EAPPCED II

Proceedings Of The Second East Asia & Pacific Parliamentarians' Conference On Environment And Development

[APRIL 20-23, 1994]

The House Standing Committee On Environment Thailand National Assembly Bangkok, Thailand

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APRIL 20-23, 1994

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D APRIL 20-23, 1994

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FOREWORD

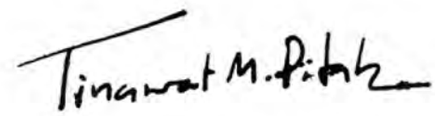
This publication reports the proceedings of the Second East Asia and Pacific Parliamentarians' Conference on Environment and Development (EAPPCED II), held April 20-23, 1994, in Phuket, Thailand.

This was the second regional meeting to follow through on a parliamentarians' decision at the historic United Nations Conference on Environment and Development (UNCED), the "Earth Summit", held in Rio de Janeiro, Brazil in 1992. At UNCED, parliamentarians determined there is a major need to develop better communication and cooperation mechanisms between parliamentarians within regional areas in order to implement the policies agreed to at Rio.

The landmark EAPPCED I meeting was held in Seoul, Korea in 1993, just one year after the Rio Conference. At this meeting, parliamentarians affirmed their shared concerns about balancing environment and development, and laid the foundations for improved regional cooperation. It was decided that annual meetings would be important, and Thailand was selected to be the host country for 1994.

This 1994 conference was organized under the auspices of the Thailand National Assembly. Greatly assisting the conference were its co-sponsors: the United Nations Environment Programme (UNEP), the Asia Foundation, GLOBE International (Global Legislators Organized for a Balanced Environment), and Phuket Province. Numerous local corporate sponsors also assisted with conference support. The reports presented at the conference and reproduced in this publication are of very high quality. I encourage their wide readership and distribution. Parliamentarians' deliberations at the conference clearly demonstrated their awareness of problems and issues and their commitment to working cooperatively to address them.

I look forward to our deepening cooperation as we prepare for EAPPCED III in Malaysia in 1995.



Mr. Tinawat Marukpitak

President of EAPPCED II
Chairman of House Standing
Committee on Environment
of the Thailand National Assembly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ON ENVIRONMENT AND DEVELOPMENT
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EAPPCED II

[SECTION I]

General Description Of Conference

INVITATION LETTER

To My Parliamentarian Colleagues,

On behalf of the National Assembly, I cordially invite you to attend the Second East Asia and Pacific Parliamentarians' Conference on Environment and Development, scheduled for April 20-23, 1994 in Phuket, Thailand.

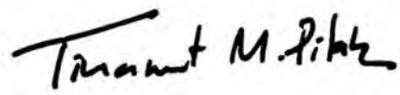
It is indeed a pleasure and an honour to host the Second East Asia and Pacific Conference of the Parliamentarians, who are conscious of our environment. I expect that there will be about 180 members of Parliaments and from related organizations attending the Conference to gather, and exchange ideas and from ideal linkages.

The Plenary sessions will cover the topics of Global Climate Change, the Changes and Development to Regional Biodiversity, Trade and Environment, and Impacts on Change and Development in the Region. There will also be special speeches and exhibitions reflecting our environment as a whole.

Socially, you will enjoy the beauty of our country, the Phuket tropical island with the warm clear water of the Andaman Sea, as well as the traditional warmth, hospitality and way of life of the Thai people.

I look forward to meeting as many colleagues as possible during the Conference, and hope you would enjoy contributing to the success of the gathering.

Yours sincerely,



Mr. Tinawat Marukpitak

CHAIRMAN OF THE HOUSE STANDING COMMITTEE ON ENVIRONMENT
THAILAND NATIONAL ASSEMBLY

Agenda Of The Conference

I. Substantive Topics

- Approaches to new cooperative partnerships
- Climate change issues in the region
- Biodiversity in the region
- Achieving mutually supportive sustainable environment and sustainable development policies
- Strengthening parliamentary institutions and improving legal frameworks

II. Country Progress Reports

III. Phuket Declaration

- Development of a statement of mutual concerns and action recommendations

IV. Conference Business

- Election of EAPPCED II Officers
- Discussion of future of EAPPCED
- Selection of 1995 host country

V. Earth Day Activity---April 22

- Special activity in recognition of Earth Day

SECOND EAST ASIA AND PACIFIC PARLIAMENTARIANS'
CONFERENCE ON ENVIRONMENT AND DEVELOPMENT (EAPPCED II)

Le Meridien (Phuket) Hotel, Phