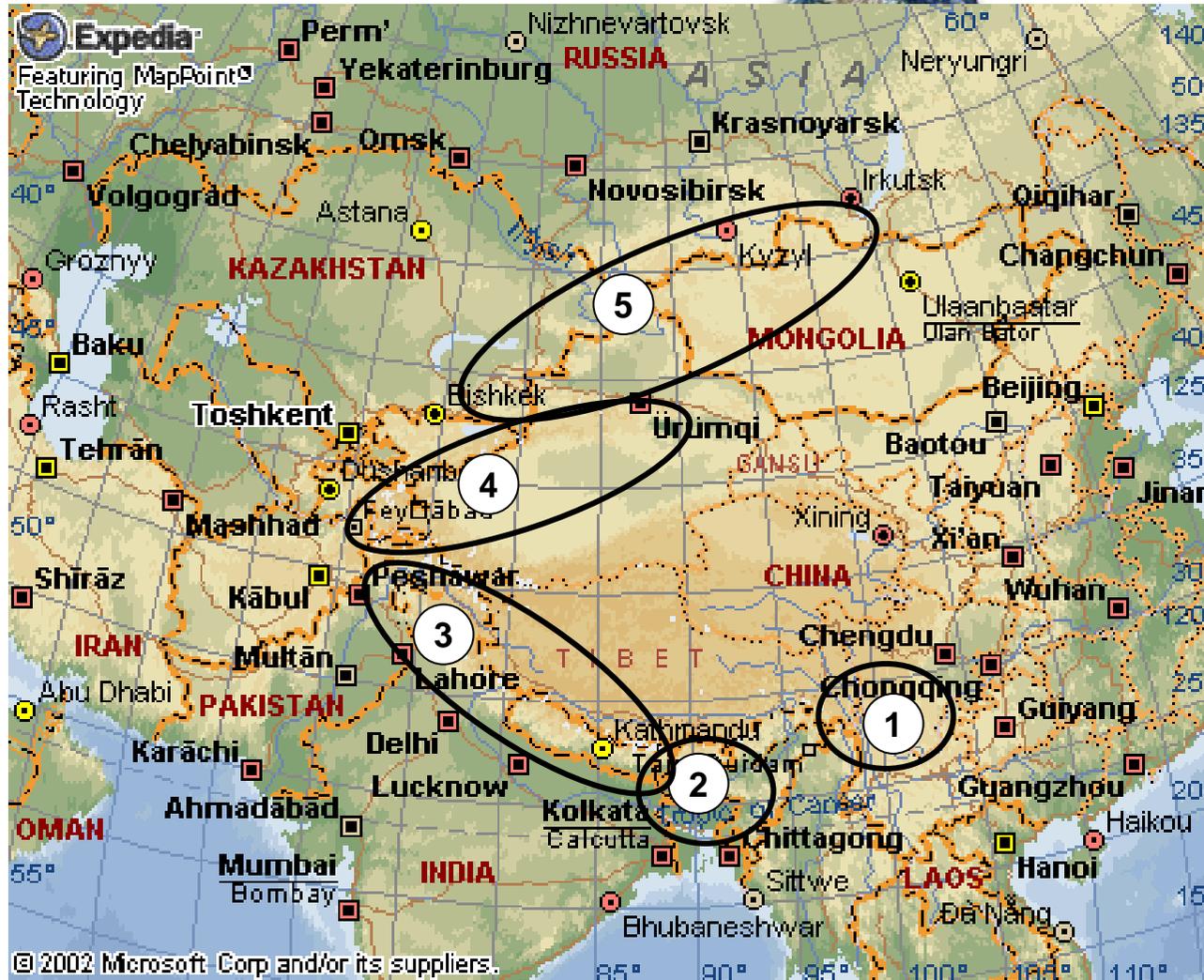
Ecosystem goods and services

- Agricultural products (rice, fruits, vegetables, cattle and poultry)
- Aquacultural products (bred/caught fish and shrimp)
- Processed products
- Construction materials
- Riverport and seaport activities
- Timber and non-timber forest products
- Eco-tourism

SUB-GLOBAL ACTIVITIES UNDERWAY IN SE ASIA



EXCITING PROSPECTS FOR A “GREAT ASIAN MOUNTAINS ASSESSMENT”



- 1 Upstream region of the Great Rivers, Yunnan, China (Yunnan University, Kunming)
- 2 Eastern Himalayas, India (ATREE, Bangalore)
- 3 Hindu Kush – Himalayas (ICIMOD, Katmandu)
- 4 Pamirs and Tyan-shan (CAREC, Almaty)
- 5 Altai-Sayan Ecoregion (WWF Russia, Krasnoyarsk)

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WAYS OF GETTING INVOLVED



Provide input on issues that the MA should address

- **What are the priorities for information and methods as seen from the perspective of potential users?**

Participate as experts in the global assessment

Participate in the review process (government, academic, private sector, NGOs)

Apply MA findings, information and data within country or region

Incorporate MA methods in national and sub-national assessments and planning processes

MECHANISMS FOR INVOLVEMENT



National delegations to Conventions

MA Affiliated Scientific Organizations and National Academies of Sciences (ASO)

Sub-global assessments

- **SGAs are self-generated and self-funded (i.e., MA doesn't decide where they take place). Opportunity to lay groundwork for assessments that would continue after the MA is concluded**

MA User Forums

- **Preliminary meetings held in 20 countries involving 700 people**
- **Informal multi-sectoral groups, linked to ongoing national environmental and sustainable development planning activities**
- **Groups will**
 - **Help to coordinate input into the MA (e.g., review processes)**
 - **Receive MA information and documents**
 - **Help to ensure outreach to relevant users**

VISIT THE MA WEBSITE !



<http://www.millenniumassessment.org>

IMPACT OF CLIMATE CHANGE ON THE COASTAL ZONE

- 1. Impacts on the Natural and Human Systems**
- 2. Impacts on the Asia and Pacific Region**
- 3. Conclusions**

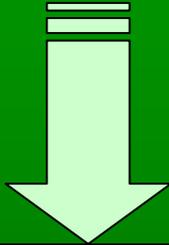
Nobuo Mimura
Center for Water Environment Studies
Ibaraki University, Japan

Purposes of Impact Study

- 1. To determine how serious climate change is to the society**
- 2. To identify the scale and intensity of potential impacts including economic costs, threshold (dangerous level) of climate change, etc**
- 3. To identify the most vulnerable sectors and areas in countries and regions to prepare adaptation**

These help to develop the best-mix policy of mitigation and adaptation.

Physical Impacts of SLR



Affected Systems

1. Inundation
2. Flooding
3. Erosion
4. Salt Water Intrusion
5. Changes in Sedimentation

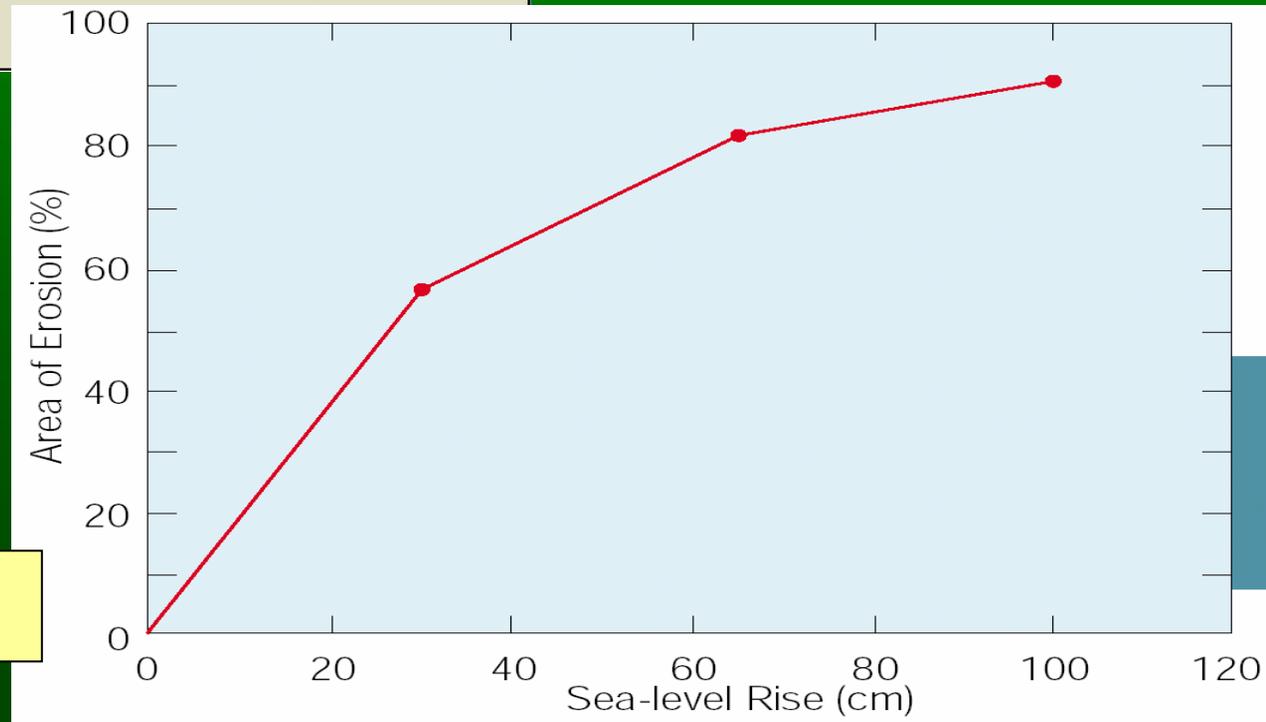
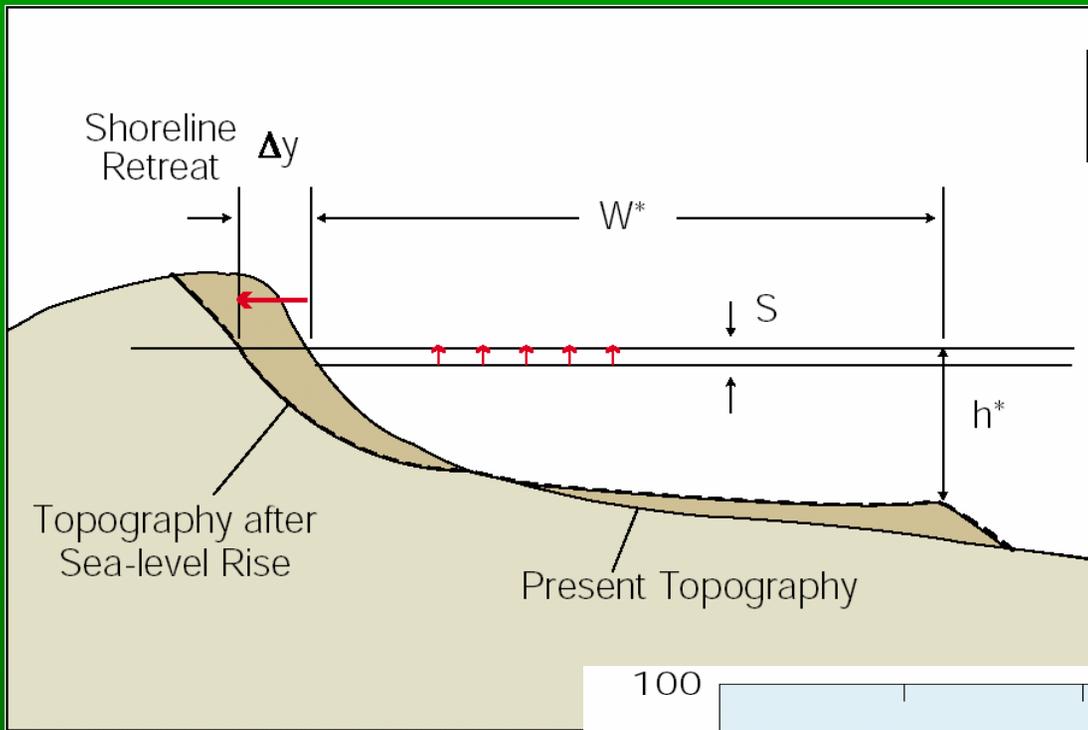
1. Natural System

- Sandy beaches
- Wetlands
- Mangrove
- Coral reef
- Delta

2. Socio-Economic System

- Disaster potential/ Cities
- Port and harbor
- Coastal protection/ Dike
- Power station
- Agriculture/ Fishery
- Tourism
- Social/Cultural effects

Bruun Rule Model



Japanese Coasts



Coral Bleaching



▲写真1 白化前のサンゴ



▲写真2 写真1と同じ種類のサンゴが白化した様子

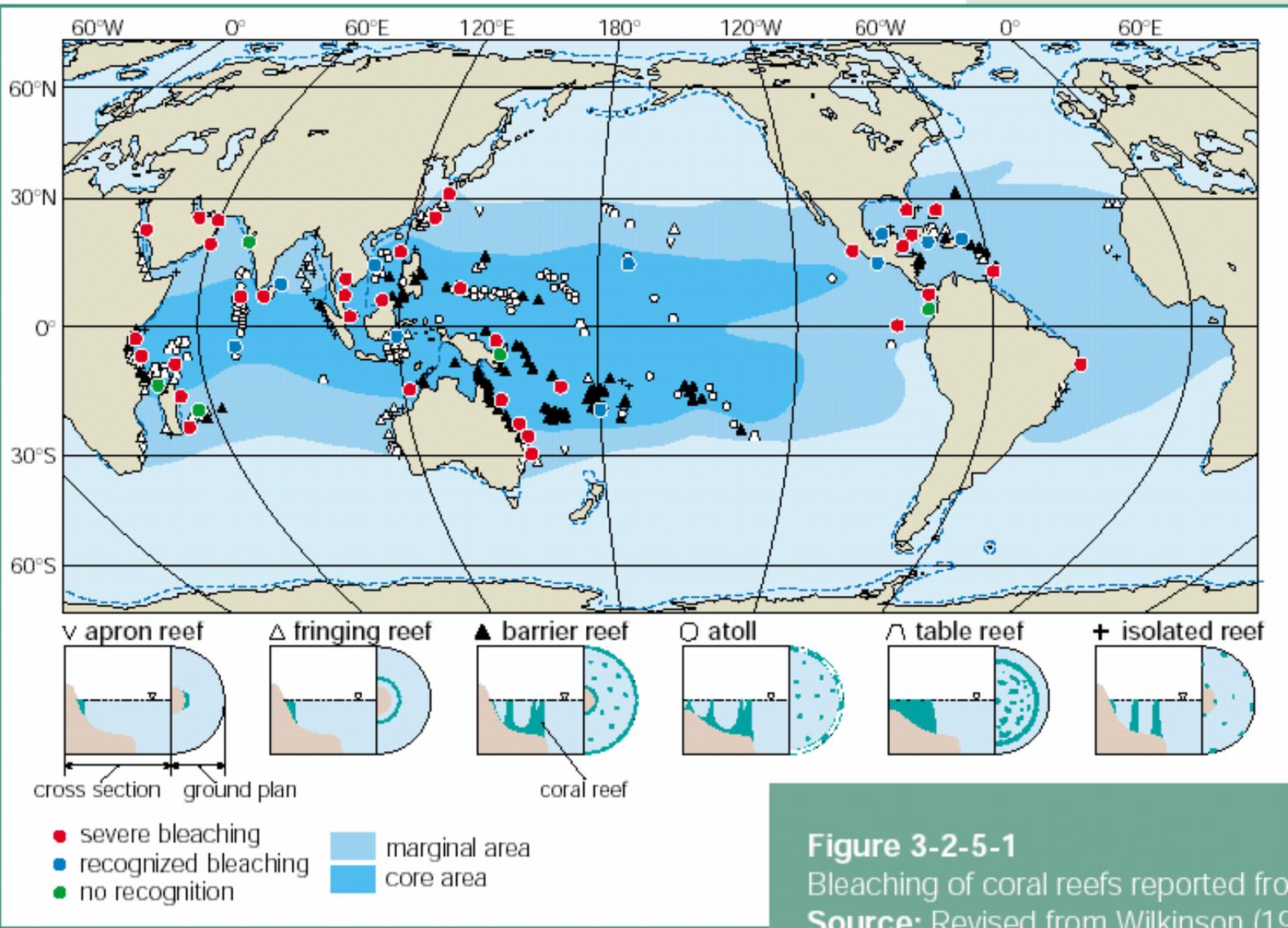
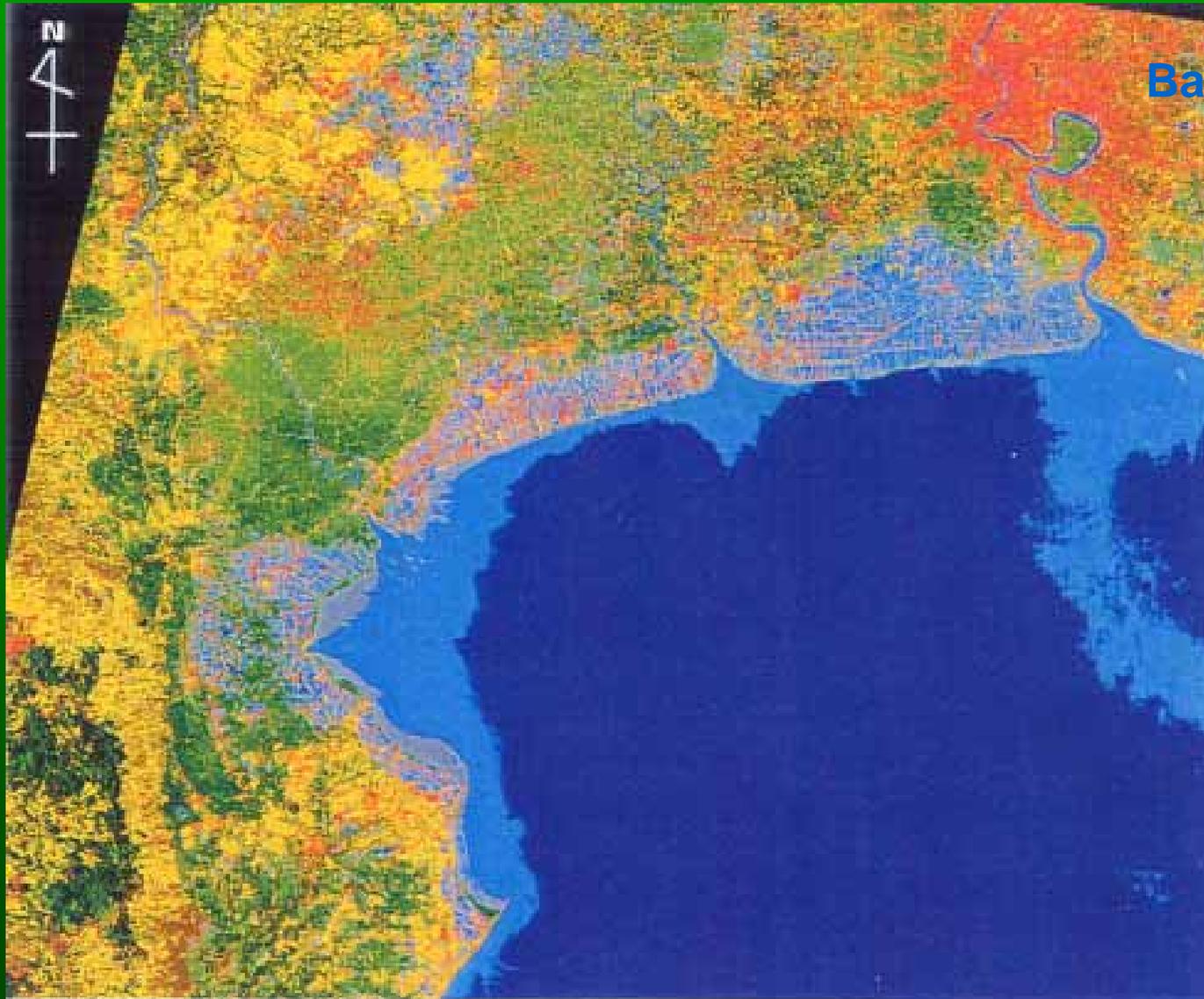


Figure 3-2-5-1
 Bleaching of coral reefs reported from 1997 to 1998.
Source: Revised from Wilkinson (1998), Hori (1980)

Mangrove Erosion in Thailand



Head of the Bay of Thailand



Bangkok



Disaster Potential of Japan

	Present			0.3 m rise			0.5 m rise			1.0 m rise		
	Area	Popu-lation	Assets									
Mean water level	364	1,020	34	411	1,140	37	521	1,400	44	679	1,780	53
High water level	861	2,000	54	1192	2,520	68	1412	2,860	77	2339	4,100	109
High tide level (Storm surge or Tsunami)	6268	11,740	288	6662	12,300	302	7583	13,580	333	8893	15,420	378

Some Thresholds of Impacts

Ecosystem	Plants in high mountain Mangrove	Apparent effects for 2 increase Cannot survive for 45cm SLR
Agriculture	Rice	Heat effect by over 35 during flowering
Marine Ecosystem	Coral	Bleaching by 1-2 increase in water temperature
Coastal Zone	Sandy beach Port and coastal structure	Erosion of 57% beaches by 30cm SLR 100 billion US\$ of costs for 1mSLR
Human Health	Elder people	Increase of mortality rate for 33-35 of daily high temp.
Economy	Nations	Negative effects for 2-3 increase

Impacts on the Asia and Pacific Region

Assessment Method

Sea Level Scenarios

- 1 . Present HWL
- 2 . Present HWL+ Maximum Storm Surge (past 40 yrs)
- 3 . HWL in 2100 (1m SLR)
- 4 . HWL in 2100 + Maximum Storm Surge (past 40 yrs)

Primary Impacts

Inundated Areas, and Flooded Areas by Storm surge

Secondary Impacts

Population, Natural Systems, and Infrastructures

Sea Level Scenarios

Design Water Level

$$DWL = SLR + HWL \text{ by Tide} + \text{Storm Surge}$$



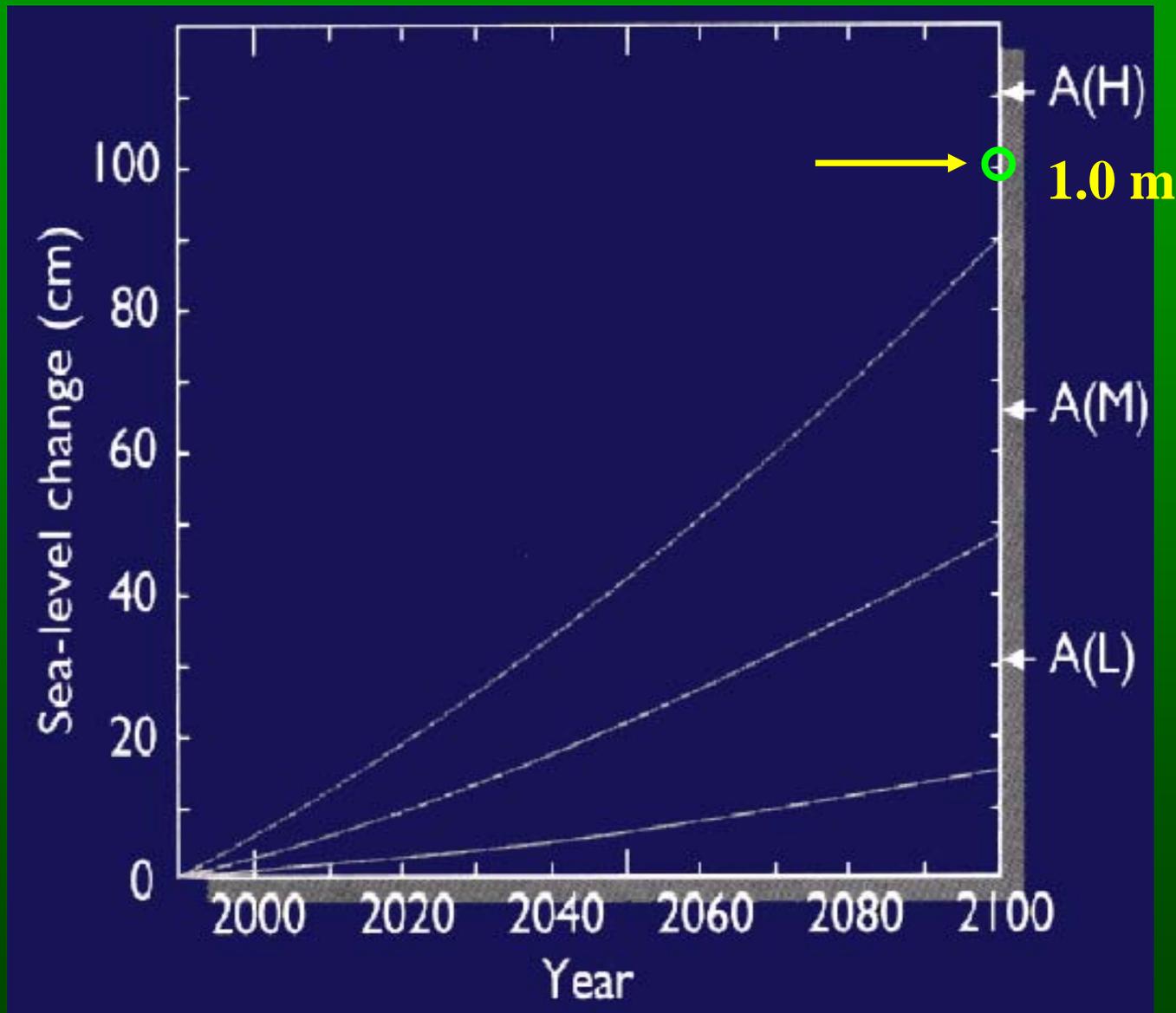
Global Database

SLR	IPCC estimation	IPCC SAR	1992	Global average
Topography	GTOPO30	EROS Data Center (US)	1993	0.5
Water Depth	ETOPO5	Nat. Geographic Data Center (US)	1988	5
Boundary	Nations World Political Bound.	Global GRASS Data	1982	4.8
Tide	Tide Tables	Hydrographic Dep. Japan	1999	points
Cyclones	World-wide Tropical Data Set	US NOAA	1842 ~ 1989	points on tracks
Population	Gridded pop. of the World	CIENEN (US)	1994	5
Future population	Long-term Prediction	World Bank	1996	Nation



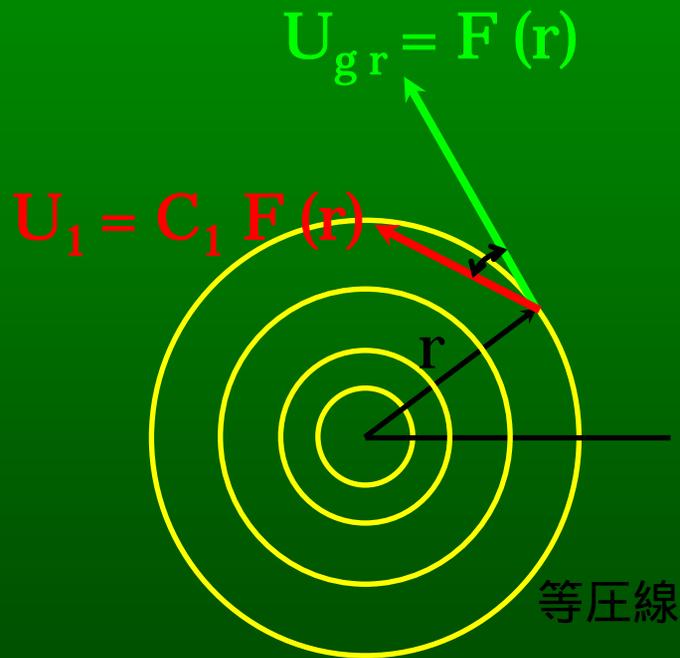
Create a data set with a uniform 1' grid

SLR Scenario

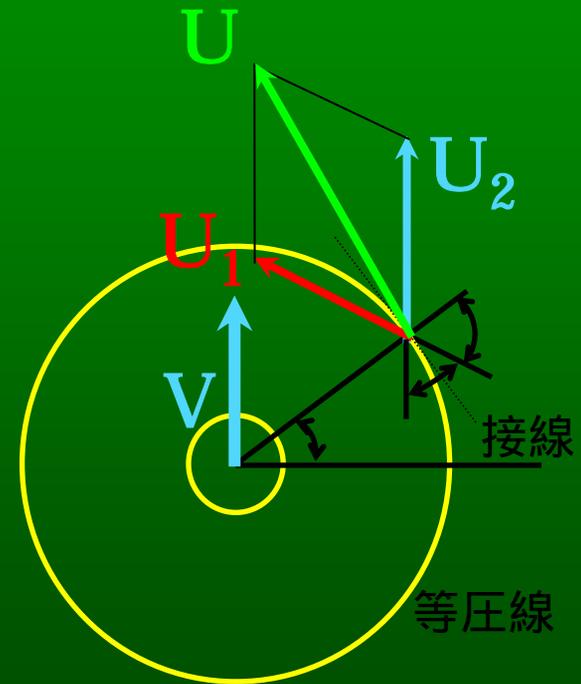


Winds Generated by a Typhoon

Geostrophic wind



Combination with typhoon movement



Estimate of Storm Surge from a Typhoon

$$p = p_c + \Delta p \cdot \exp\left(-\frac{r_0}{r}\right)$$

$$U_{gr} = \sqrt{(r\Omega \sin \varphi)^2 + \frac{\Delta p}{\rho} \frac{r_0}{r} \exp\left(-\frac{r_0}{r}\right)} - r\Omega \sin \varphi \equiv F(r)$$

$$U = U_1 \sqrt{1 + \left(\frac{C_2}{C_1} M\right)^2} - 2 \frac{C_2}{C_1} M \cos(\pi - \alpha - \theta)$$

$$M = \frac{V}{F(r_0)}$$

$$SS = 0.991 \cdot \Delta P + \frac{k \cdot U^2}{10^3 \cdot S} \ln \frac{h_0}{h'}$$

p_c : 台風の中心気圧

Δp : 台風中心の気圧低下

r_0 : 台風中心と最大風速の距離

r : 台風中心からの距離

U_{gr} : 傾度風の風速

U_1 : 海上風速(中心対称風)

U_2 : 場の風

U : 合成風速

V : 台風の進行速度

θ : 台風進行方向

α : 海上風向と傾度風向間の角度

φ : 台風中心の緯度

Ω : 地球自転の角速度(7.29×10^{-5})

ρ : 空気の密度

C_1, C_2 : 定数

SS : 高潮偏差

k : 4.8×10^{-2}

S : 平均海底勾配

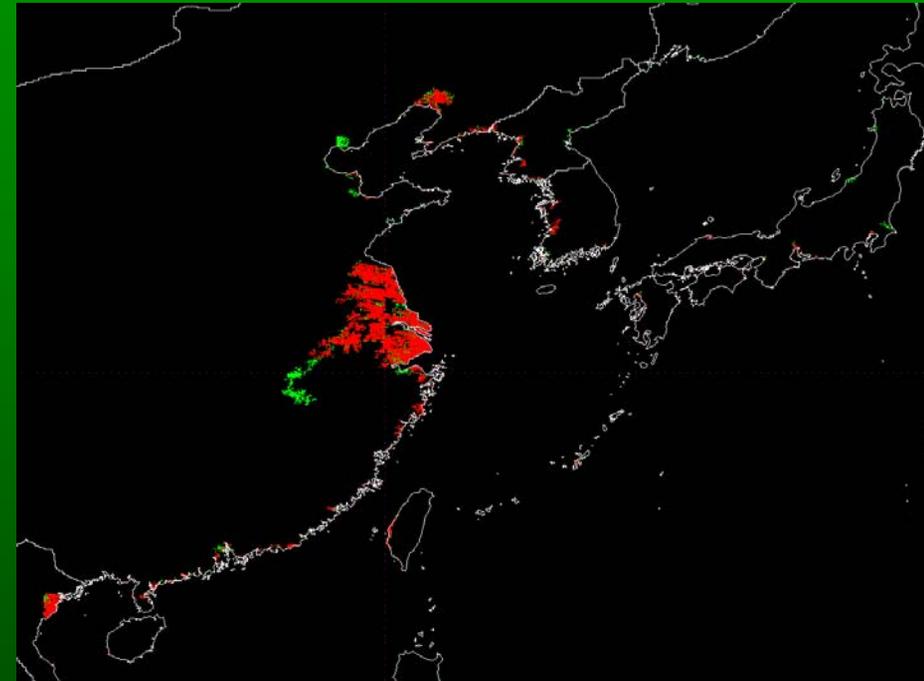
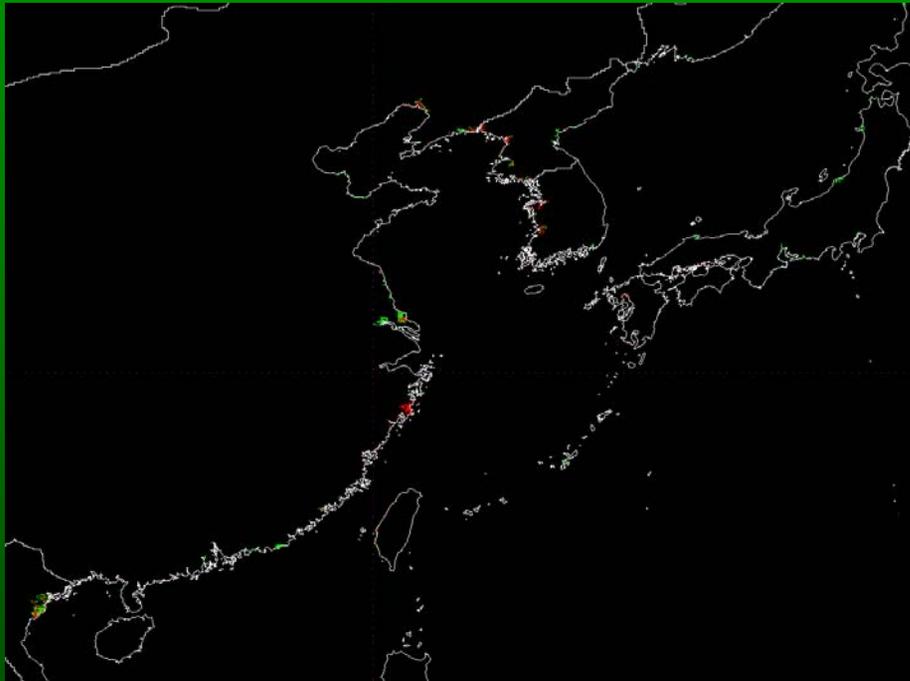
h' : 高潮偏差を求める水深(5m)

h_0 : 吹き寄せが始まる水深

Inundated and Flooded Areas - East Asia

<Inundation>

<Flooding by Storm Surge >



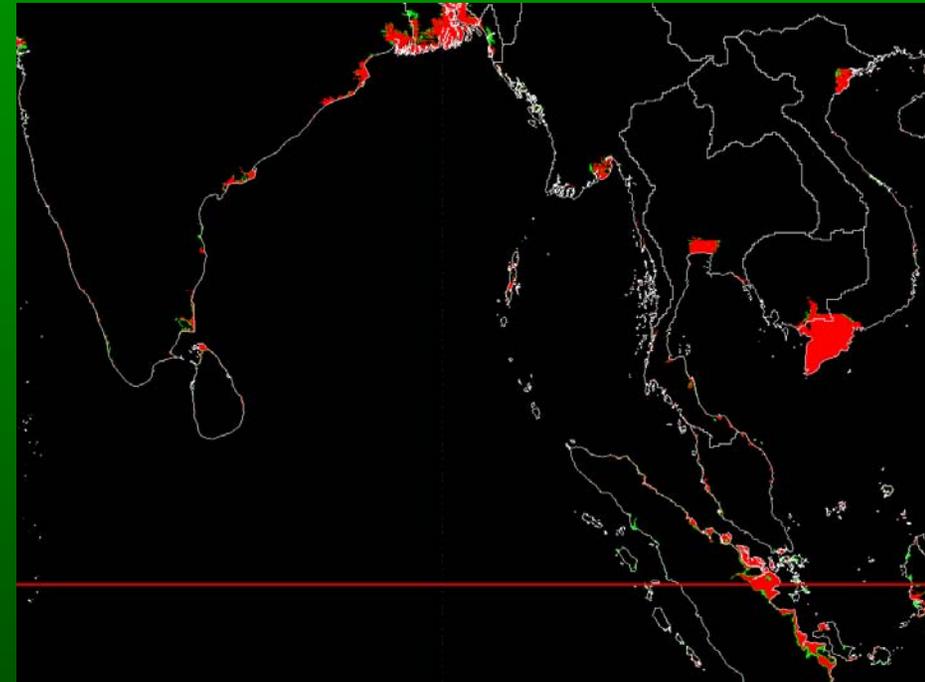
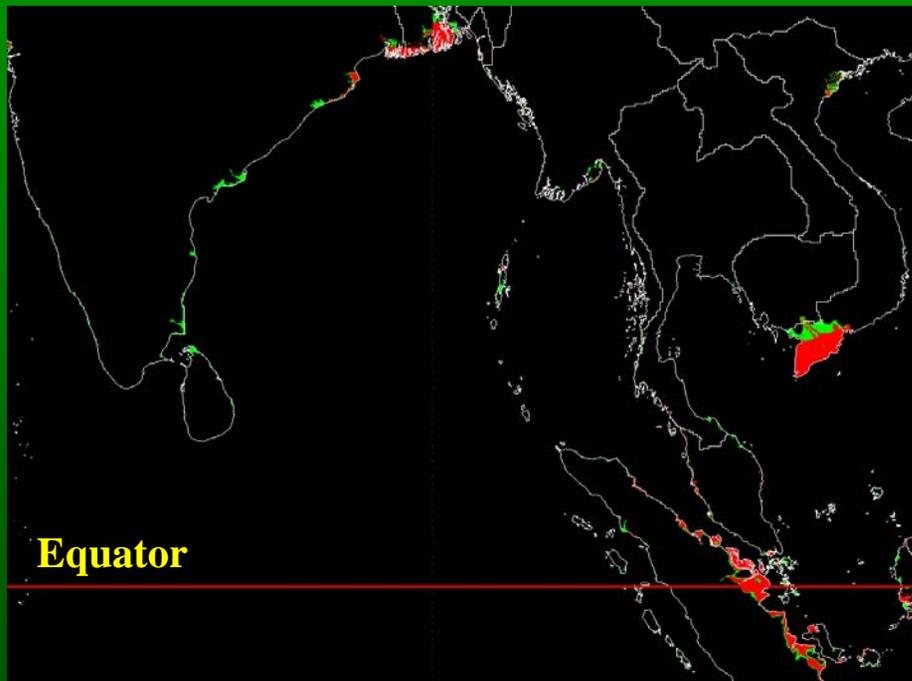
 **Inundated by HWL**
 **Inundated by HWL+1m SLR**

 **Flooded by HWL + SS**
 **Flooded by HWL + SS
+ 1mSLR**

Inundated and Flooded Areas - Southeast and South Asia

<Inundation>

<Flooding by Storm Surge>

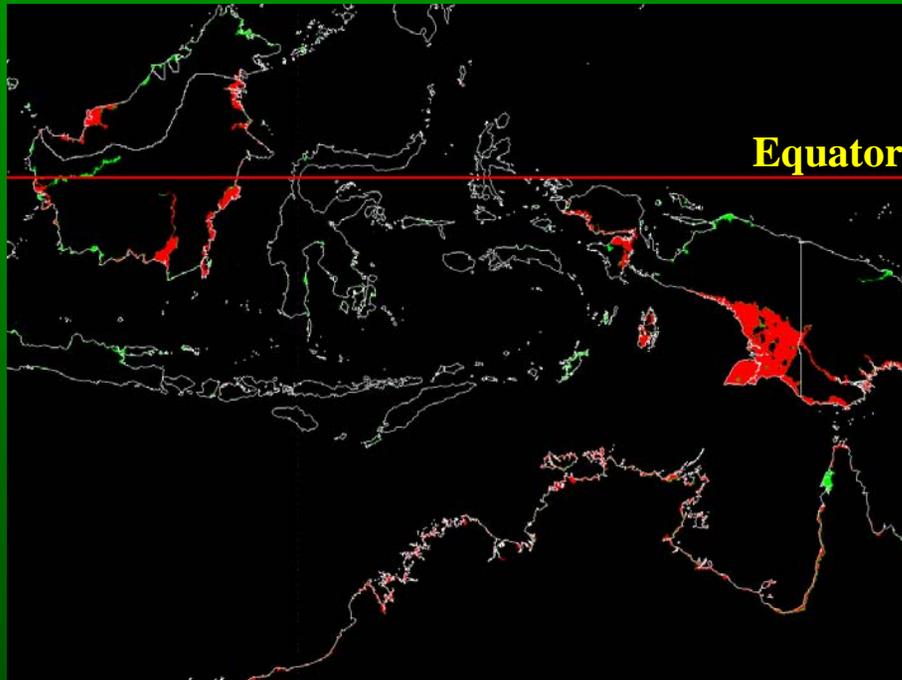


-  Inundated by HWL
-  Inundated by HWL+1m SLR

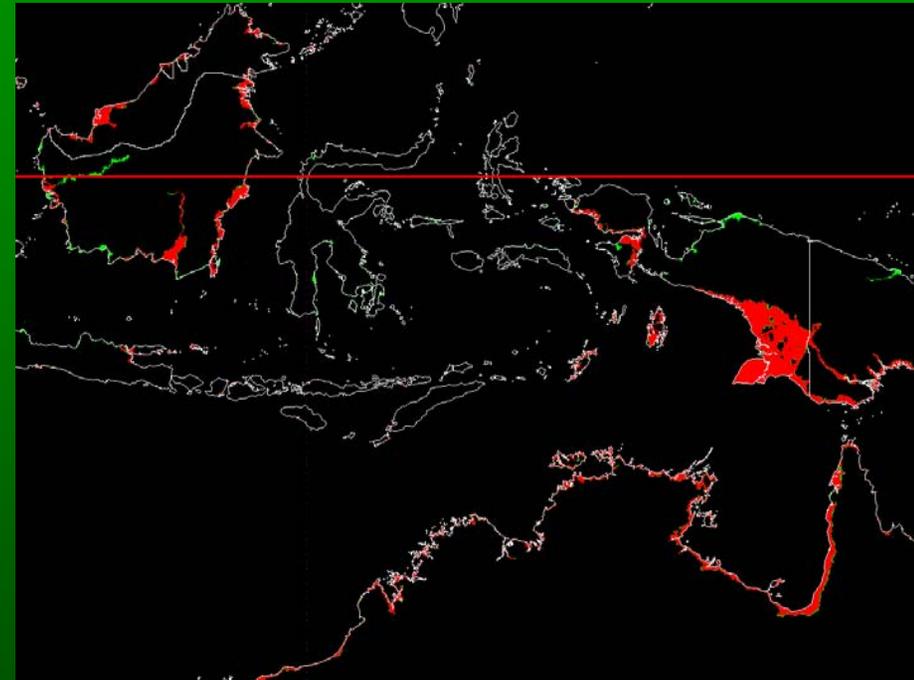
-  Flooded by HWL + SS
-  Flooded by HWL + SS + 1mSLR

Inundated and Flooded Areas - Kalimantan, New Guinea, North Australia

<Inundation>



<Flooding by Storm Surge>

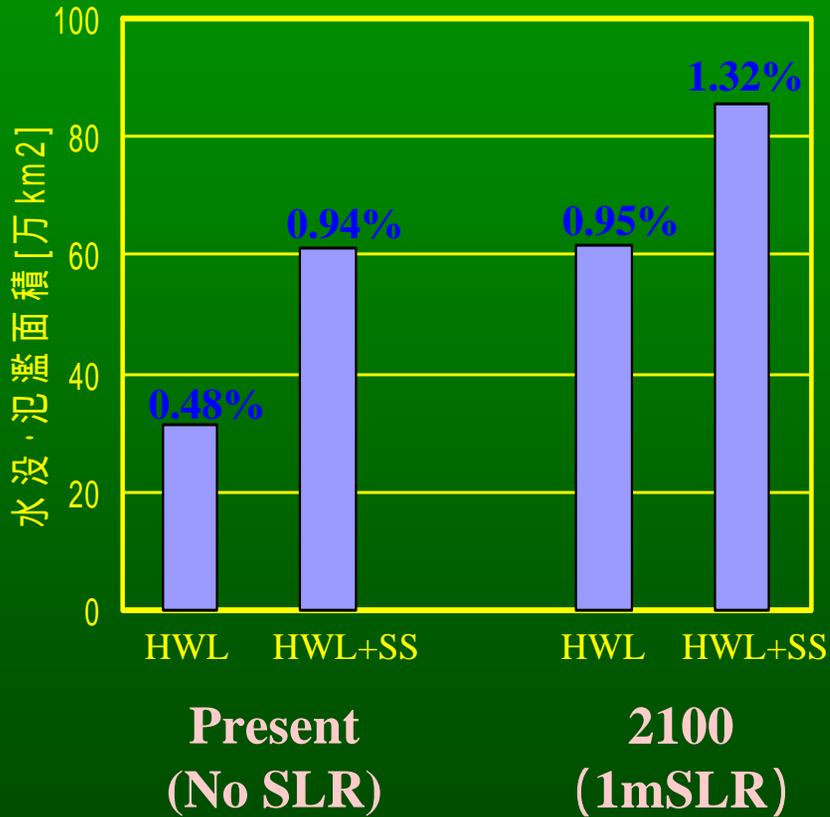


 Inundated by HWL
 Inundated by HWL+1m SLR

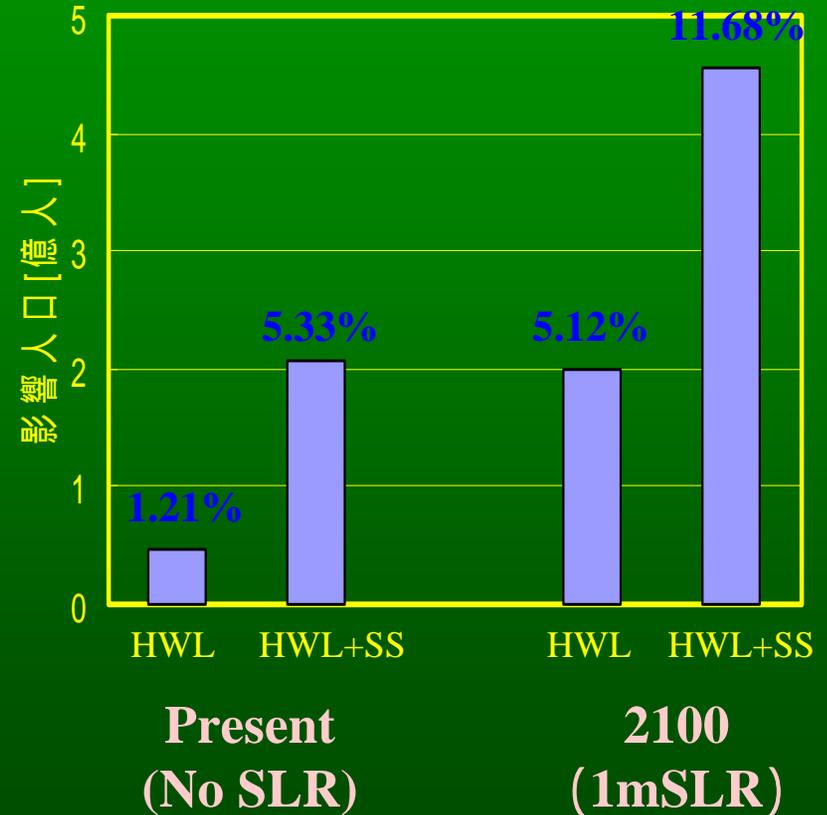
 Flooded by HWL + SS
 Flooded by HWL + SS
+ 1mSLR

Affected Areas and Population

Inundated and Flooded Areas

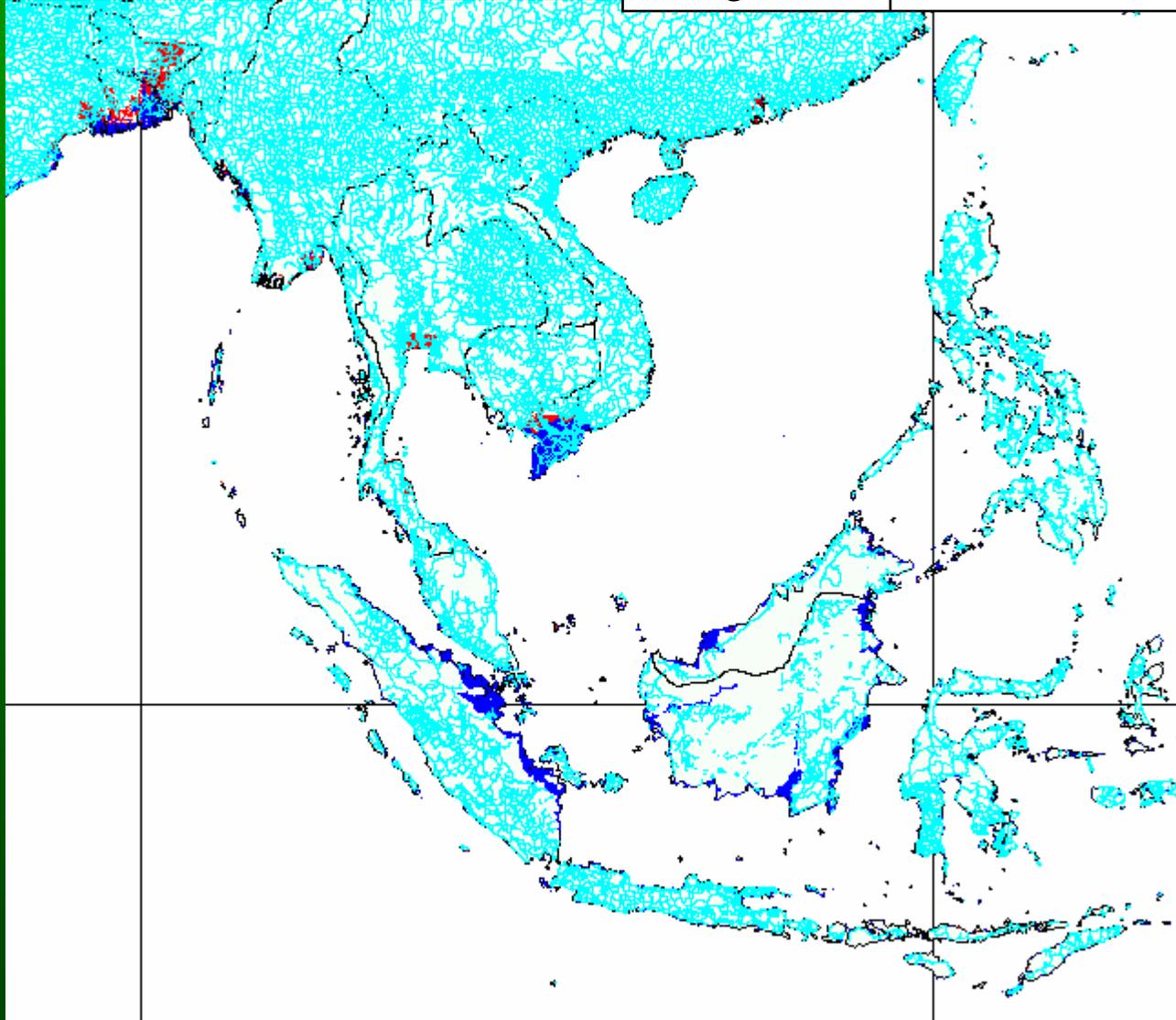


Affected Population



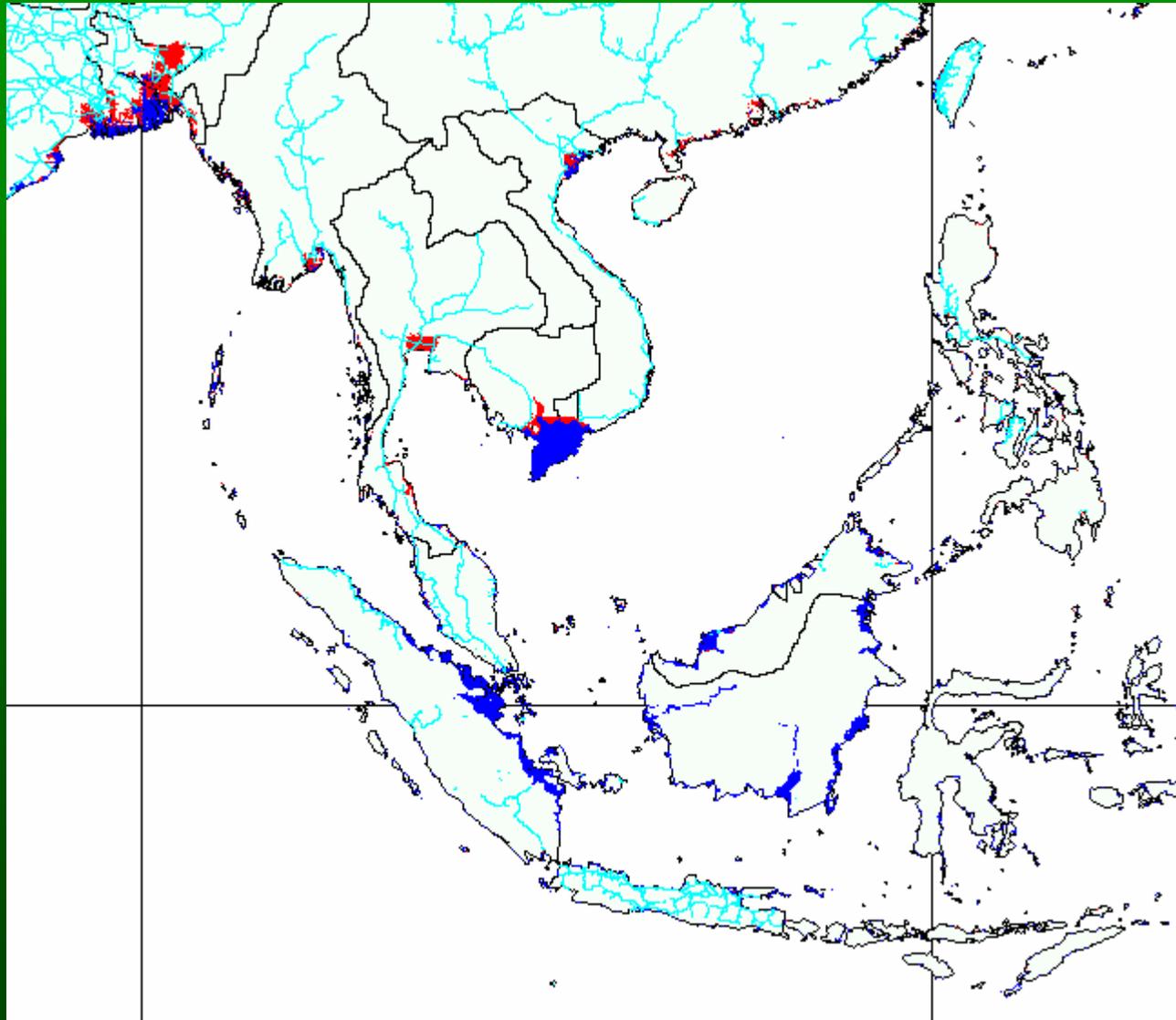
Roads

	Inundation	Flooding
Singapore	57.6%	57.6%
Brunei	38.8%	43.6%
Bangladesh	7.4%	26.3%



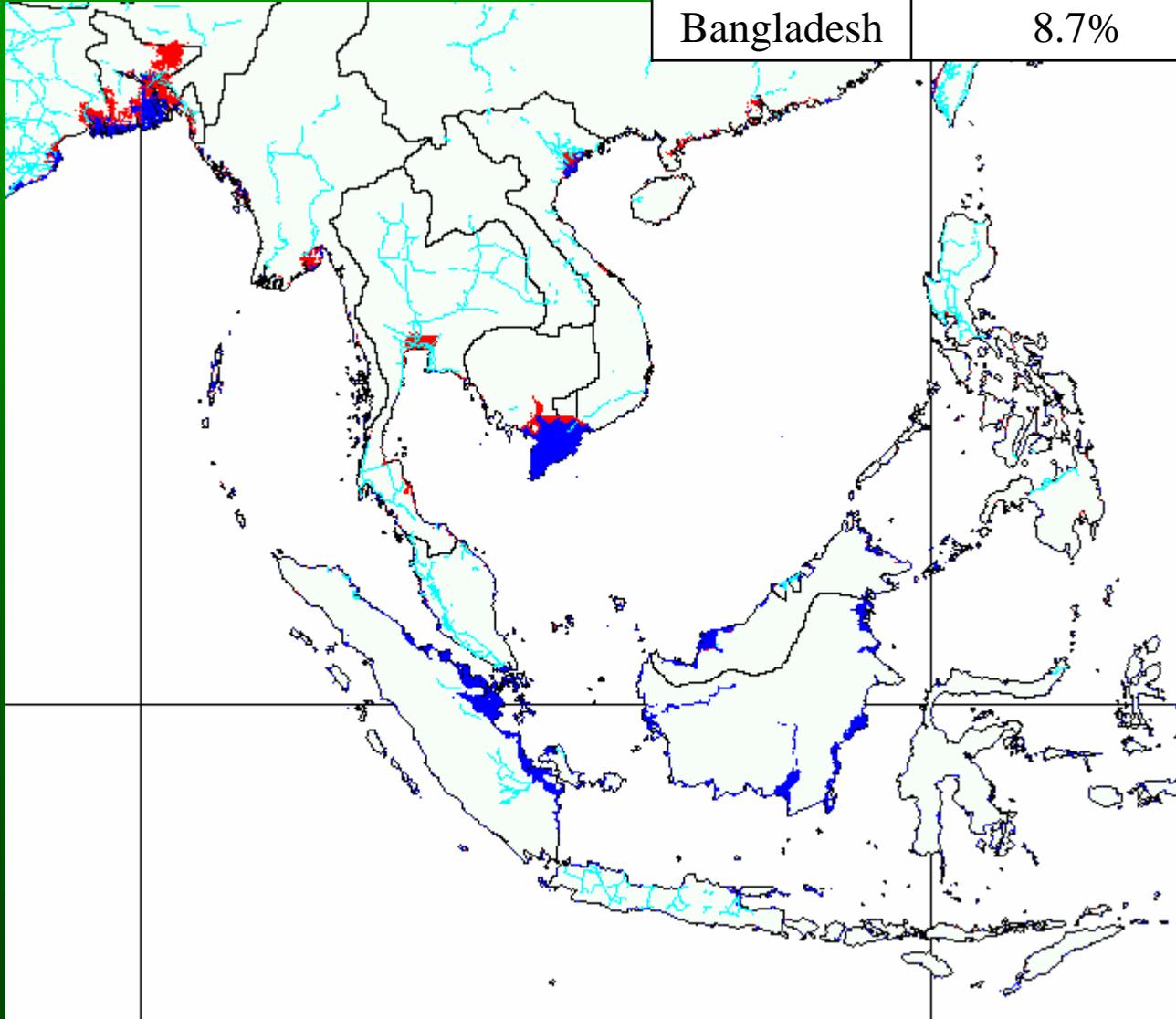
Railways

	Inundation	Flooding
Singapore	100%	100%
Brunei	50.0%	62.5%
Bangladesh	1.3%	22.4%



Utilities

	Inundation	Flooding
Vietnam	5.9%	12.2%
Brunei	57.3%	62.5%
Malaysia	4.8%	6.2%
Bangladesh	8.7%	62.5%

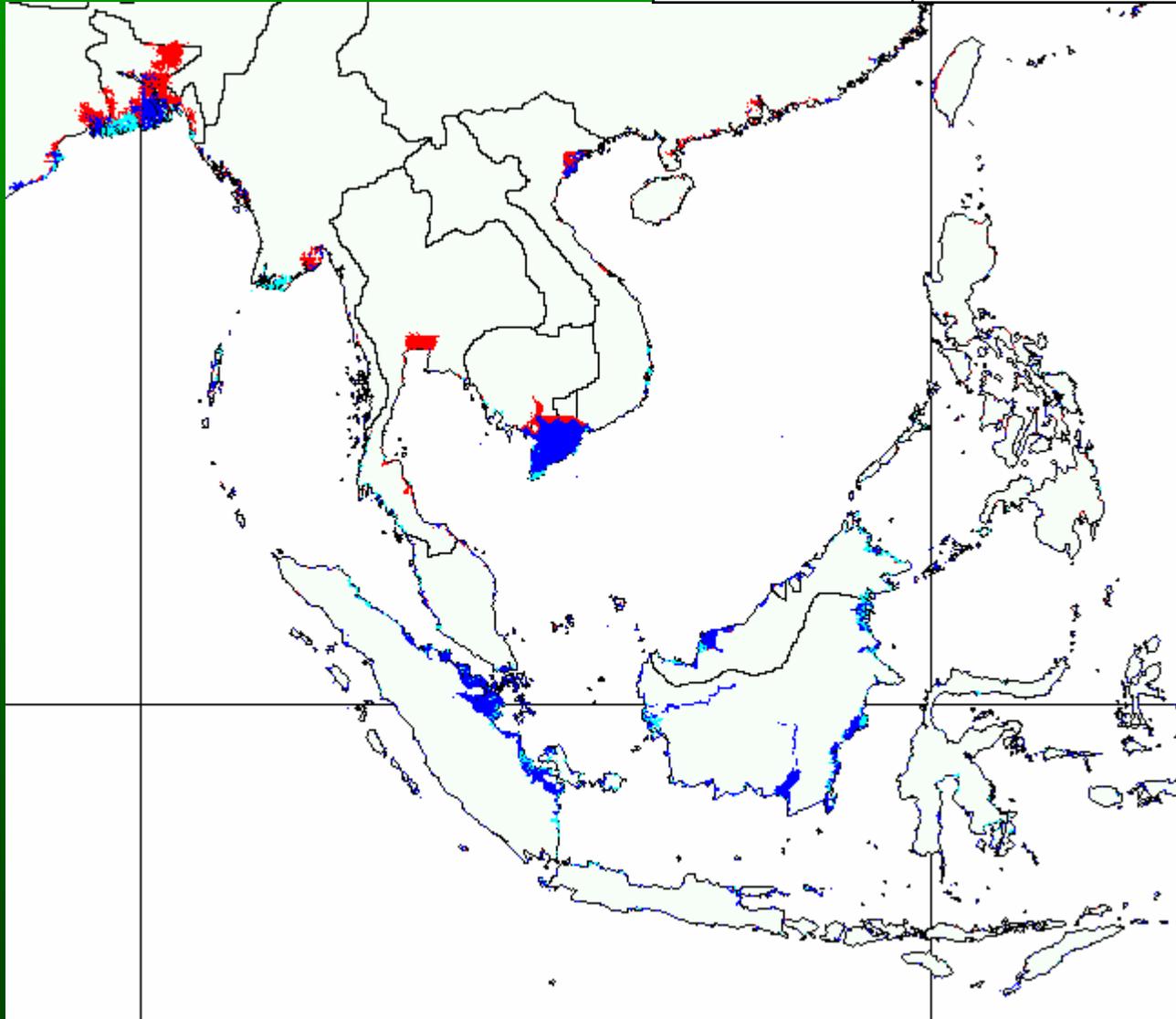


Legend:

-  SLR+HWL
-  SLR+HWL+SS
-  Utility

Mangrove

	Inundation	Flooding
Vietnam	87.0%	87.7%
Indonesia	74.3%	75.4%
Bangladesh	42.8%	68.1%



Conclusions

1. Climate change and SLR will impose serious impacts on the coastal environment, such as sandy beaches, coral reefs, mangroves and wetlands. Human society in the coastal zone will also be affected significantly.
2. Asia and Pacific Region is among the most vulnerable. In the 21st century, high growth of population is expected in this region, and economic and demographic growth will be concentrated in the coastal areas. This trend makes the risk of the climate change and SLR even higher.
3. Climate variability and extreme events, such as intensification of cyclones, are most dangerous to the safety of human society and the health of natural environment. Precautionary adaptive measures should be planned including monitoring of the climate change and variability.

Funafuti, Tuvalu

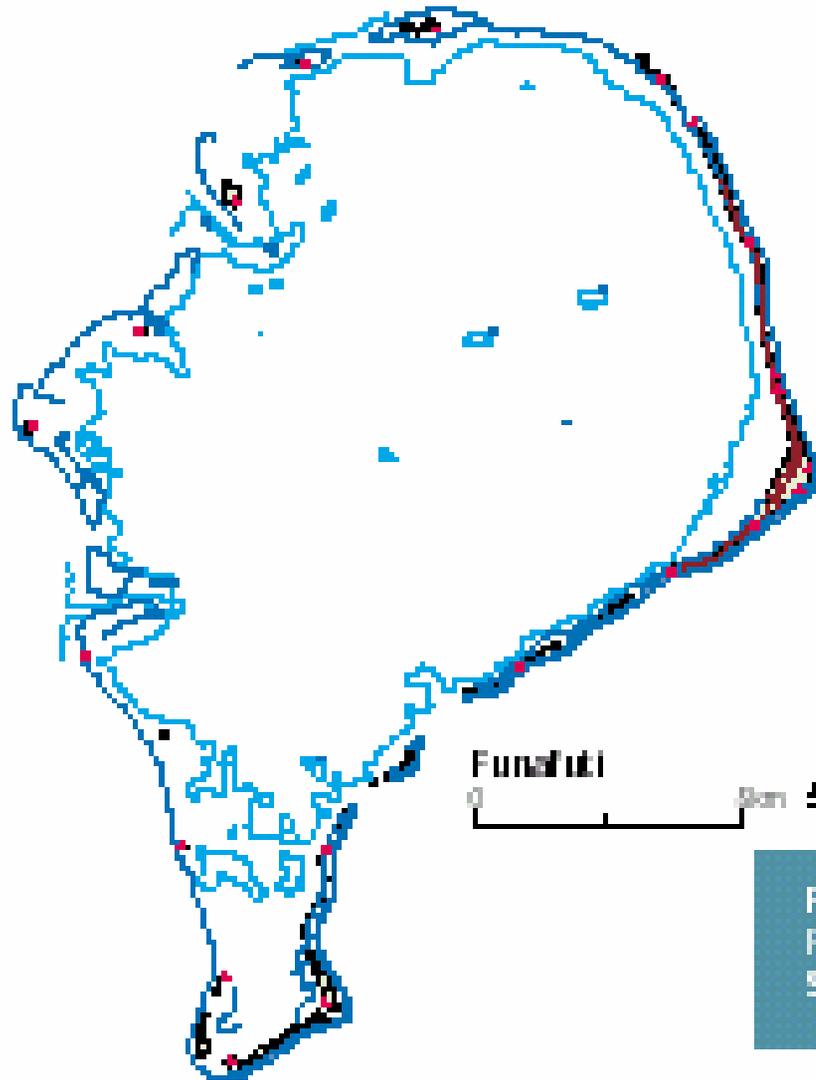
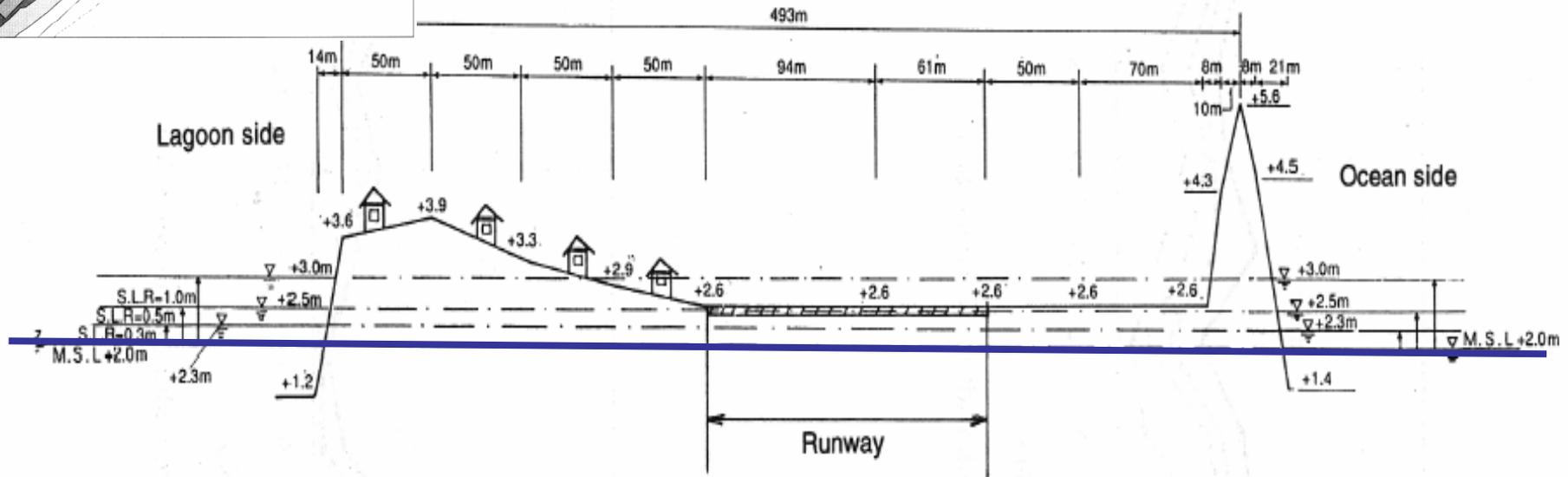
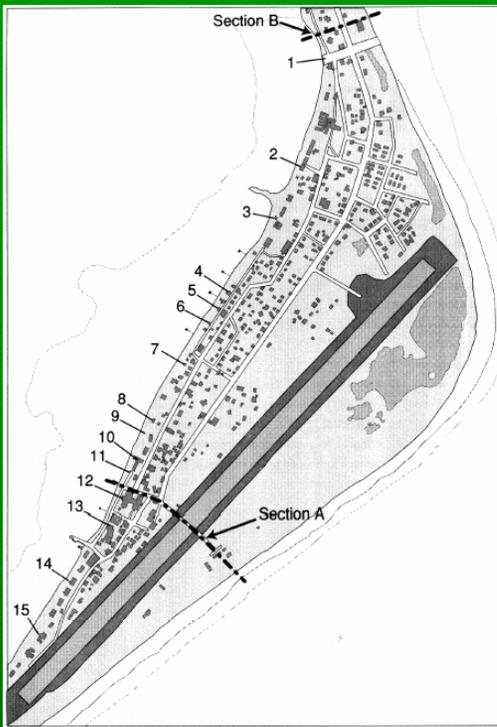


Figure 4-3-B-1
Funafuti atoll in Tuvalu.
Source: Sam et al. (1995)

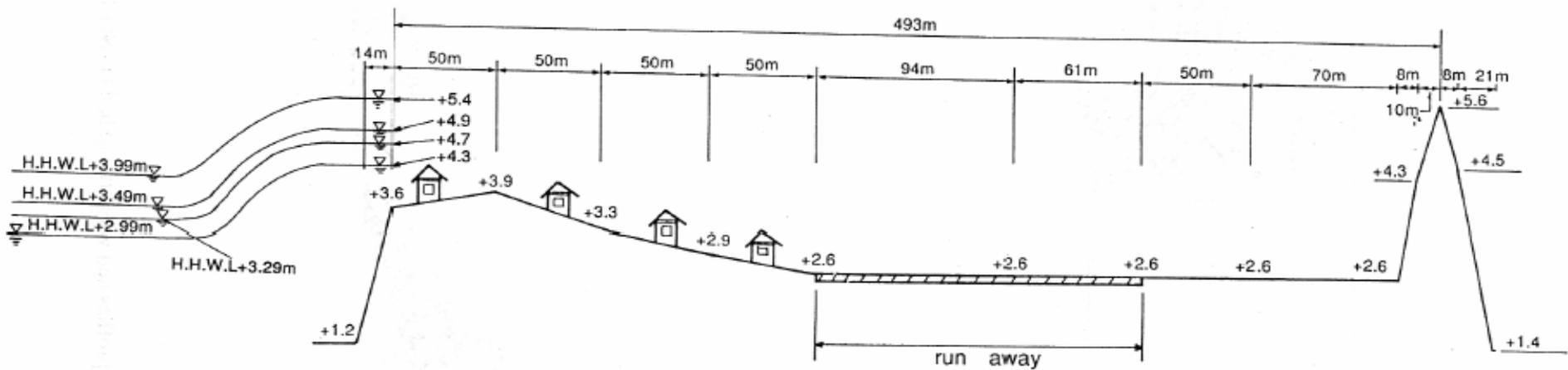




Surveying of Funafuti



Water Level Induced by Cyclone and SLR





「温暖化で水没」ツバルが提訴準備

地球温暖化による海面と対策を求める予定。上昇で「水没」の危機にある南太平洋の島国ツバルが、温暖化に関係する大企業を訴える準備を進めている。隣国キリバスやインド洋のモルディブと共同で提訴し、損害賠償 2100年までに最大88

「大企業、資金あるのに対策せぬ」

ツバルのゴロア・タラケ首相に、訴訟への決意などを聞いた。
——大企業を訴えるのはなぜですか。

「国際会議で普境を訴え続けたが、太平洋を囲



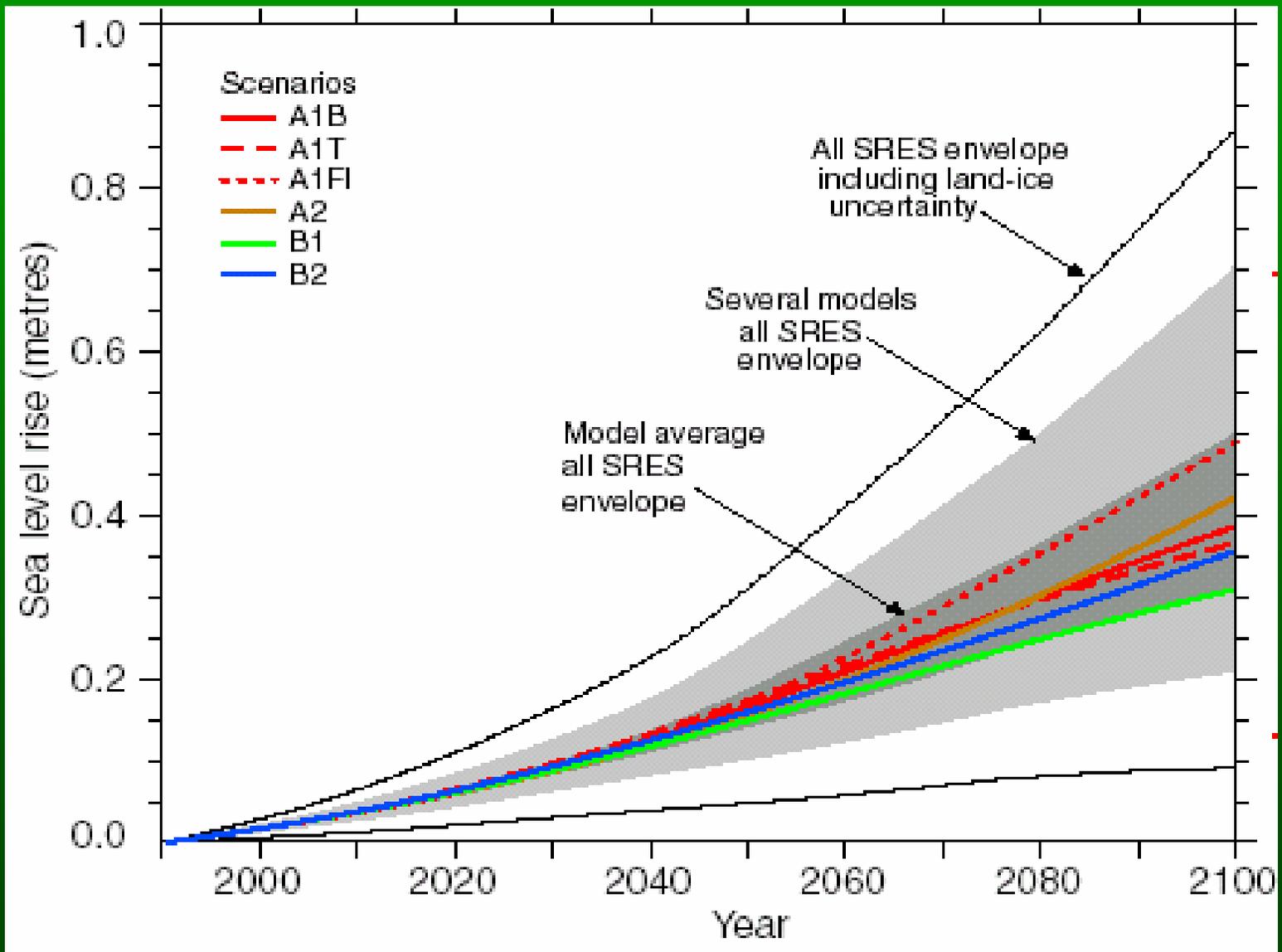
タラケ首相

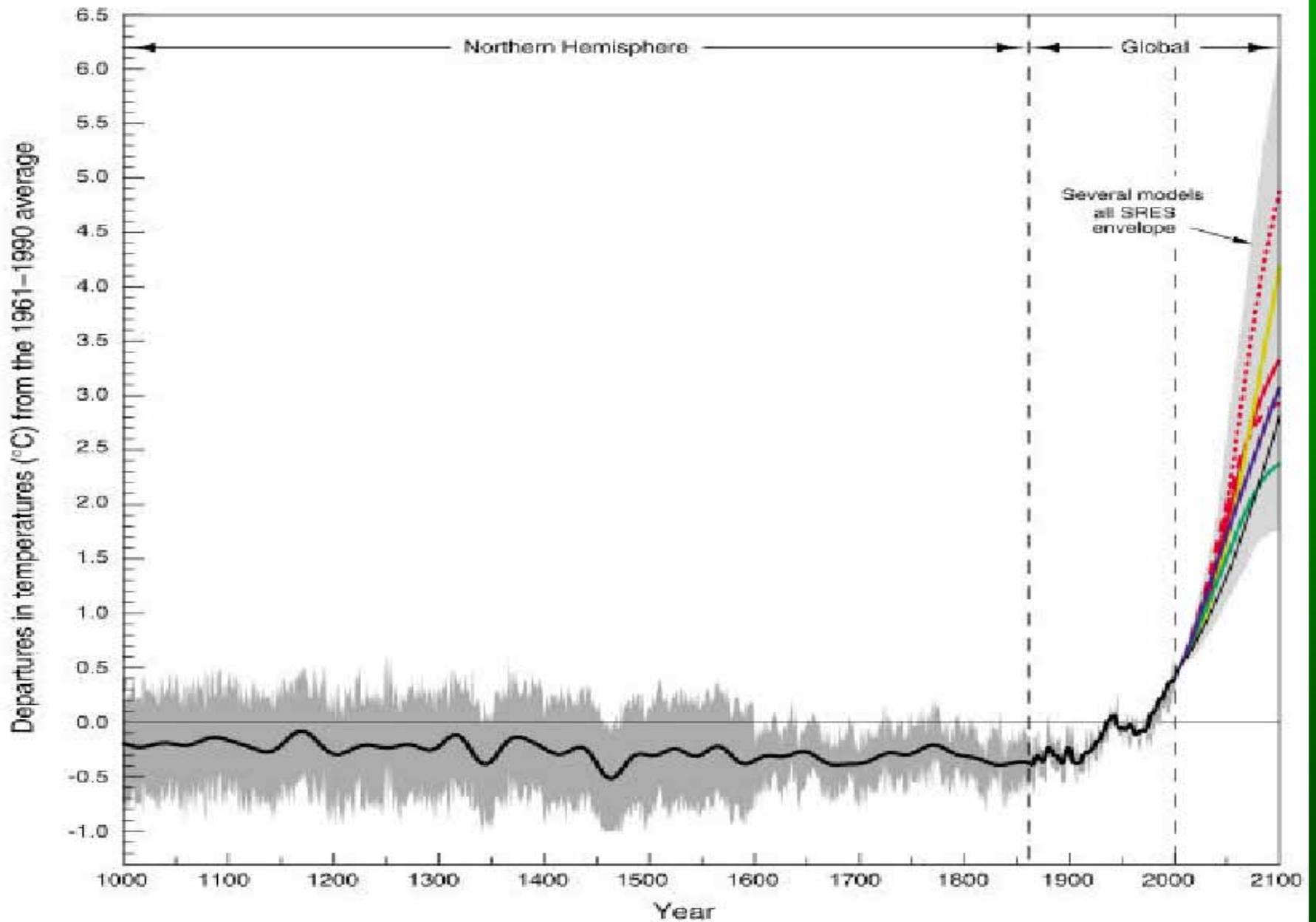
む先進国は日本を除き京都議定書を批准しようとしていない。米国などの主権国家を訴えるには綿密な調査と証拠が必要で、準備に1、2年かかる。そこで「温暖化への関与が

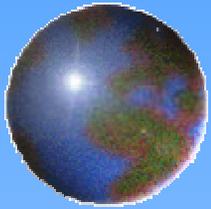
「夏の大嵐」に伴う海面上昇で水浸しになった首都フナフティー(02年7月、F0Eシヤパン提供)

8/9

Future Prediction of Sea-Level Rise







AN OVERVIEW OF GLOBAL CHANGE STUDIES IN VIETNAM

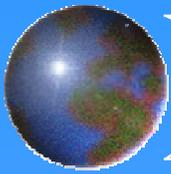
Nguyen Huu Ninh, Chair IHDP/IGBP Vietnam

In collaboration with:

**Luong Quang Huy, Pham Hung Viet, Hoang Minh Hien,
Mai Trong Nhuan, Nguyen Hoang Tri, Nguyen The Chinh,
Do Xuan Lan, Tran Viet Lien, Phan Van Tan, Vo Thanh Son**

IHDP/IGBP Vietnam Secretariat

Email: cered@hn.vnn.vn

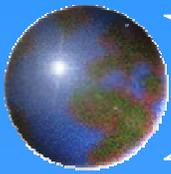


AN OVERVIEW OF GLOBAL CHANGE STUDIES IN VIETNAM

Objectives

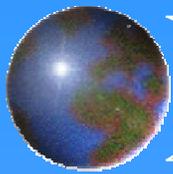
✚ Two major objectives

- ✚ To obtain a better understanding on the nature of the variations and changes in Earth system
- ✚ To explore the direct and indirect effects of the changes and variations in the Earth system and their connections to the daily life and development of the country



Major research themes

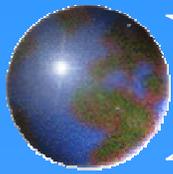
1. **Climate Impact and Modelling Studies,**
2. **El Niño, La Niña and climatic extremes impacts,**
3. **Coastal geomorphological conditions, geohazards in relation with climatic extremes and global change events,**
4. **Land-Ocean Interactions in the Coastal Zone (LOICZ),**
5. **Land use and Cover Change (LUCC),**
6. **Biodiversity conservation and global environmental change,**
7. **Human Dimensions in Global Change Research,**
8. **Education and training programme to promote global change research and improve awareness on the impacts of global environmental change on socio and economic development trends.**



1. Climate Change Impact and Modelling Studies

Projects under implementation

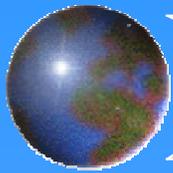
- Assessment on periodical circulation and anomalies of rainfall and temperature in the Central in particular and Vietnam in general, 1998-2002.
- Forecasting the appearance and frequency of tropical cyclones in South China Sea and Northwest Pacific, 1998-2002.
- The role of Land-Ocean interactions on weather forecasting in the region, 1998-2002.
- The impacts of Climate Change and Sea Level Rise on the coastal Vietnam, 1997-2000.



1. Climate Change Impact and Modelling Studies

Projects under implementation

- **An application study on Regional Climate Modelling (RegCM) for Weather forecast in Vietnam, 1998-2002.**
- **An Overview of Hydro-climatic characteristics and their variation in the Red River Delta, 1995-2000.**
- **The role of Land-Ocean interactions on weather forecasting in the region, 1998-2002.**

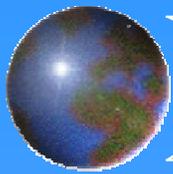


1. Climate Change Impact and Modelling Studies

Projects under implementation (cont.)

- ✪ A project on “Climate forecasting in Vietnam” has also been conducted by the Climate Research Center of the MET office.

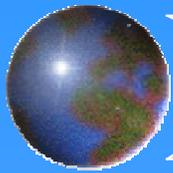
Several case studies in the impacts of climatic extremes in Vietnam of which “The response to the flooding in Central Vietnam in 1999” by the Institute of Hydro-Meteorology and “The lessons of Typhoon Linda, Vietnam” by the National Hydro-Meteorological Service.



2. El Niño, La Niña and Climatic Extreme Impacts

Major studies

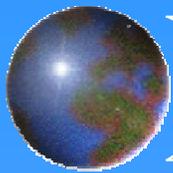
- ✪ ENSO's effects on activities of typhoons in Northwest Pacific, South China Sea and Vietnam.
 - ✦ The Satellite and Remote Sensing Department of the MET office.
- ✪ The relationship between rainfall and ENSO based on seasonal formula of monthly rainfall in Vietnam, 1998-2002, and
- ✪ The impacts of ENSO on frequency of tropical cyclones and storms in South China Sea and Northwest Pacific, 1997-2001.
 - ✦ By the Meteorological Department of Vietnam National University.



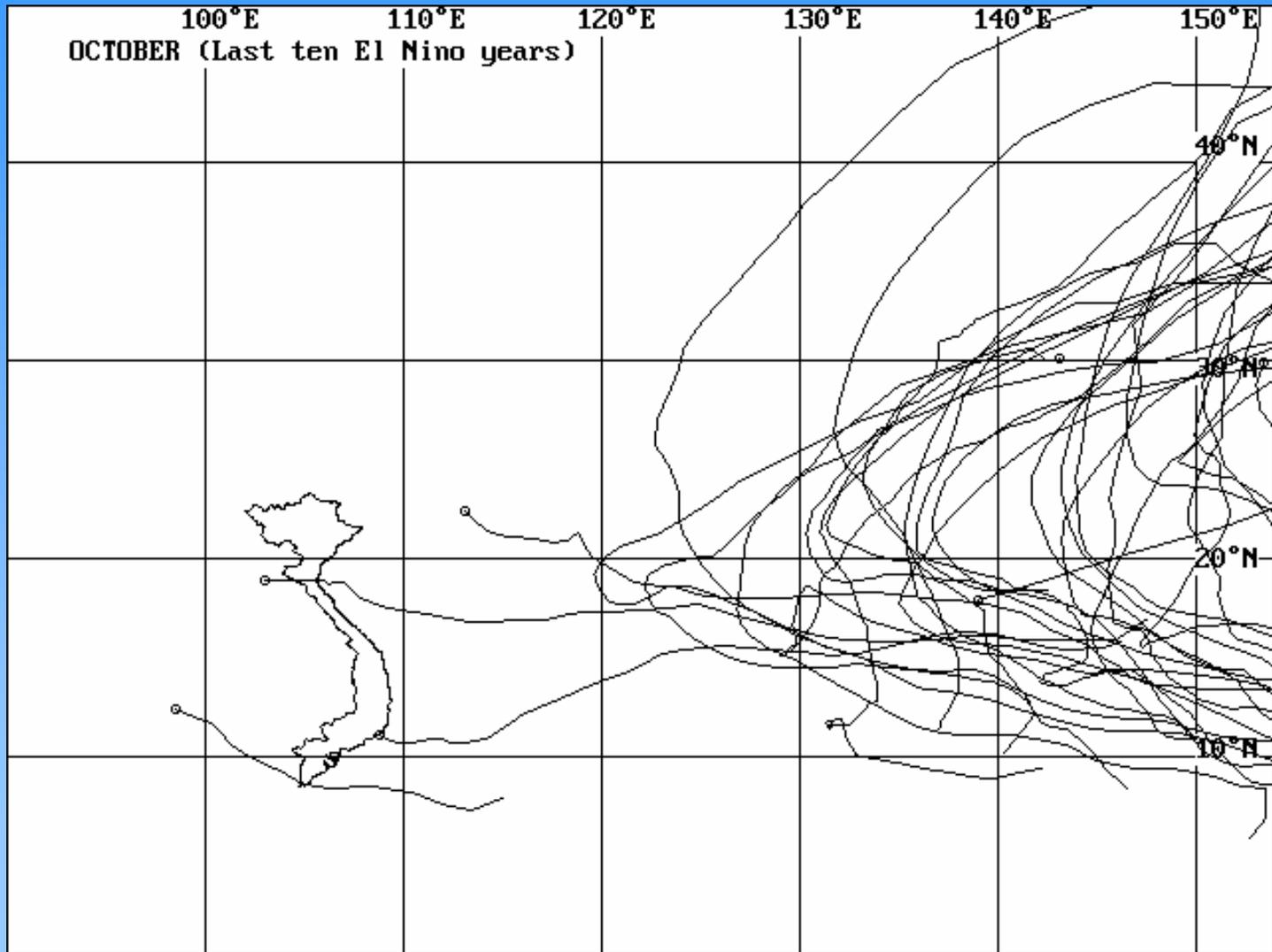
2. El Niño, La Niña and Climatic Extreme Impacts

Major studies

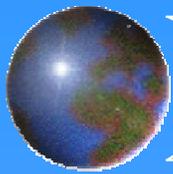
- ✦ **Reducing the Impact of Environmental Emergencies Through Early Warning and Preparedness - The Case of El Niño-Southern Oscillation (ENSO) - Vietnam Case Study**
 - ✦ **Funded by NCAR, UNFIP, WMO, IDNDR, UNU.**
 - ✦ **By CERED, Met Office, and Climatic Research Center**



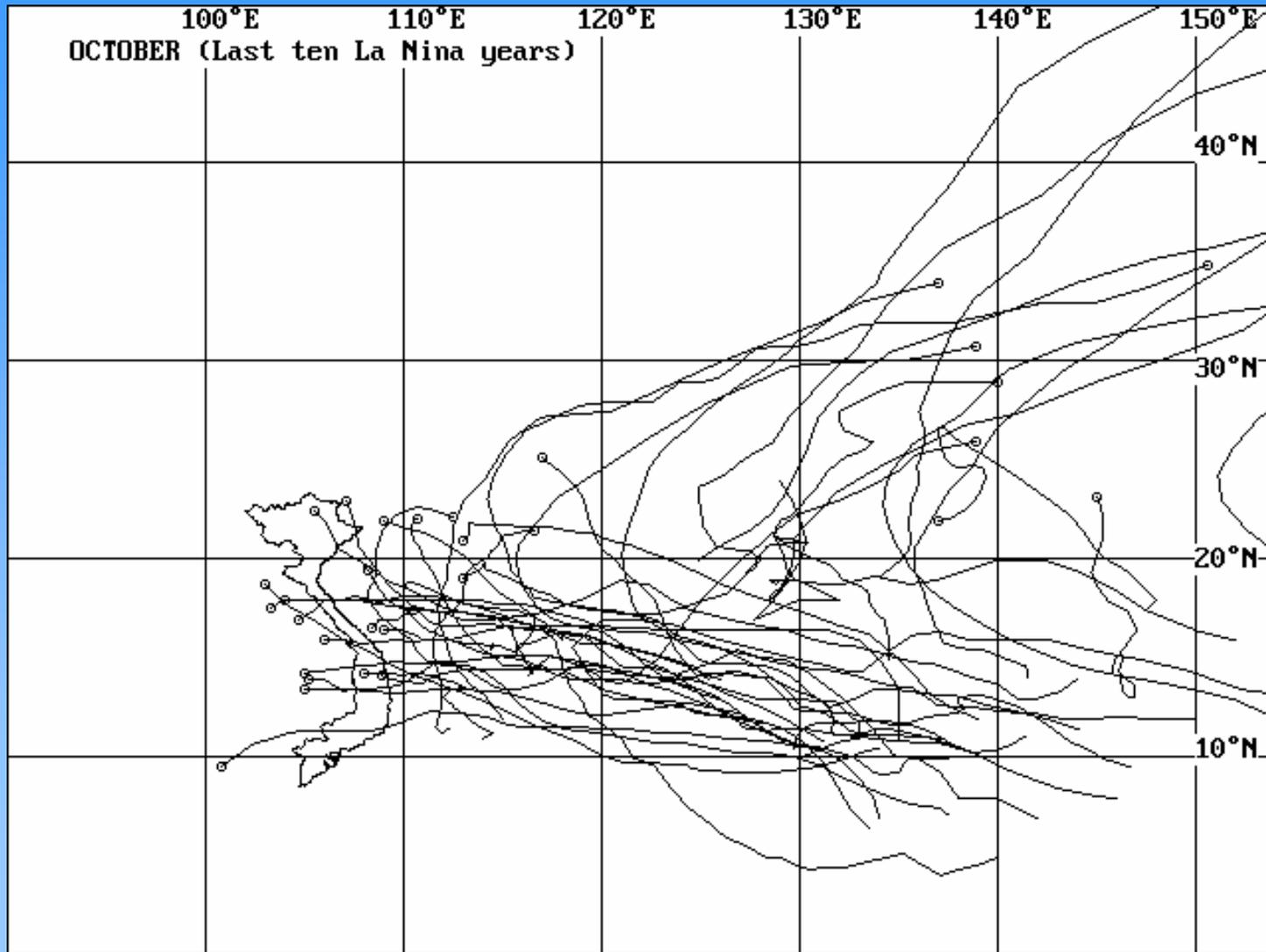
2. El Niño, La Niña and Climatic Extreme Impacts



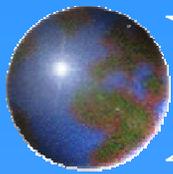
Storm tracks in the last ten El Niño years



2. El Niño, La Niña and Climatic Extreme Impacts



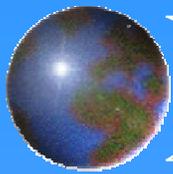
Storm tracks in the last ten La Niña years



2. El Niño, La Niña and Climatic Extreme Impacts

Lessons learnt

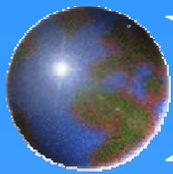
- ✦ There is a need for El Niño-related impact studies on regions, institutions, disaster management procedures, and economic sectors of society.
- ✦ El Niño-related impact studies should be undertaken between El Niño events and not during them.
- ✦ El Niño tends to exacerbate existing hazards and disasters that the Vietnamese society has had to cope with for centuries: droughts, floods, fires severe storms, and typhoon landfall.
- ✦ People not only need better El Niño forecasts (more detail at the local level and more accuracy) but they also need better forecasts of El Niño's impacts.
- ✦ Researchers must identify the needs of specific users in order to improve the effectiveness of early warning.
- ✦ It is important for an effective response to an El Niño forecast that the highest levels of government consider El Niño a problem and are willing to take actions based on the forecast in a proactive way.
- ✦ It is not possible to be absolutely confident in attributing a particular weather phenomenon or anomaly to the occurrence of an El Niño. The same is true for attributing societal impacts.



2. El Niño, La Niña and Climatic Extreme Impacts

Lessons learnt (cont.)

- ✦ **A mechanism that turns awareness into effective public action is needed. There is a need to review in more detail what the El Niño-related climate impacts were during the 1997-98 El Niño event.**
- ✦ **Capacity building is needed in climate impacts assessment and in climate-related disaster planning.**
- ✦ **While there are many government agencies in the country dealing with some aspect of El Niño, there is a need for improved efficiency in transmitting warning and forecasts throughout the government.**
- ✦ **Governments need to prioritize the allocation of resources in the planning stage for El Niño-related impacts, given the scarcity of resources in many developing countries.**
- ✦ **There is a need for capacity building in the area of El Niño forecast use.**
- ✦ **There is a need to convince the government at the highest level of the importance to society of El Niño research, especially about teleconnections (i.e., attributions) and impacts on environment and society.**

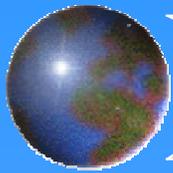


2. El Niño, La Niña and Climatic Extreme Impacts

Major studies

National project on “The impacts of ENSO on weather, climate, environment and socio-economics in Vietnam, 1998-2002” focuses on the following subprojects:

- ✪ ENSO anomalies during the period of 1950-2000 in the region,
- ✪ Key characteristics of atmospheric circulations in the Asia-Pacific region in relation to ENSO,
- ✪ Physical mechanism of ENSO and the relationship between ENSO and Asian monsoons,
- ✪ The impacts of ENSO to climate factors and weather in Vietnam,
- ✪ The impacts of ENSO to hydrological mechanism and water resources,
- ✪ The impacts of ENSO to socio-economics and the environment,
- ✪ Initial application of ENSO findings in weather forecasting.

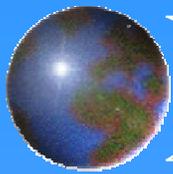


2. El Niño, La Niña and Climatic Extreme Impacts

Regional Network

IGCN

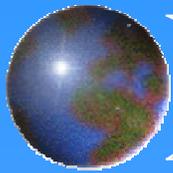
- ✦ **Establishment of the Indochina Global Change Network (IGCN)**
 - ✦ Global change research and analysis,
 - ✦ Capacity building programme,
 - ✦ Policy making,
 - ✦ Strategic planning.



2. El Niño, La Niña and Climatic Extreme Impacts

Workshop on
The Impact of El Niño and La Niña on
Southeast Asia
Feb 2000, Hanoi, Vietnam

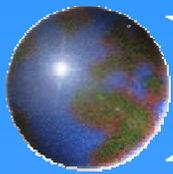
- ✦ Vietnam Union for Science and Technology Associations (VUSTA),
- ✦ Center for Environment Research, Education and Development (CERED),
- ✦ Asia-Pacific Network for Global Change Research (APN),
- ✦ System for Analysis, Research and Training (START),
- ✦ University of East Anglia (UEA).



2. El Niño, La Niña and Climatic Extreme Impacts

Workshop on
**Forecasting
El Niño and La Niña
in Indochina**
Feb 2002, Hanoi,
Vietnam.

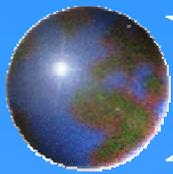
- ✦ Asia-Pacific Network for Global Change Research (APN),
- ✦ The US National Oceanic and Atmospheric Administration (NOAA),
- ✦ The Netherlands Foundation for Advancement of Tropical Research (WOTRO).



3. Coastal geomorphological conditions, geohazards in relation with climatic extremes and global change events

Major research

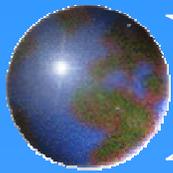
- The geohazards in the Nga Son – Hai Phong coastal zone. 1997-2000.
- Erosion and accretion in the coastal zone of the Red River delta. 1998-2001.
- Geochemical evolution of the Holocene sediments in the Red River estuary area. 1999-2002.
- Geochemical sedimentary evolution of the progress of formation, development and degradation of mangrove forest in Red River mouth (on example of Namdinh province). 1999-2002.



3. Coastal geomorphological conditions, geohazards in relation with climatic extremes and global change events

Major research

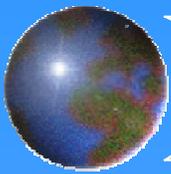
- **Distribution of Organochlorine Pesticides and Polychlorinated Biphenyls in Sediments from Vietnamese Coastal Waters and Using them as Molecular Marker for Source Identification and Sedimentation Rate Determination. 1999-2002.**
- **Correlation between quarternary sedimentary composition and geological evolution in Red River plain of Vietnam. 1990-1995.**
- **Sedimentary cycles and Quaternary geological evolution of the Red River Delta of Vietnam. 1990-1995.**



3. Coastal geomorphological conditions, geohazards in relation with climatic extremes and global change events

Major research

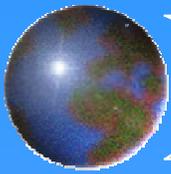
- Sedimentology of Quaternary Sediments in Thai Binh and Nam Dinh Provinces. 1990-1995,
- Holocene sedimentary evolution, related geomorphology in the Balat river mouth. 1998-2001,
- Actual situation of the erosion and accretion on the coast of Vietnam. 1994-1998,
- Geomorphologic evolution of the Balat mouth area in recent period. 1998-2000.



4. Land-Ocean Interactions in the Coastal Zone (LOICZ)

Projects under implementation

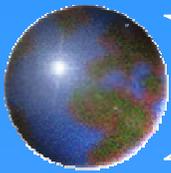
- Economic valuation studies of Mangrove Conservation and Rehabilitation in Nam Ha, 1997-2002.
- Natural resource management in mitigating climate impacts: mangrove restoration in Vietnam, 1997-2002.
- Economic-Environmental Modelling of Coastal Zones in The Red River Delta, Vietnam, 1997-2000.



4. Land-Ocean Interactions in the Coastal Zone (LOICZ)

Projects under implementation

- Integrated modelling of physical and bio-ecological parameters of the rehabilitated mangroves in providing nutrient budget for improving environment and fisheries production, 1995-2002.
- Nutrient modelling for the mangrove area of the Red River Estuary in Vietnam, 1998-2002.

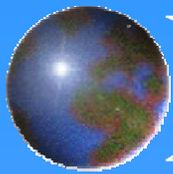


4. Land-Ocean Interactions in the Coastal Zone (LOICZ)

Projects under implementation

Regional on-going project focusing on the "*Reversing Environmental Degradation trends in South China Sea and the Gulf of Thailand*"

Funded by UNEP by several components including Vietnam National University, Institute of Forestry Science, Vietnam Oceanology Institute amongst others to review the impacts of environmental change to different land-ocean ecosystems along the Vietnam coastline.

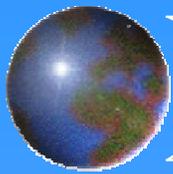


5. Land Use and Land Cover Change (LUCC)

Projects under implementation

Inventory, assessment and monitoring of forest resources for the whole country

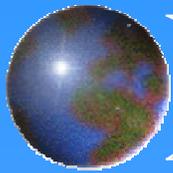
- ✦ Whole country: 1976-1990, 1991-1995, 1995-2000,
- ✦ Highland plateau region: 1976-1990, 1990-1997,
- ✦ Southern Vietnam: 1976-1990, 1990-1995,
- ✦ Central Northern region: 1976-1990, 1990-1998,
- ✦ Northern Central region: 1976-1990, 1990-1997, and
- ✦ Mekong River delta: 1976-1990.



5. Land Use and Land Cover Change (LUCC)

Projects under implementation

- **Forest cover monitoring project in lower Mekong basin, implemented in 1994-1998 funded by German government,**
- **Research on dynamics of mangrove forests in Minh Hai province for 20 years old period based on remote sensing data,**
- **Land use / land cover change in Tam Dao National park: a case study in the framework of SEARRIN APN project,**
- **Land use / land cover change in Dai Tu, Thai Nguyen province.**

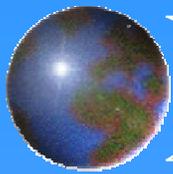


5. Land Use and Land Cover Change (LUCC)

Projects under implementation

Integrated studies on LUCC which is directly related to climate change and socio-economic development.

- ✦ Land-use and Aquaculture,**
- ✦ Coastal Sustainable Management to facilitate Adaptation to Social and Climate Change.**

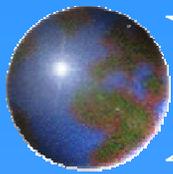


6. Biodiversity conservation and climate change

Projects under implementation

Management of rice paddies concerning the following aspects

- Rice production and land-use for rice production in the coastal zone,
- The impacts of climate change to rice production,
- The impacts of both climate change and the expansion of rice production to biodiversity,
- Other social and economic impacts related to rice production and biodiversity use.

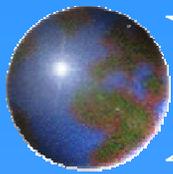


6. Biodiversity conservation and climate change

Projects under implementation

Livelihoods and biodiversity use in Vietnam coastal zones

- The impacts of newly-introduced livelihoods affecting biodiversity.
- The changes in levels of vulnerability and resilience caused by new livelihoods and use of biodiversity in coastal zone.
- Policies towards greater levels of adaptive capacity of livelihoods using biodiversity to cope with climate change.

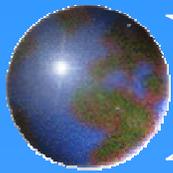


6. Biodiversity conservation and climate change

Projects under implementation

The impacts of migration, conservation and ecotourism

- Integrated study examining the impacts of climate change and consequent migrations to biodiversity conservation and social livelihoods,
- The potential of ecotourism, with introduction of massive migration trends in the vulnerable coastal areas to climate change,
- Policies towards sustainable development for migration society and establishment of ecotourism.

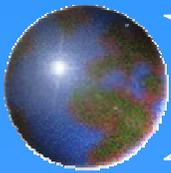


7. Human Dimension in Global Change Research

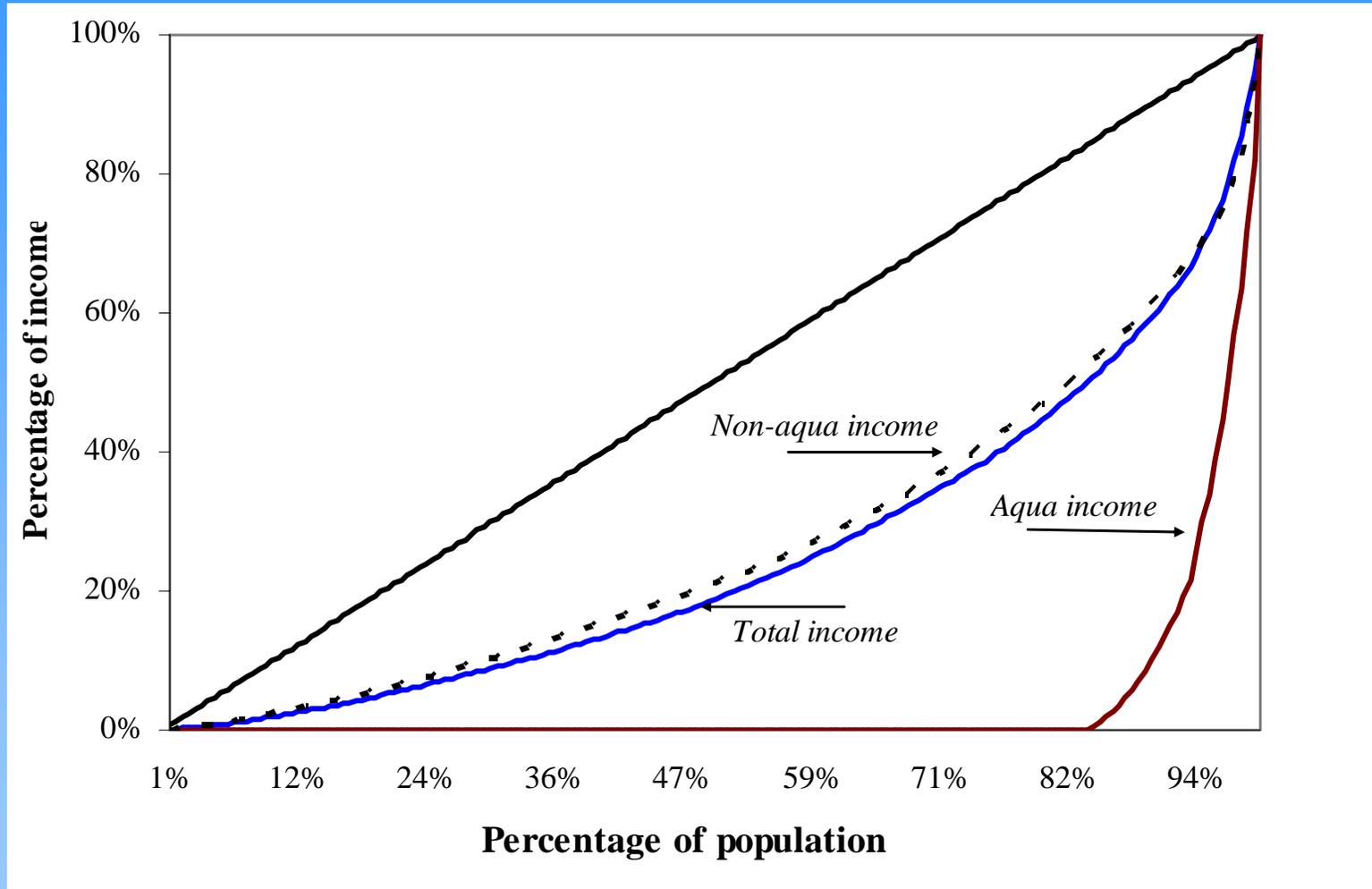
**Projects under
implementation**

***Social vulnerability in
a time of renovation***

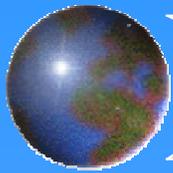
Aims to assess the changes in social vulnerability and resilience under the effects of economic renovation in Vietnam and the implications for local society coping with the impacts of climate and weather extremes in Giao Thuy district, Nam Dinh province in the north of Vietnam. A set of vulnerability indicators has been selected and tested in the study.



7. Human Dimension in Global Change Research



Lorenz curve to examine the level of income inequality, one of the indicators to assess vulnerability to climate and weather extremes and institutional changes under the economic revolution in Vietnam.

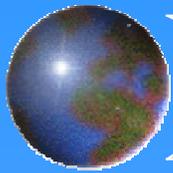


7. Human Dimension in Global Change Research

Projects under implementation

Coastal Sustainable Management to facilitate Adaptation to Social and Climate Change

Aims to assess the effects of institution changes and climate extreme events on livelihood such as agriculture, and aquaculture in the coastal zone.

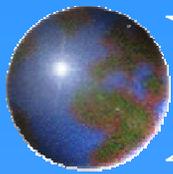


7. Human Dimension in Global Change Research

Projects under implementation

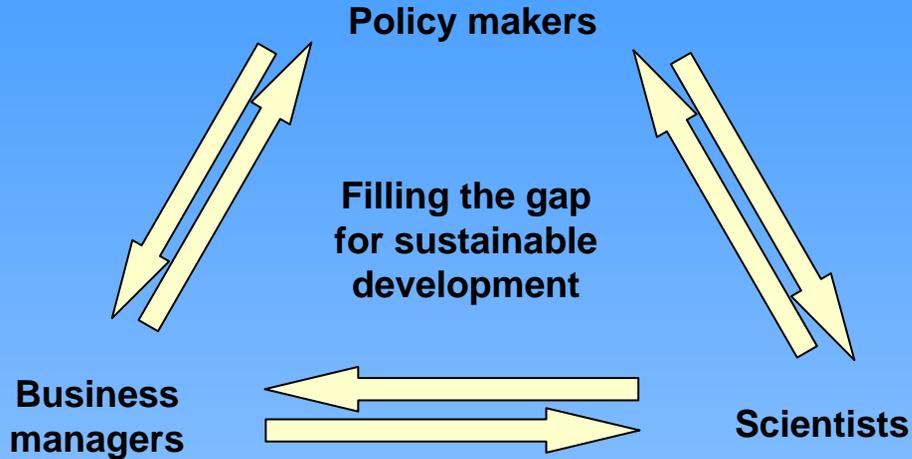
Migration, resilience and global change in the coastal zone

Focus on the population dynamics, policy context of increasing social trends in Vietnam under the impacts of global environmental change, either direct or indirect.

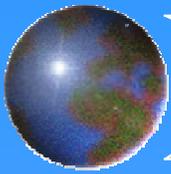


7. Human Dimension in Global Change Research

FILLING THE GAP



**Sustainability Science Training programme for senior managers/
policy makers of Vietnam.
On-going in all provinces in Vietnam.**

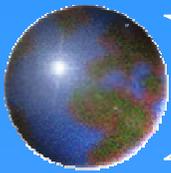


8. Education and Training programme to improve awareness on the impacts of global environmental change on socio and economic development trends

Institutional Dimensions of Global Environmental Change

**Environmental Change and Sustainable
Development in Vietnam**

**Sustainability Science Training programme
for managers from governmental authorities.
Funded by Toyota Global Environment Fund
2001-2004.**



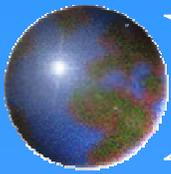
8. Education and Training programme to improve awareness on the impacts of global environmental change on socio and economic development trends

Institutional Dimensions of Global Environmental Change

✦ Environmental Awareness Education and Dissemination Programme

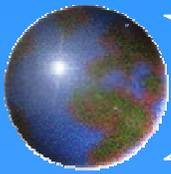
(Training programme for environmental managers from communicational and educational authorities)

Programme funded by Toyota Global Environment Fund 2003-2004.



Concluding remarks

- ✦ Following the core projects of the IGBP, IHDP, WCRP and DIVERSITAS,
- ✦ In-depth analyses on existing issues in Vietnam,
- ✦ Further educational and training programmes,
- ✦ Developing the following research themes,
 - ✦ Industrial Transformation (IT) research (including policy analyses),
 - ✦ Urbanisation and global environmental change,
 - ✦ Clean Development Mechanism of which technology transfer will be given special attention.
- ✦ Expanding research area to the whole country.
- ✦ Establish regional/international cooperation,



Thank you!



EUROPEAN
COMMISSION

Community Research

Global Change and Ecosystems in the 6th Framework Programme on RTD of the EU

Perspectives and Chances for Co-operation

Hanoi, 10-13 March 2003

Dr. Christian Patermann
European Commission





What is the “European Research Area”?

Long-term goal of ERA, launched at Lisbon summit 2½ years ago to create a true “internal market” for research in Europe

Why do we need ERA?

Europe will fall far short of its economic potential unless it reverses decades of technological underperformance but for that to happen, Europe must first tackle deep-rooted structural weaknesses in its research and innovation systems hence ERA





What are these structural weaknesses?

- Underinvestment in the research system
 - both financial and human
 - particularly acute in the business sector
- Unfriendly environment for research and innovation
 - regulatory shortcomings
 - financial weaknesses
 - networking failures
 - unfriendly social environment
- including a weak culture of entrepreneurship
- Excessive fragmentation of public research
 - coupled to low levels of cooperation between countries on policies and programmes





Why FP6 became a tool to realise ERA?

- The FP is the only funding arm of EU research policy
 - primary mission of future FPs must therefore be to help realise ERA by tackling these structural weaknesses
- Previous FPs had, however, a different mission
 - were not designed to tackle our structural weaknesses
 - were instead designed to support network-building and high quality research
 - though they lacked concentration and often failed to mobilise the critical mass needed to achieve ambitious objectives of European dimension
 - were also overly complex and excessively bureaucratic in their implementation
- Therefore, to address its new mission, the design of the FP had to be totally rethought





What are the key features of FP6? (1)

- For its objective-driven thematic component
 - much greater concentration on a limited number of topics of strategic importance to Europe
- where the research needs to be carried out at the European level
 - using new more effective instruments capable of mobilising the activities and resources necessary to achieve ambitious objectives of European dimension

Note: these new instruments - integrated projects, networks of excellence, Article 169 - are the principal innovation in the thematic component of FP6





What are the key features of FP6? (2)

Better balance between objective-driven research and actions to reinforce Europe's research base

- expanded and better targeted training & mobility actions
- new bottom-up action to support emerging S&T ("NEST")
- expanded support for research infrastructures
- mainstreaming of most international cooperation, innovation and SME support measures
- new science and society action
- expanded range of measures to support open coordination in research policy-making
- new scheme ("ERA-NET") to support the networking and mutual opening of national programmes





What are the key features of FP6? (3)

- Simplified and streamlined implementation
 - to reduce overheads of participating
 - to speed up procedures
 - to increase flexibility and autonomy of contractors





FP6 budget

€17.5 billion (*compared to €14.96 billion in FP5*)

an increase of 9% in real terms (*a satisfactory result*)

	€billion
Focusing and integrating Community research (<i>mainly “thematic”</i>)	13.345
Structuring ERA (<i>“underpinning”</i>)	2.605
Strengthening the foundations of ER <i>“coordinating”</i>)	320
Euratom (<i>“nuclear”</i>)	1.230





Architecture of FP6*

Integrating European Research (76%)								
Priority Thematic Areas [■] (64%)						Specific activities		
Life sciences ...	Information society ...	Nanotechnologies ...	Aeronautics and space	Food quality and safety	Sustainable development ...	Citizens and governance ...	Policy-oriented research	New and emerging S & T
							Specific SME activities	
							Specific international cooperation activities	
							JRC activities	

Structuring ERA (15%)			
Research and innovation	Human resources & mobility	Research infra-structures	Science and society

Strengthening ERA foundations (2%)	
Coordination of national activities	Support for policy development

→ excluding Euratom (7%)

■ of which, 15% for SMEs





A wider range of better differentiated instruments for implementing the Priority Areas

- “New” instruments
 - integrated projects
 - networks of excellence
 - article 169 (*joint implementation of national programmes*)

These new instruments are characterised by their ability to mobilise the resources needed to achieve ambitious objectives of European dimension

- “Traditional” instruments
 - specific targeted research projects
 - coordination actions
 - specific support actions

These traditional instruments are evolved forms of similar instruments available in FP5





Principles that guided their design

- Simplification and streamlining
 - to minimise the overheads for all concerned
 - to speed up procedures, especially time-to-contract
- Increased legal and financial security
 - to avoid weaknesses of FP5 instruments
- Flexibility and adaptability
 - to enable projects to adapt to changing circumstances, both in the science and in the partnership
- Increased management autonomy
 - to eliminate unnecessary micromanagement





Classification of the instruments

Instrument	Purpose	Primary deliverable
IP	objective-driven research	knowledge
NoE	tackle fragmentation	durable structuring
169	joint national programmes	knowledge and/or structuring
STRP	research	knowledge
CA	coordination	coordination
SSA	support	support





6. SUSTAINABLE DEVELOPMENT, GLOBAL CHANGE & ECOSYSTEMS

The general objective is to implement a sustainable development model and to make a significant contribution to international efforts to:

- * Mitigate adverse trends
- * Understand and control global change
- * Preserve the equilibrium of the ecosystems



The 3 interrelated pillars of Priority 6

Sustainable development Global change and ecosystems

- 6.1 Sustainable energy systems (810 MEuro):**
clean energy, energy savings, alternative motor fuels,
fuel cells, energy carriers/transport/storage
- 6.2 Sustainable surface transport (610 MEuro):**
environmentally friendly transport, interoperability,
safety
- 6.3 Global change and ecosystems (700 MEuro):**
greenhouse gas emissions, water cycle, biodiversity
and ecosystems, natural disasters, land management,
climate observation, complementary research





SELECTED POLITICAL DRIVING FORCES

1. Communications related to the “European Research Area”
2. Green Paper “Towards a European Strategy for the security of energy supply”
3. White Paper “European Transport Policy for 2010: Time to decide”
4. Communication on the Sixth EAP of the EC
“Environment 2010: our future, our choice”
5. Kyoto Protocol and Montreal Protocol
6. “Lisbon process” about the role of knowledge in our Society and economy
7. Göteborg conclusions on the EU Strategy for SD
8. Johannesburg Summit conclusions about the global dimension of SD



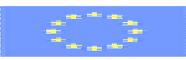


6.3 GLOBAL CHANGE AND ECOSYSTEMS

Specific objectives

- * To strengthen the capacity to understand, detect and predict global change and to develop strategies for prevention, mitigation and adaptation for all greenhouse gases.
- * To preserve the ecosystems and protect biodiversity through activities aiming at the development of common and integrated approaches necessary to implement sustainable development.





The historical perspective on environment research:

- FP3 & 4: Research on ecosystem functioning and environment protection technologies
- FP5: Integration of the environmental dimension in research; more attention to climate, water, coastal integration and urban dynamics
- FP6: Sustainability to be integrated in all areas of research, especially Energy, Transport and Agriculture





GLOBAL CHANGE AND ECOSYSTEMS

RESEARCH PRIORITIES

Impact and mechanisms of greenhouse gas emissions and atmospheric pollutants on climate, ozone depletion and carbon sinks (oceans, forests and soil)

- ***FIRST CALL***

- ◆ *Assessment of the European carbon balance (New)*
- ◆ *Integration of European atmospheric composition (New)*
- ◆ *Integrated climate change scenarios (New)*
- ◆ *Ozone-climate links (New)*
- ◆ *Adaptation and mitigation strategies (New)*





GLOBAL CHANGE AND ECOSYSTEMS

RESEARCH PRIORITIES

Water cycle, including soil-related aspects

FIRST CALL

- ◆ *Improved modelling of climate-water interactions at catchment-regional scale (New)*
- ◆ *Development of a European (Virtual) Centre for Flood and Drought Studies (New)*
- ◆ *Assessment of ecological impacts of global change on freshwater bodies, development of ecological indicators of ecosystem health and related remediation strategies (New)*
- ◆ *River-soil-groundwater system functioning (New)*
- ◆ *Twinning European/third countries river basins(Trad.)*
- ◆ *Technologies for monitoring and mitigating the impact of water scarcity (Trad.)*





GLOBAL CHANGE AND ECOSYSTEMS

RESEARCH PRIORITIES

Bio-diversity and ecosystems

FIRST CALL

- ◆ *Developing a network for European long-term terrestrial and fresh-water biodiversity and ecosystem research (NoE)*
- ◆ *Developing a network to structure and integrate European research on marine biodiversity and ecosystems (NoE)*
- ◆ *Developing genomic approaches (New)*
- ◆ *Development of cost effective, reliable and efficient technologies for enabling progress in biodiversity and ecosystem science (Trad.)*
- ◆ *Generating models of socio-economic impacts on biodiversity and ecosystems (Trad.)*
- ◆ *Assessing large-scale environmental risks (New)*





GLOBAL CHANGE AND ECOSYSTEMS

RESEARCH PRIORITIES

Desertification and natural disasters

FIRST CALL

- ◆ *Research on mechanisms of desertification and soil quality (Trad)*
- ◆ *Integrated earthquake and landslide disaster management methodologies (New)*
- ◆ *Integrated flood risk management methodologies (New)*





GLOBAL CHANGE AND ECOSYSTEMS

RESEARCH PRIORITIES

Strategies for sustainable land management, including coastal zones, agricultural land and forests

FIRST CALL

- ◆ *Development and application of integrated approach and tools for long term sustainability of forest status and productivity (New)*





GLOBAL CHANGE AND ECOSYSTEMS

RESEARCH PRIORITIES

Operational forecasting and modelling, including global climate change observation systems

FIRST CALL (Not included)





GLOBAL CHANGE AND ECOSYSTEMS

RESEARCH PRIORITIES

Complementary research on advanced methods for risk assessment and quality appraisal

FIRST CALL (Not included)





GLOBAL CHANGE AND ECOSYSTEMS

RESEARCH PRIORITIES

Cross-cutting issue: Sustainable Development concepts and tools

FIRST CALL

- ◆ *Harmonising and sharing of methods and data (Trad.)*
- ◆ *High level scientific validation of methodologies, tools and appraisals (Trad.)*
- ◆ *Indicators (Trad.)*





GLOBAL CHANGE AND ECOSYSTEMS

RESEARCH PRIORITIES

Specific Support Actions

FIRST CALL

- ◆ *Mechanisms such as European Network for Research and Global Change (ENRICH)*
- ◆ *Consolidating knowledge on the role of wetlands in the water cycle*
- ◆ *European contribution to international observation systems*
- ◆ *Capitalisation of results from the past research on sustainable agriculture*
- ◆ *Lessons from past research on sustainable production and utilisation of forests*





European Network for Research Into Global CHange

Main objectives of ENRICH:

- i) to promote a pan-European contribution to the international global change research programmes;
- ii) to foster collaboration between and promote support for global change research in Western Europe, Central and Eastern Europe and NIS, Africa, Asia and other developing countries;
- iii) to promote the establishment of Communication links/networks;
- iv) to improve the access by the scientific community to EU mechanisms for support to global change research.





European Network for Research Into Global CHange

EU Support in FP5 (1998-2002):

1.6 Million Euro for 7 AM

- CFEWE (Carbon Flows between Western and Eastern Europe)
 - 6 Partners in NL, IT, CZ, PL, RUS, UK;
- KEEN (Kyoto mechanism Expert Network)
 - 4 Partners in NL, IT, UK, D;
- EURO-IDEAL (A European Consortium for Participation in the IDEAL Project);
 - 11 Partners in NOR, UK, F, B, D, NL, IT;
- NEU-CO2 (Non-energy use and CO2 emissions)
 - 11 Partners in NL, F, IT, UK, RUS, PL, AUT, B, India, DK;
- EU-LTSERNET (A European Long term Socio-Environmental Research Network)
 - 1 Partner in F;





European Network for Research Into Global CHange

- **WASAC** (West Africa's Savannah under Change. Sensitivity of the Savannah in West Africa to population change, cultivation change and climate change)
 - 5 Partners in DK, F, ESP;
- **CLIMAG-WA** (A Network for: Harmonization of Climate Prediction for Mitigation of Global Change Impact in Sudano-Sahelian West Africa);
 - 10 Partners (3 in Europe (IT, UK, NL) + 5 in Afrika (Niger, Mali) + 2 Int. Org. (WMO + START)).





European Network for Research Into Global CHange

Future of ENRICH under FP6:

- 1st FP6 call for proposals (Published: 17.12.2002) calls for **Specific Support Actions (SSA)**:
 - such as the **European Network for Research in Global Change (ENRICH)** to build and strengthen co-operation with partners in the developing world on issues such as climate change, biodiversity, ecosystems, natural risks and hazards.
 - Info: <http://europa.eu.int/comm/research/fp6>
Deadline for submission of proposals: 8. April 2003!!!
- 2nd FP6 call for proposals (to be published in June 2003) will repeat the call on ENRICH Specific Support Actions:
Deadline for submission of proposals: Oct. 2003





6.3 Global change and ecosystems: Call 2003

- Closure date: 8 April 2003
- Available budget:
 - EUR 170 million





SP1: Integrating and Strengthening ERA

Part 1 Focusing and Integrating

1.2. „Wider field of research” („Priority 8“)

Funds
(Mill. EUR)

1. Policy support and anticipating scientific and technological needs	555
2. Horizontal research activities involving SMEs	430
3. Specific measures in support of international cooperation	315

Total

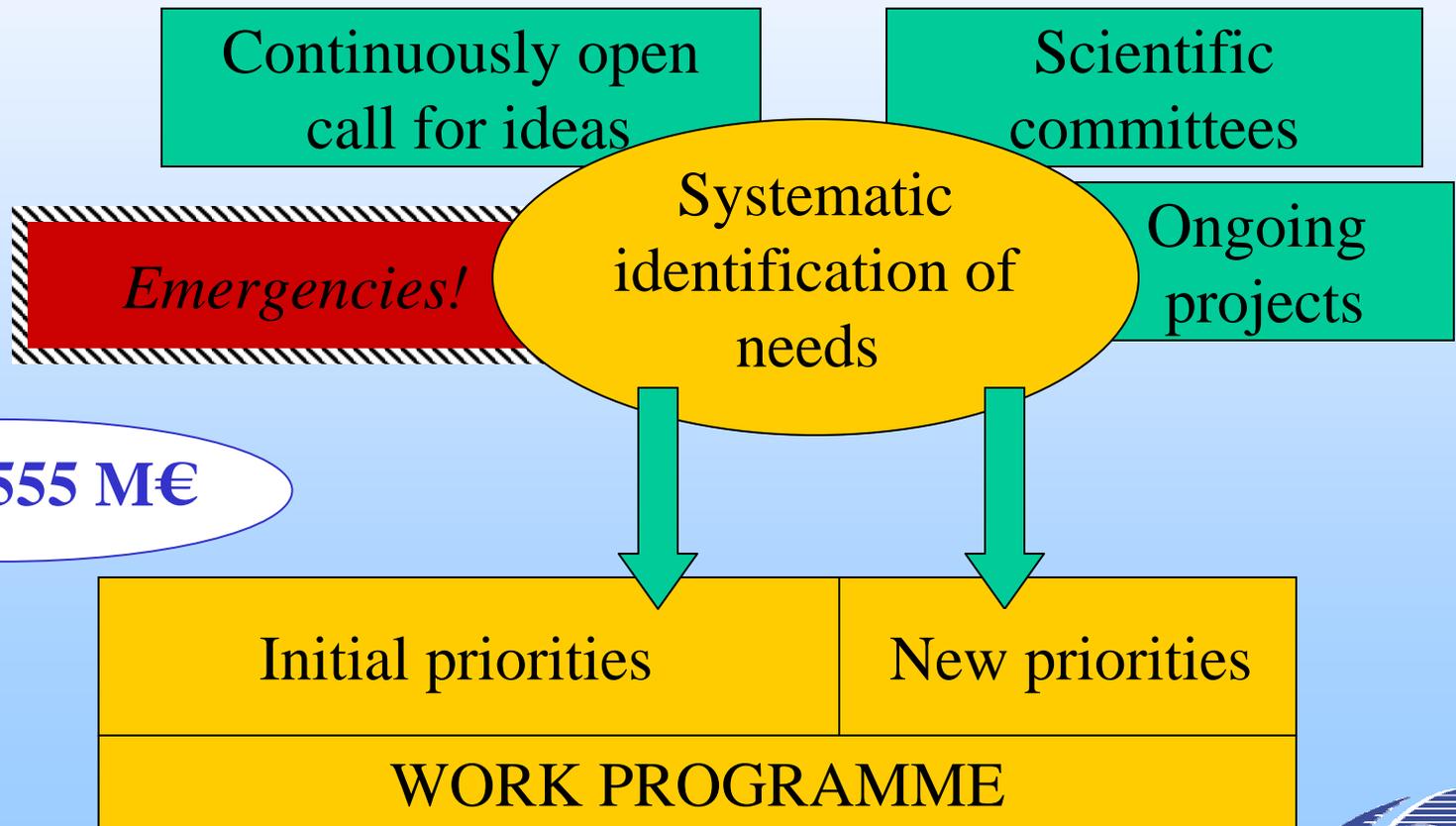
1 300





Supporting policies and anticipating S/T needs

- ✉ scientific support to Community policies (CAP, CFP, ...)
- ✉ research to explore new and emerging areas





Policy support and anticipating scientific

555

M€

and technological needs

- Scientific Support to Policies (SSP)

340 M€

- New and emerging science and

215 M€

technology needs (NEST)





SSP overall objective

Support the formulation and implementation of Community policies, by providing scientific contributions to policies that are targeted precisely on needs (“demand-driven”), coherent across the various Community policy areas, and sensitive to changes in policies as they take place.





Scientific Support to Policies (related to PRIORITY 6)

1. Sustainable management of Europe's natural resources

- *Environmental assessment (soil, water, air, noise, chemicals)*
- *Assessment of environmental technologies*

2. Providing health, security and opportunity to the people of Europe

3. Underpinning the economic potential and cohesion of a larger and more integrated EU

- *Forecasting and developing innovative policies for sustainability*
- *The protection of cultural heritage*





Scientific Support to Policies

The proposed research will contribute to the implementation of the :

- 6th Environment Action Plan
- European transport policy
- EU secure energy strategy
- air quality policy
- noise policy
- waste policy
- water Framework Directive
- Sustainable Development EU Strategy
- Urban thematic strategy
- Article 151 (EC Treaty) - cultural heritage





1.2.3. Specific measures to support international co-operation

(Participation of third countries in Thematic Priorities: 285 M€)

+

Specific Measures (Support to the Foreign and **Development** policies of the EU: **315 M€**)

Third countries: Countries, which are not EU members and are not associated to the Framework Programme.





Three **major** routes for international scientific co-operation in FP6



- ◆ Opening of “Focusing and Integrating Community Research” to third country organizations (**with substantial funding**)
- ◆ Specific measures in support of international co-operation
- ◆ International mobility of researchers

Over and above these three major routes, the international dimension is a cross-cutting issue which concerns the whole Framework programme





Opening of “Focusing and Integrating Community Research” to third country organizations (1)

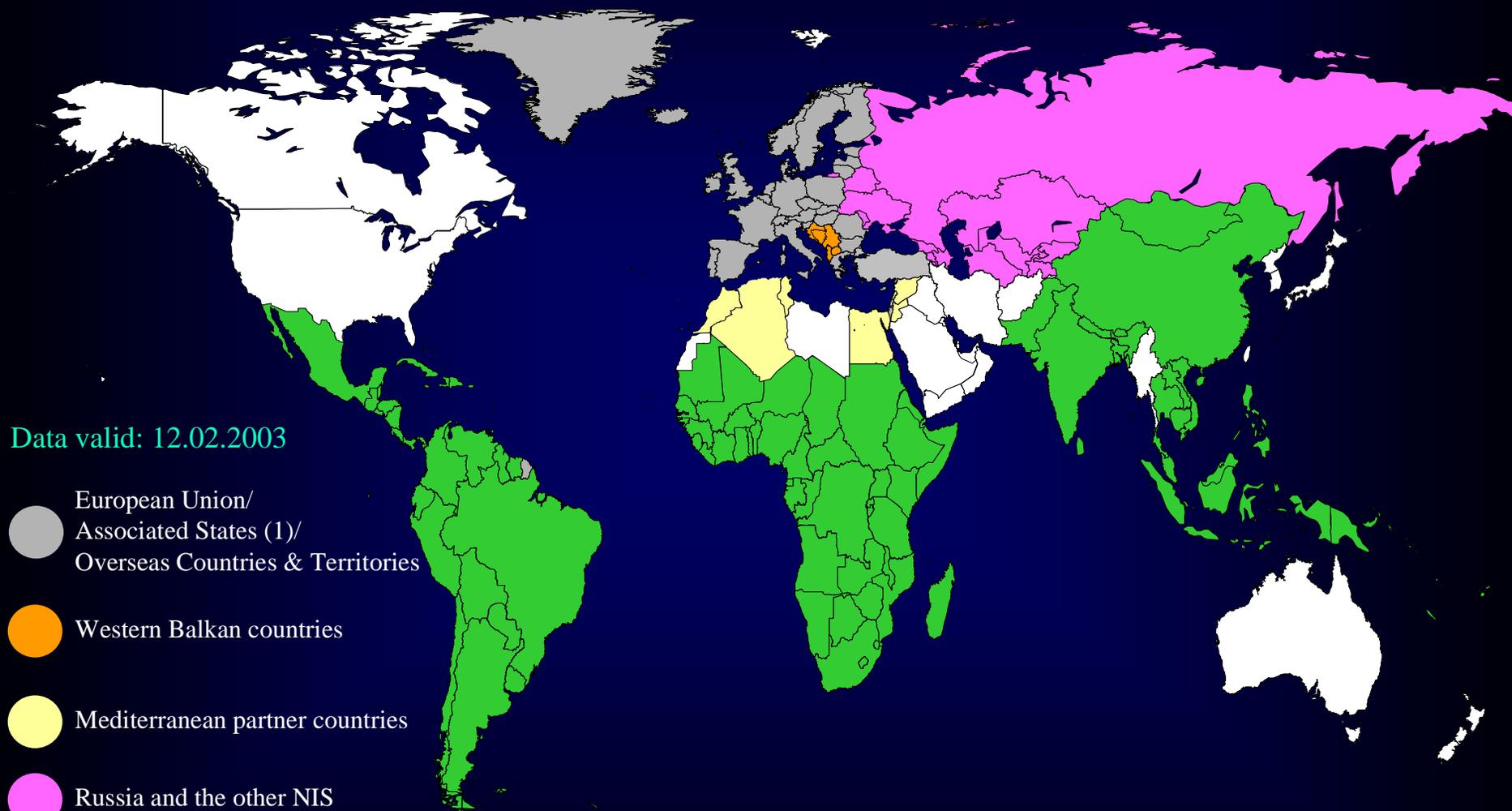
- ◆ Participation of researchers, teams and institutions from third countries in projects within
 - ◆ the seven Priority Thematic Areas of Research,
 - ◆ Specific activities covering a wider field of research (NEST, horizontal SME activities)
- ◆ Budget: **285 million Euro** for the funding of third country participation in RTD-actions





SIXTH FRAMEWORK PROGRAMME 2002-2006

Target Countries of specific measures in support of international cooperation



Data valid: 12.02.2003

- European Union/
Associated States (1)/
Overseas Countries & Territories
- Western Balkan countries
- Mediterranean partner countries
- Russia and the other NIS
- Developing countries

(1) Some agreements are not yet into force

The European Commission does not guarantee the accuracy of data included in this map and accepts no responsibility whatsoever for any consequence of its use. The boundaries shown do not imply on the part of the European Commission any judgment on the legal status of any territory or the endorsement or acceptance of such boundaries.



Specific measures in support of international co-operation (1)

- ◆ **Dedicated** international cooperation activities which are relevant to some groups of countries or regions with **own calls for proposals**
- ◆ **Budget: 315 million Euro** to fund RTD actions
- ◆ **Strategic objective**
To lend support, in the scientific and technological field, to the implementation of the Community's foreign policy and development aid policy
- ◆ **Overall focus**
mutual interest





Specific measures in support of international co-operation (4)

Calls for proposals in work programme 2003

Co-operation with third countries

- ◆ **A: Developing countries**
- ◆ **B: Mediterranean Partner countries**
- ◆ **C: Western Balkan countries**
- ◆ **D: Russia and the other New Independent States**

STREP/CA
11.09.03

SSA
11.03./4.09.03

STREP/CA
7.05.03

SSA
11.03./4.09.03

STREP/CA
7.05.03

SSA
11.03./4.09.03

SSA
11.03./4.09.03

Multilateral co-ordination of national RTD policies and activities

- ◆ **E: Strengthening of co-ordination with other foreign policy instruments and definition of research priorities**

SSA
11.03./4.09.03





International mobility of researchers (2)

- ◆ **in-coming fellowships with possibility for “return ticket”**
 - ◆ to work and undertake research training in Europe
 - ◆ provision to assist fellows to return to their countries of origin in case of emerging and transition economies and developing countries
- ◆ **out-going fellowships**
 - ◆ to be awarded to research workers from EU and Associated Countries to work in established third country research centres
 - ◆ requires submission of a coherent individual training programme involving a first phase abroad followed by mandatory second phase in Europe





International mobility of researchers (3)

- ◆ In addition opening of other Marie Curie actions to third country **researchers**
 - ◆ Host driven actions
 - ◆ Marie Curie Research Training Networks
 - ◆ Marie Curie Host Fellowships for Early Stage Research Training
 - ◆ Marie-Curie Conferences and Training Courses
 - ◆ Excellence Promotion and Recognition actions





SIXTH FRAMEWORK PROGRAMME 2002-2006

Participation by legal entities from third countries

- Structuring ERA/Strengthening foundations of ERA (excluding fellowships) -



Data valid: 1.11.2002

-  European Union/
Associated States (1)/
Overseas Countries & Territories
-  Third countries with S&T cooperation
agreement: participation in
accordance with conditions of
agreement (2); funding if provision
under RTD activity or essential for
carrying out indirect action
-  S&T cooperation agreement in
preparation; same as  until entry into
force
-  Third countries without S&T
cooperation agreement: participation
if provision under RTD activity or
necessary for carrying out indirect
action; funding if provision under
RTD activity or essential for carrying
out indirect action
-  Currently no cooperation

- (1) Some agreements are not yet into force
- (2) Certain agreements have to be renewed

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EUROPEAN
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Community Research

Information

To build on current EU Research

www.cordis.lu

Information on FP6

<http://europa.eu.int/comm/research/nfp.html>

FP6 Instruments explained

<http://europa.eu.int/comm/research/nfp/networks-ip.html>

Expressions of Interest: Results

www.cordis.lu/fp6/eoi-instruments



ANTARCTICA – in from the cold?

Michael Stoddart
Chief Scientist, Australian
Antarctic Program





Antarctica 12,000,000 sq.km, increasing to 24,000,000 sq km with winter sea ice

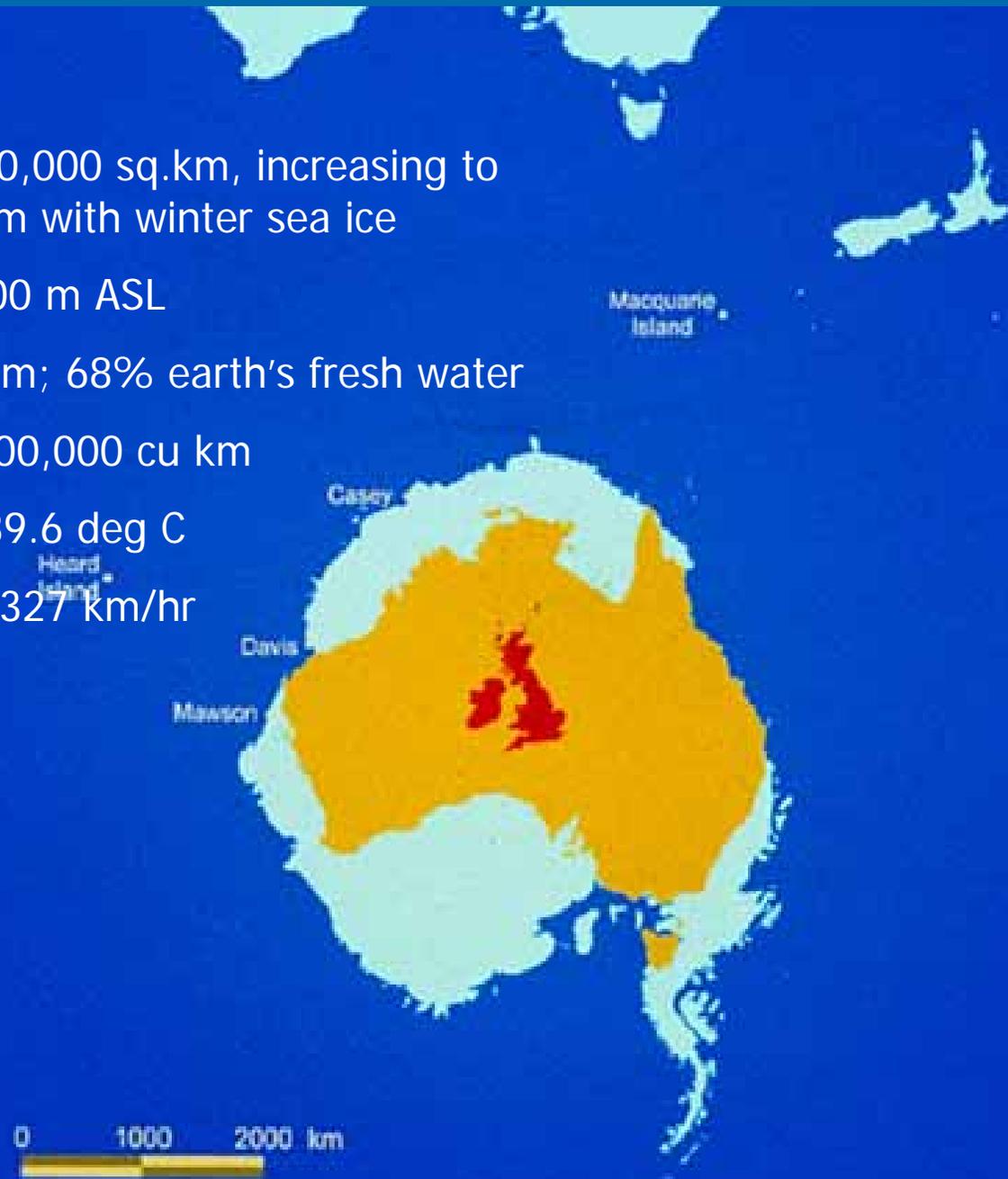
Ave altitude 2,300 m ASL

Ice depth 4,776 m; 68% earth's fresh water

Ice volume 29,300,000 cu km

Coldest temp: -89.6 deg C

Strongest wind: 327 km/hr





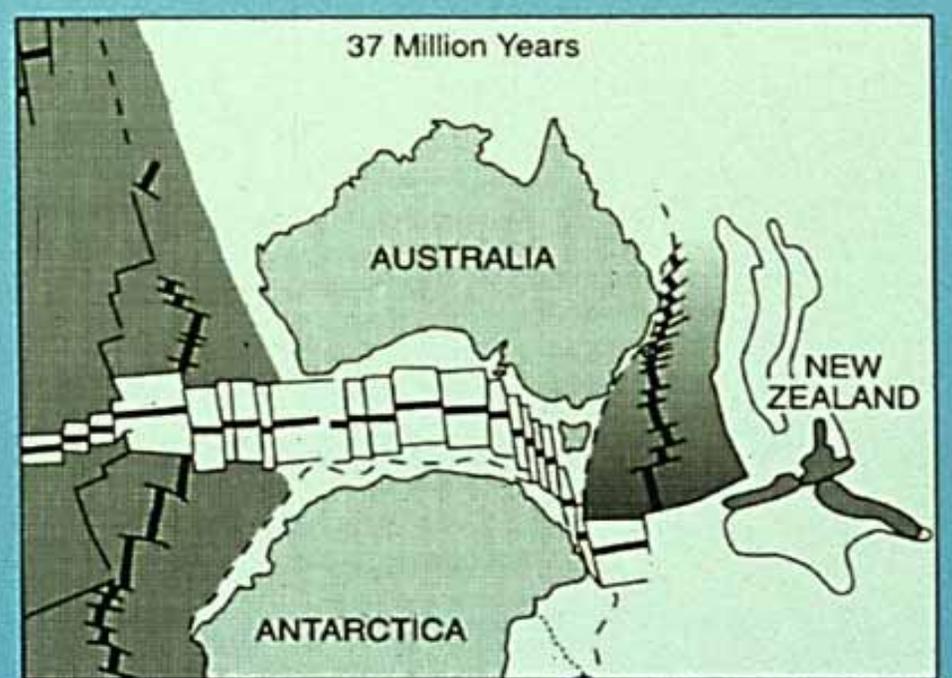
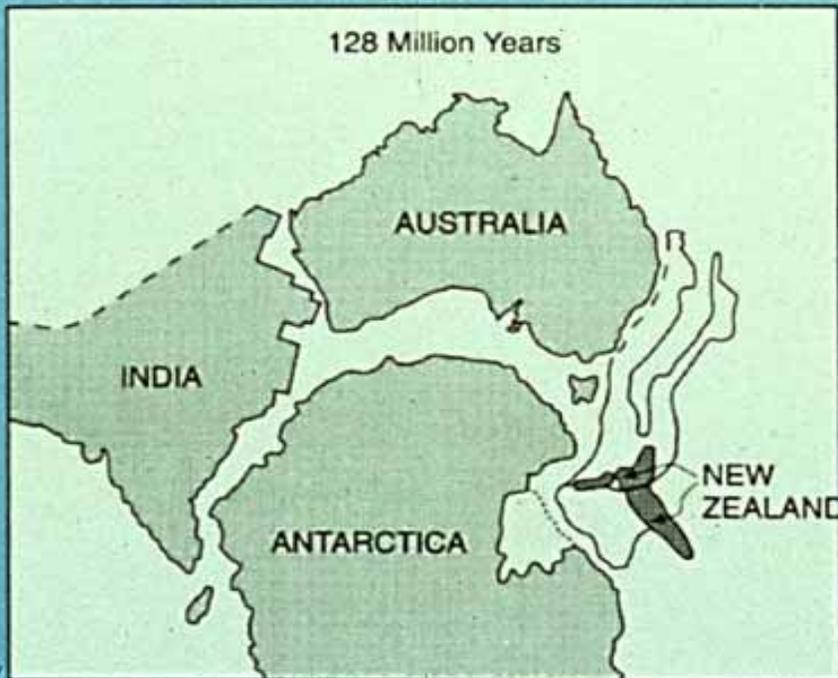
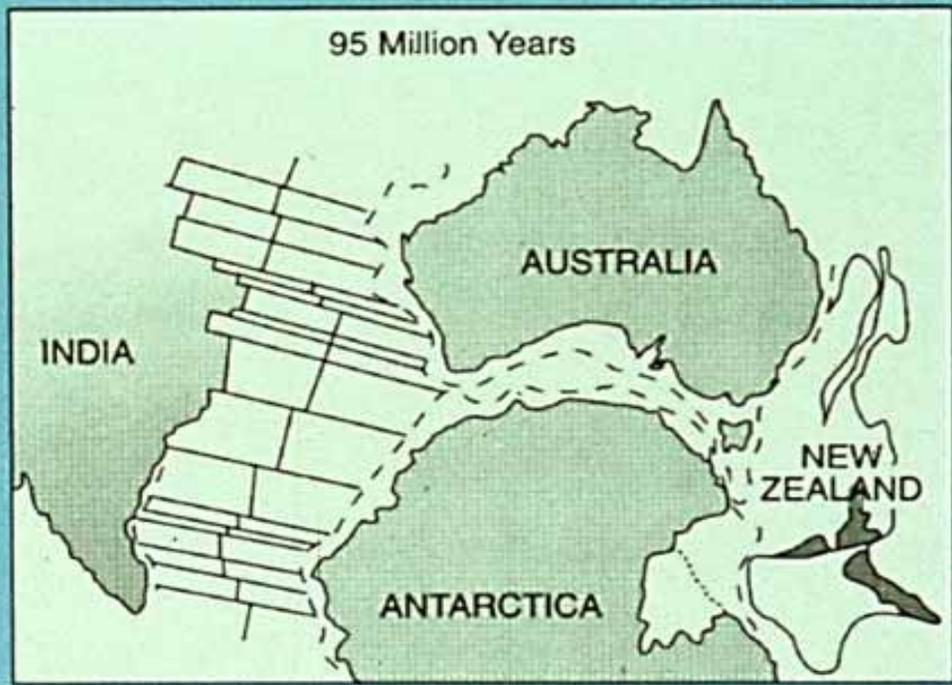
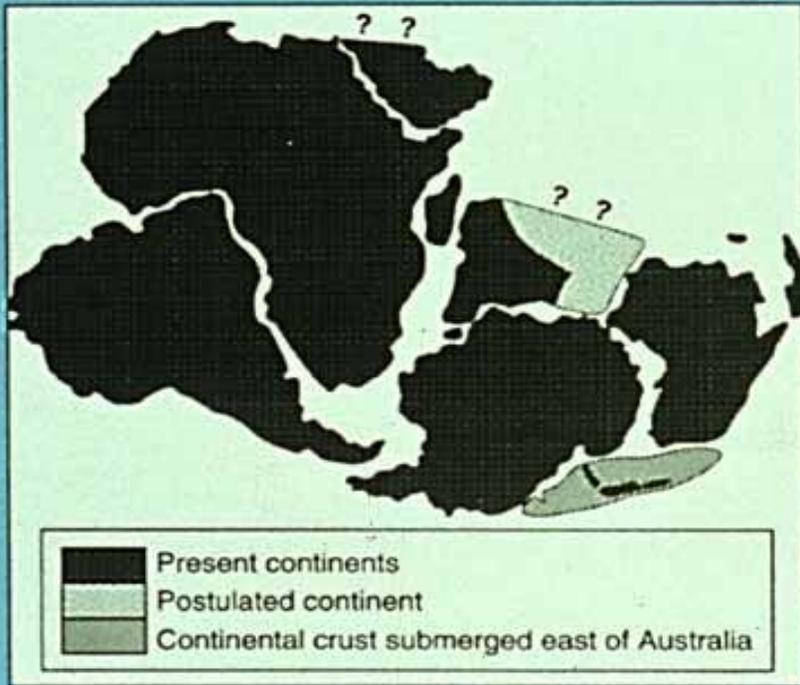


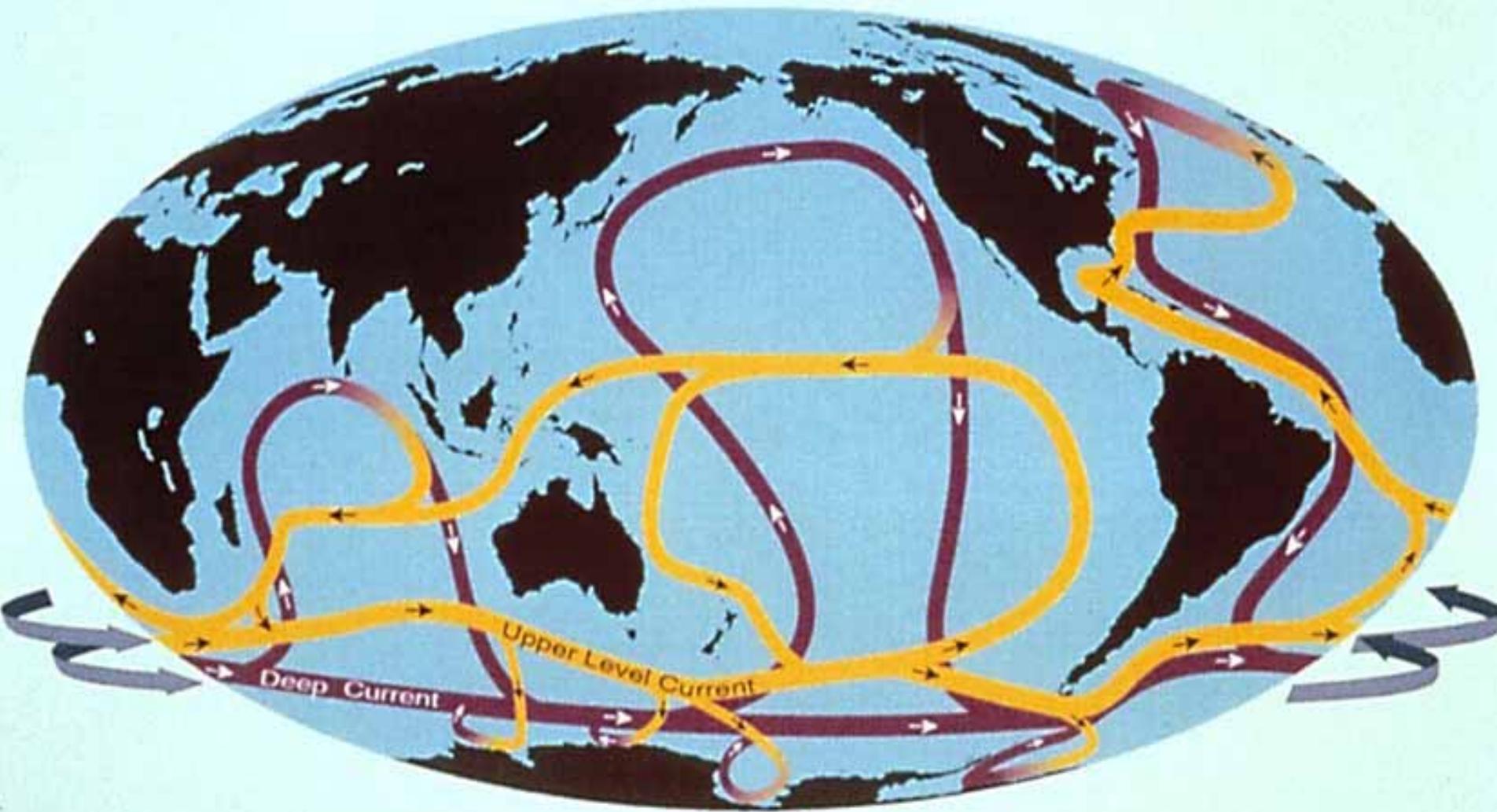












Ocean conveyor belt system

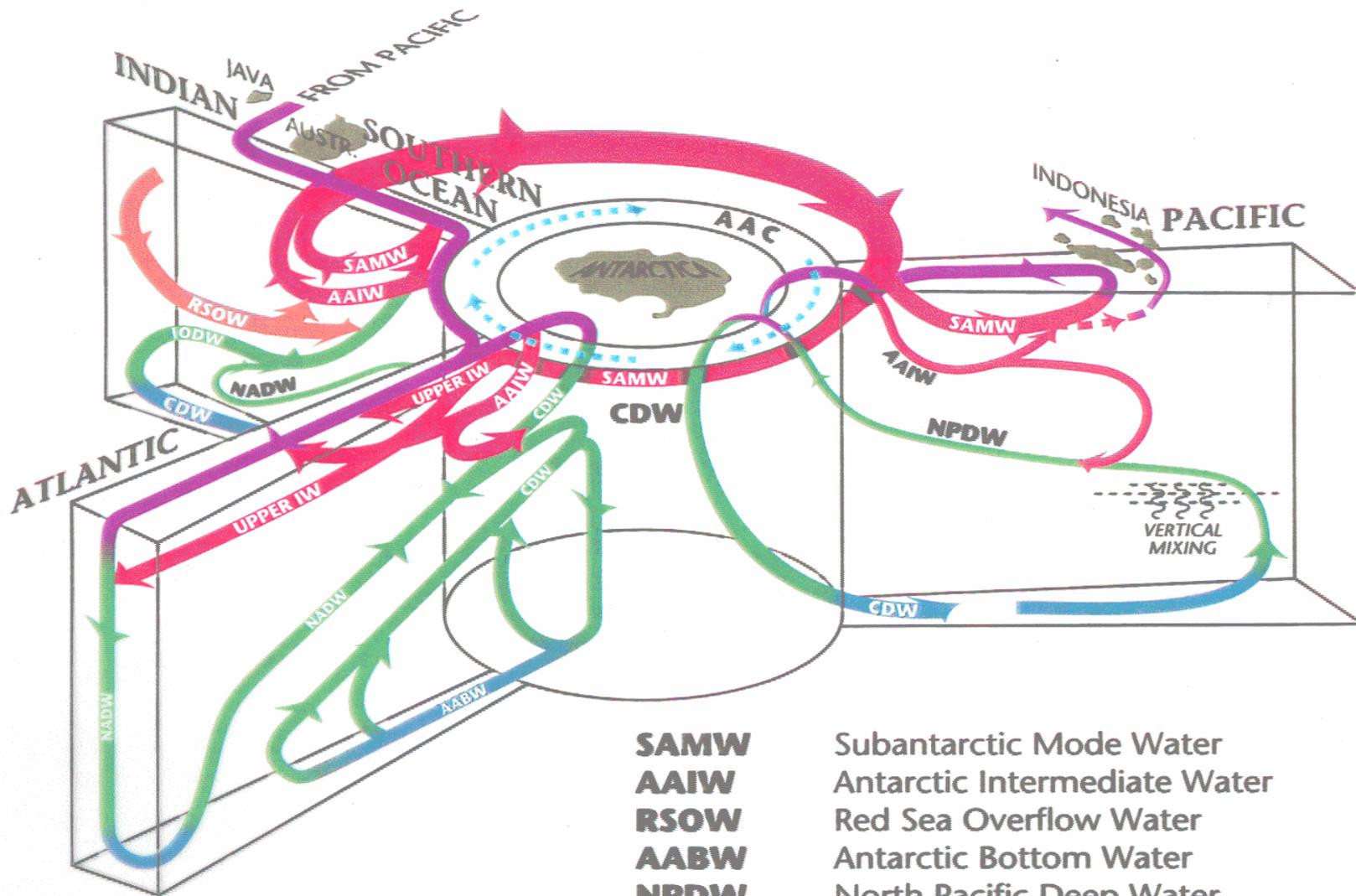
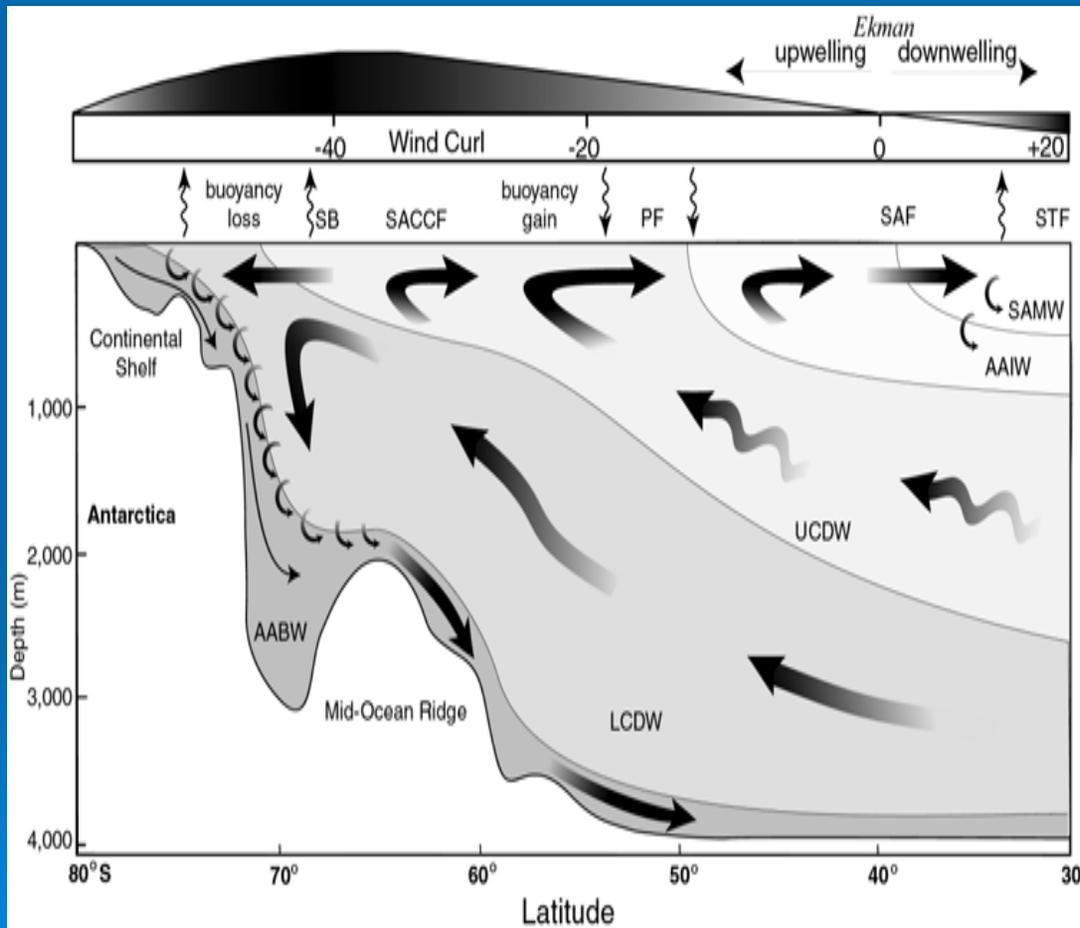


Figure I-91: A new version of Figure I-90 with schematic meridional sections of interbasin flow for each ocean with their global linkages.

SAMW
AAIW
RSOW
AABW
NPDW
AAC
CDW
NADW
UPPER IW
IODW

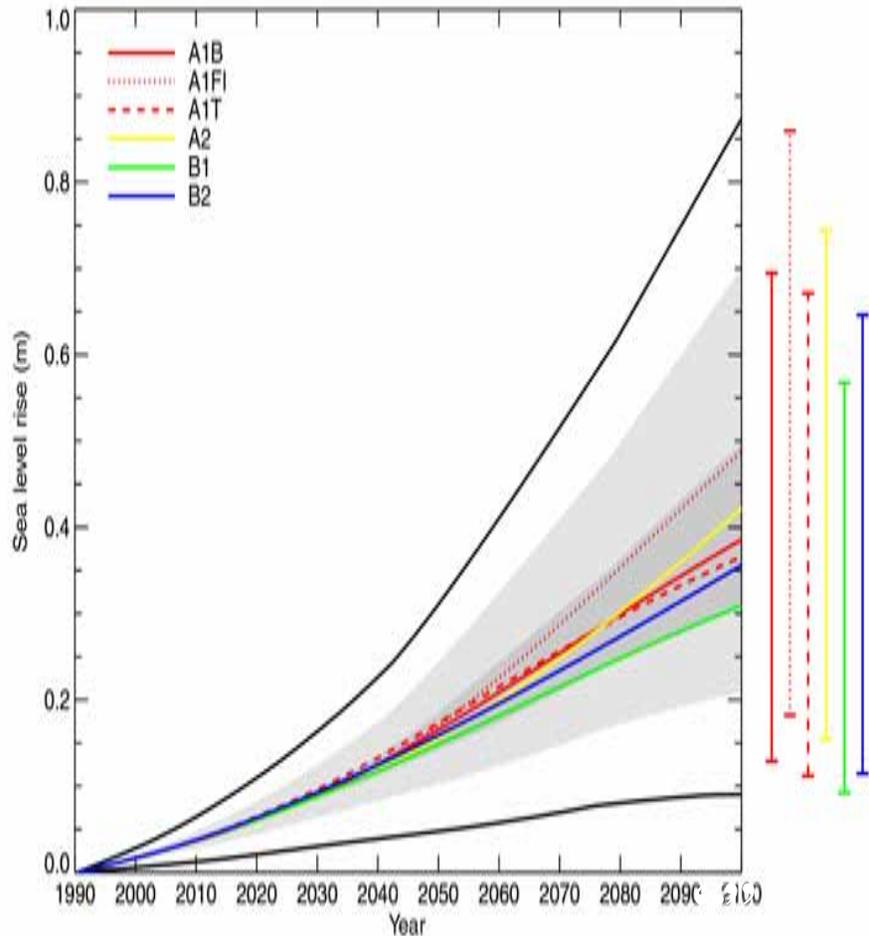
Subantarctic Mode Water
 Antarctic Intermediate Water
 Red Sea Overflow Water
 Antarctic Bottom Water
 North Pacific Deep Water
 Antarctic Circumpolar Current
 Circumpolar Deep Water
 North Atlantic Deep Water
 $26.8 \leq \sigma_{\theta} \leq 27.25$
 Indian Ocean Deep Water

Predicting Change to Enable Response



Reduced nutrient supply as up-welling of deep waters slows down.

Sea level rise prediction

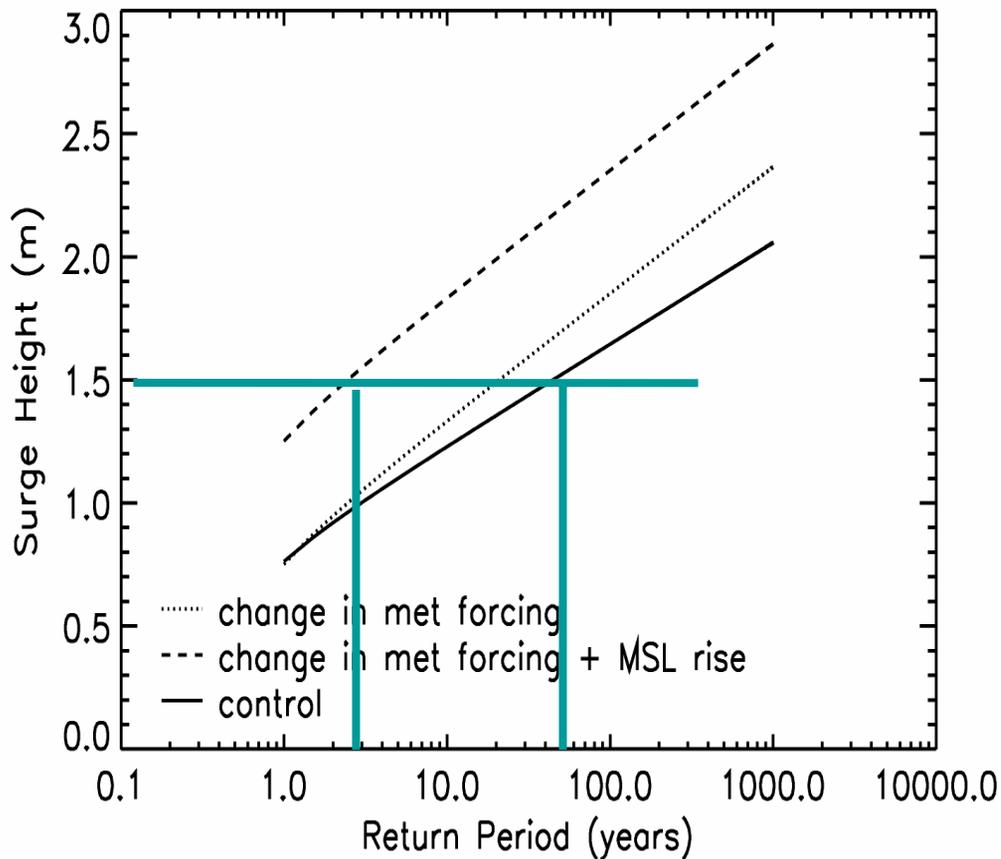


Sea level is projected to rise by as little as 0.09 or as much as 0.88 m between 1990 and 2100.

Improving the precision on the predicted rise is required to ensure that efficient adaptation can be implemented.

IPCC, 2000

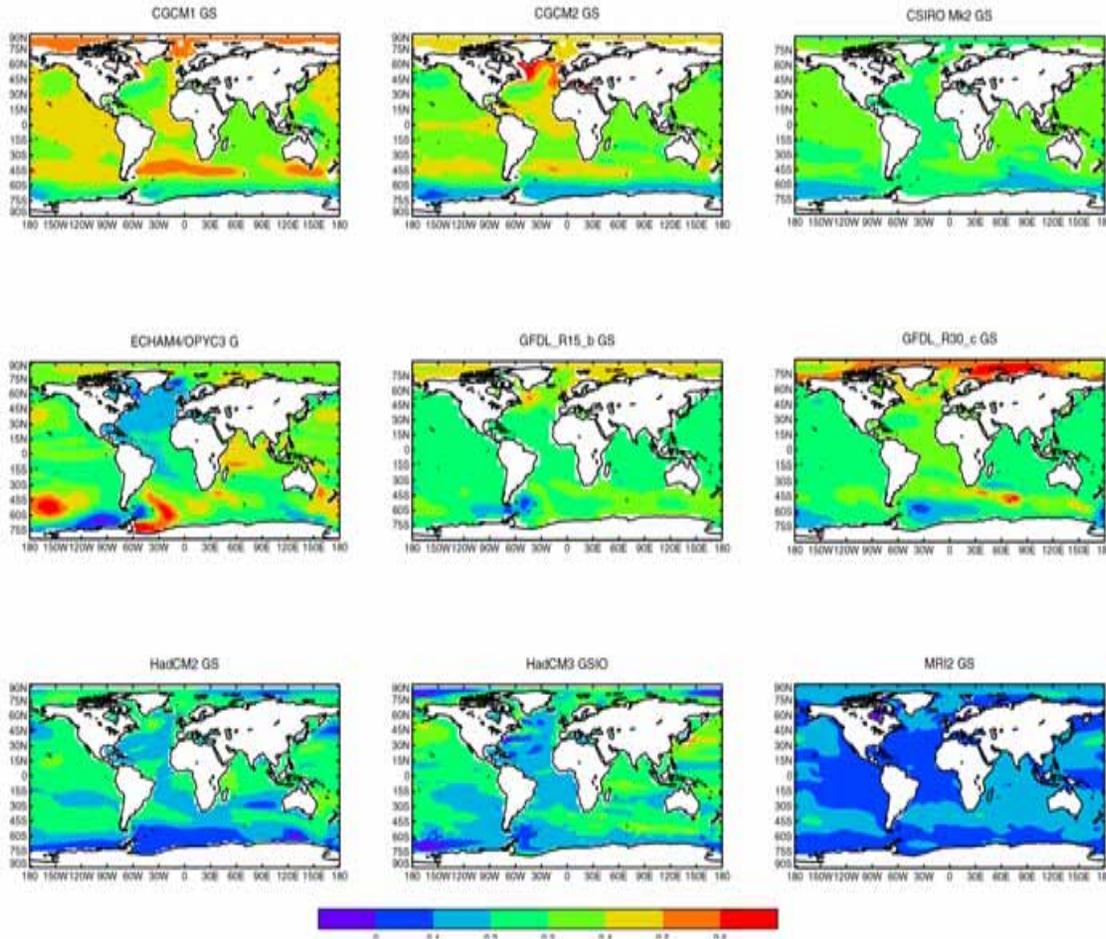
Predicting the Impacts of Sea Level Rise



The frequency of extreme floods will change in response to both sea level rise and changed meteorological conditions.

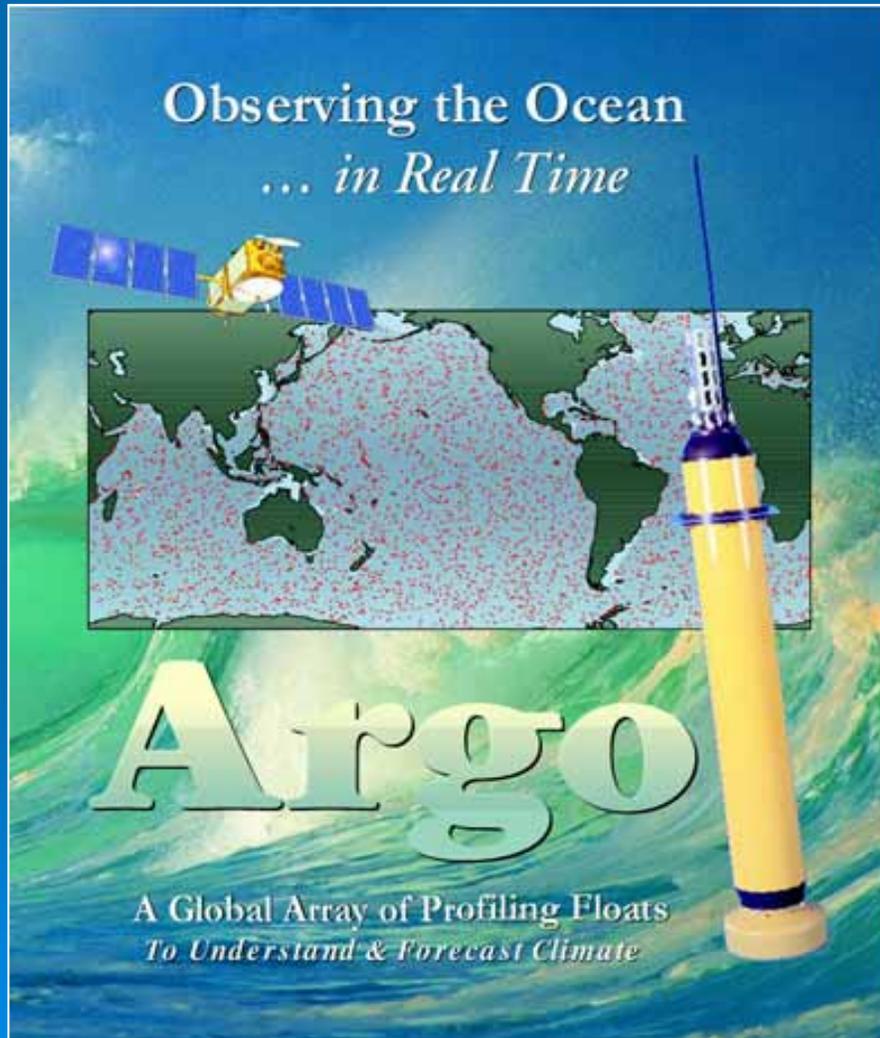
At this site in England, “50 year floods” are predicted to occur every 2 years in the future.

Predicting the Impacts of Sea Level Rise



Sea-Level will not rise equally in all regions. Global analysis of thermal expansion, ice melting, and circulation are required for successful assessment.

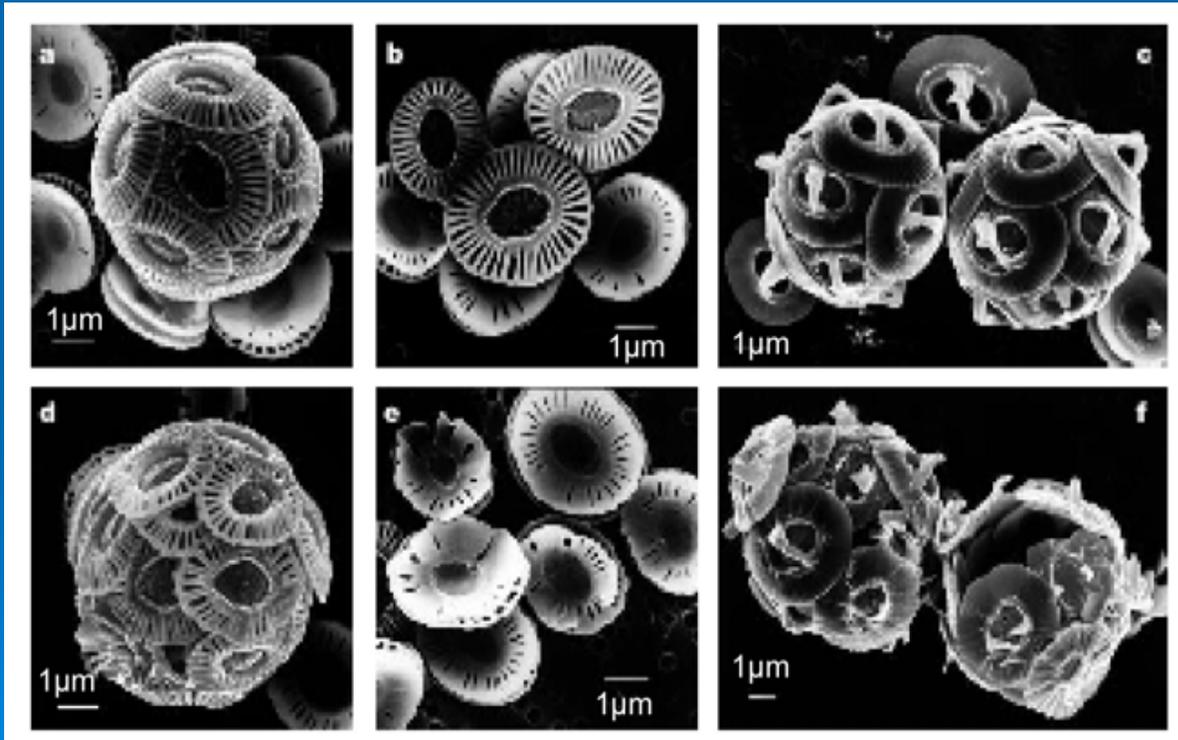
New Tools



Ocean variability contributes to climate and ecosystem impacts. Advances in satellite remote sensing, autonomous floats, and mooring systems can now provide real-time observations to enable predictive assessment of variability and impacts.

Greenhouse Impacts

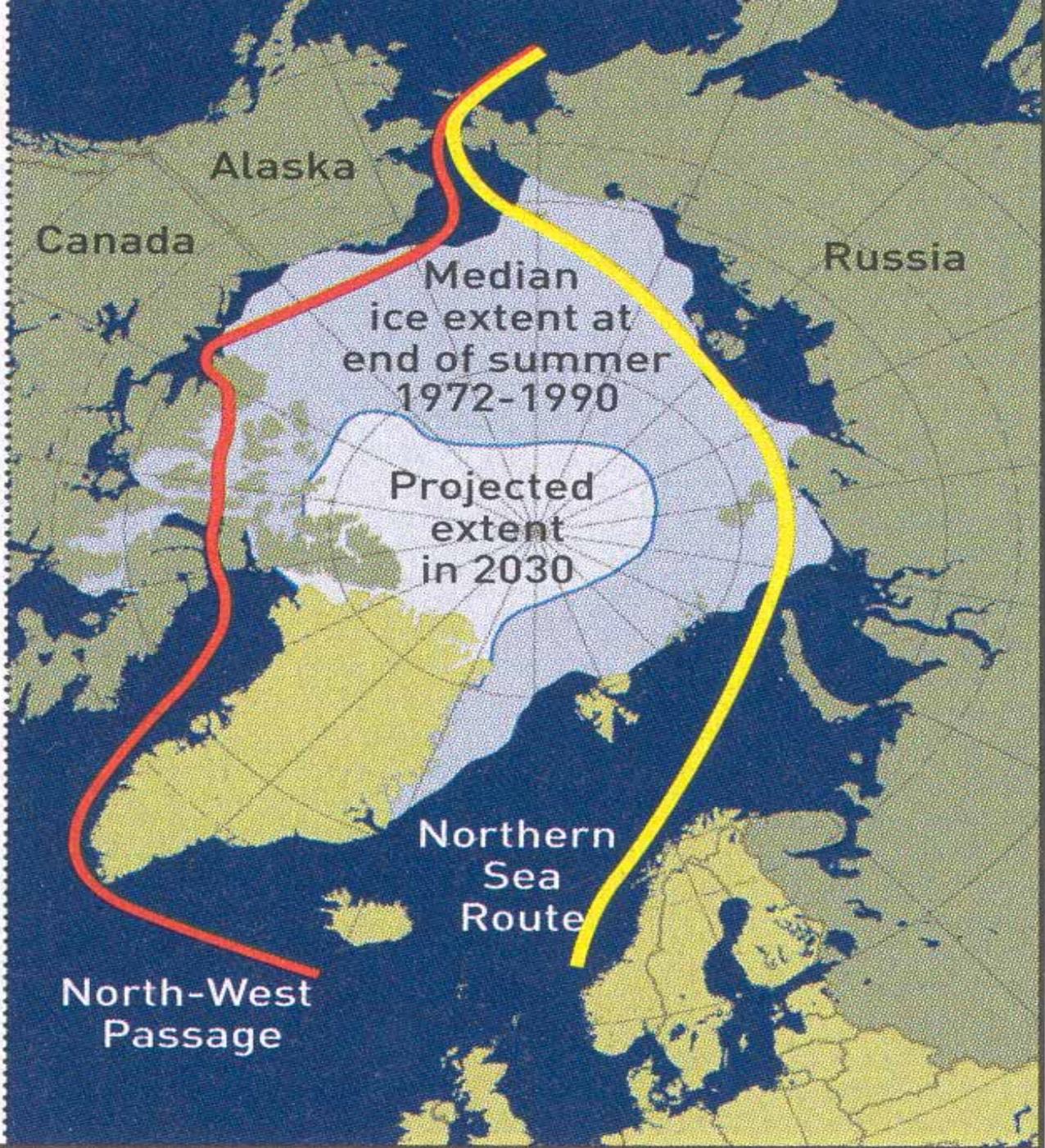
- CO₂ uptake this century will lower ocean pH by ~0.3 units, affecting trace metal and other nutrient availability to phytoplankton, and limiting carbonate shell formation.



Coccolithophores grown in the laboratory have deformed shells at 2-times current CO₂ levels.

Riebesell et al.,
2000

Melting away



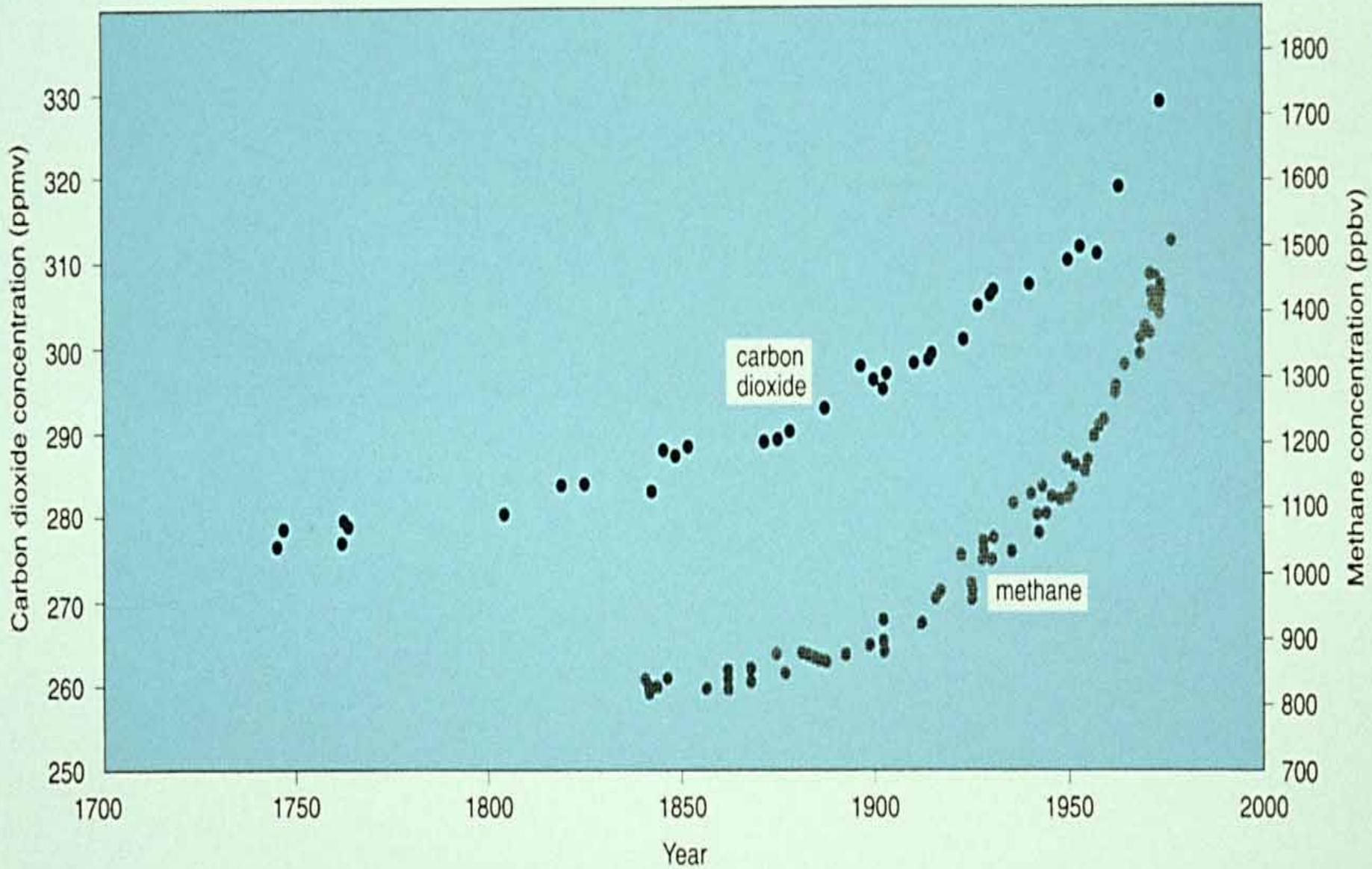


Figure 3 Concentration of carbon dioxide and of methane from trapped air measurements for the DE08 ice core near the summit of Law Dome, Antarctica (data measured by CSIRO Division of Atmospheric Research from ice cores supplied by Australian Antarctic Division)

Dust concentration
($10^{-9} \text{ cm}^3/\text{g}$)

600
400
200
0

Difference
in air
temperature
from present
climate ($^{\circ}\text{C}$)

warmer
↑
↓
colder

2
1
0
-1
-2
-3
-4
-5
-6

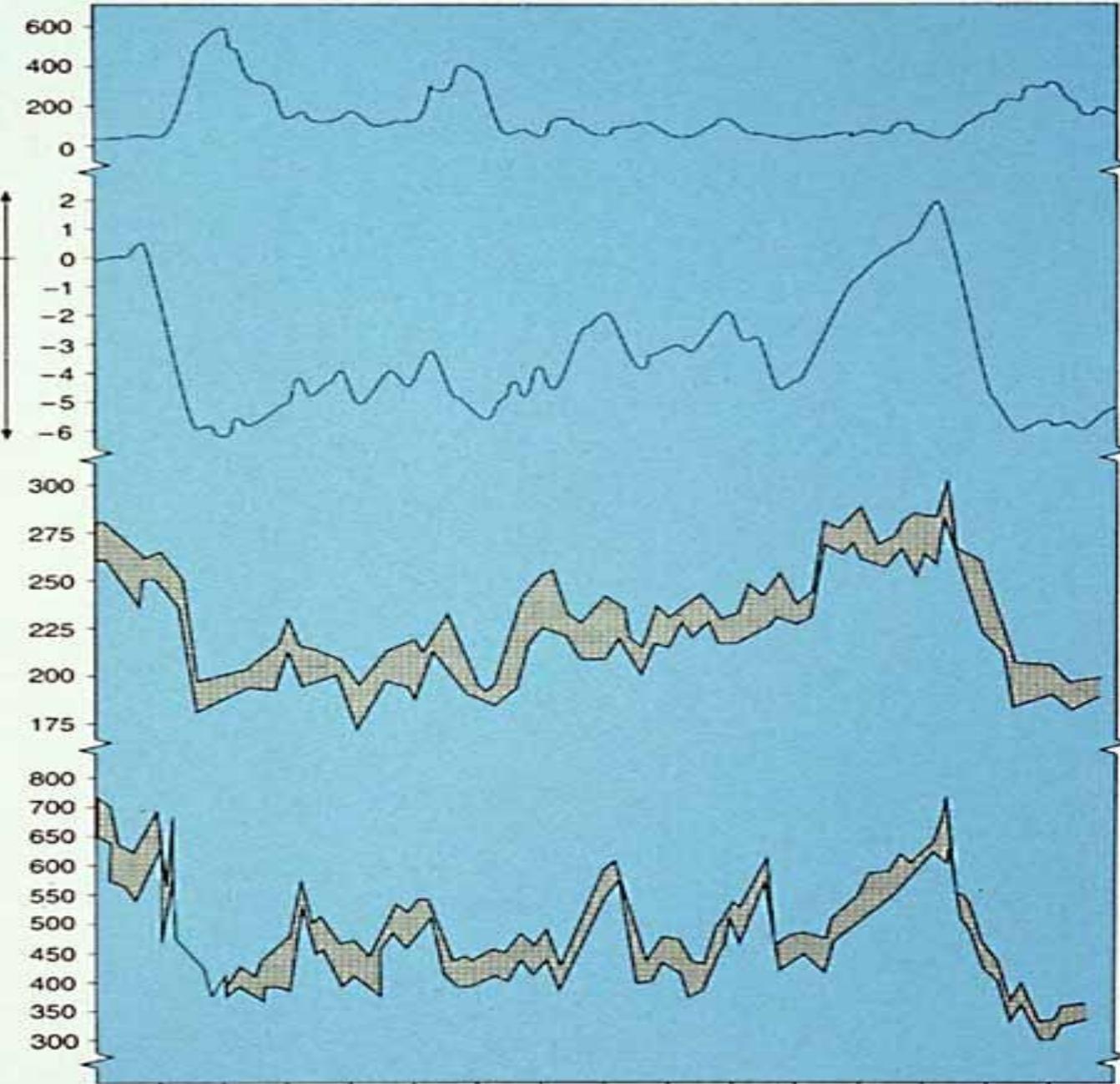
Concentration of
carbon dioxide in
the atmosphere
(parts per million)

300
275
250
225
200
175

Concentration of
methane in
the atmosphere
(parts per billion)

800
700
650
600
550
500
450
400
350
300

0 20000 40000 60000 80000 100000 120000 140000
present Time (years ago)





Southern ocean ecosystem

- Biogeochemical cycles
- Carbon dioxide uptake
- Ocean sustainability



Southern Ocean ecosystem

- The foundation of understanding of the physical environment now enables assessment of impacts on ecosystems

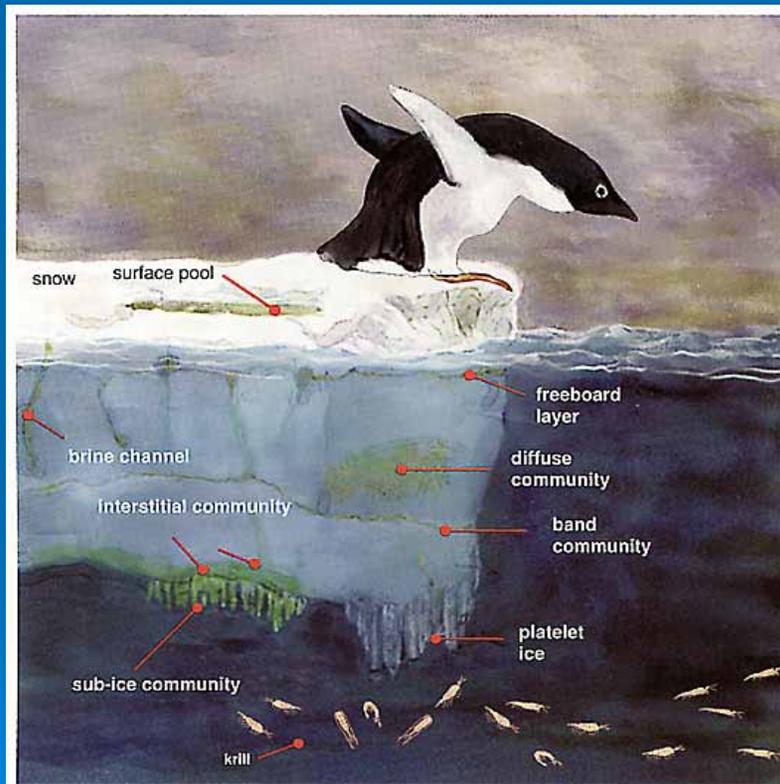
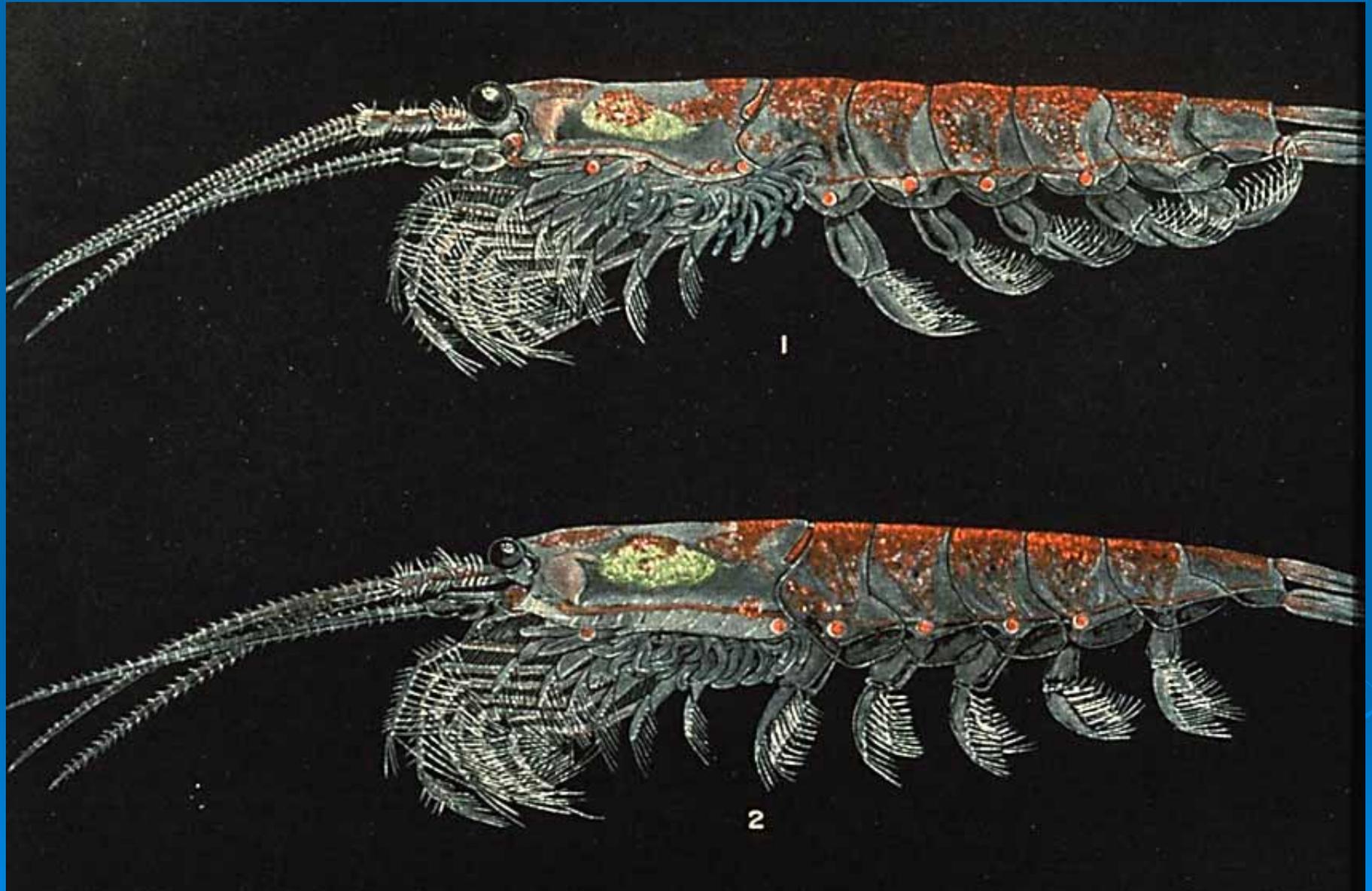
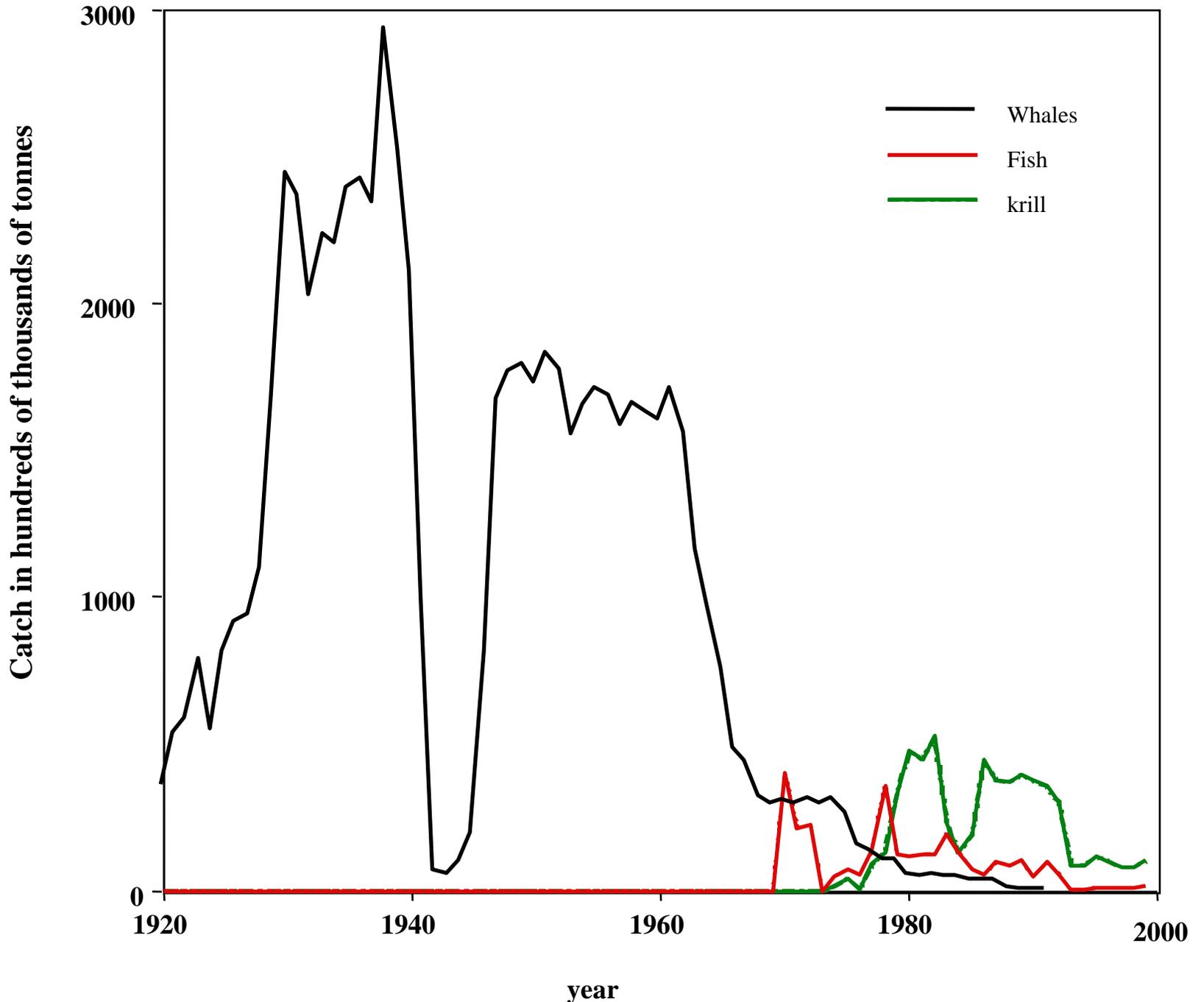


Figure 12. Sea-ice communities may consist not only of phytoplankton but also of an amazing variety of biota that resemble benthic (bottom-living) fauna. They may take up residence on top of, within or on the bottom of floes. Such communities survive a wide range of salinities and temperatures below -6 degrees Celsius. Sea-ice biota may account for 20 percent of overall productivity in the Southern Ocean.

Sea-ice
supports unique algal
communities,
provides havens from
predators,
and is essential to much of the
unique marine wildlife
of the
Southern Ocean and Antarctica







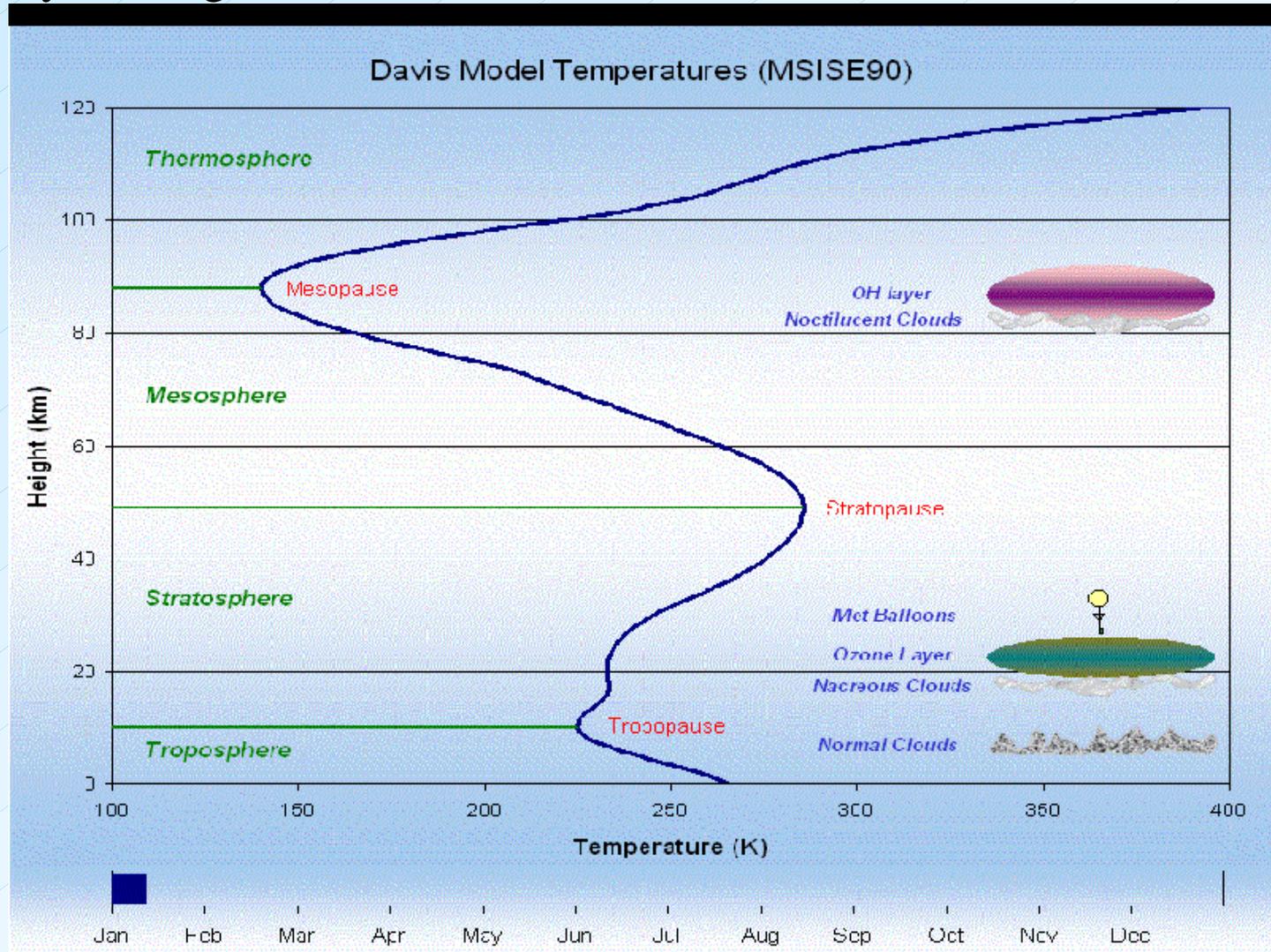
Middle atmosphere

- Lidar
- Mesopause changes



The polar mesopause regions are the coldest regions in the atmosphere.

... they are a global extreme.



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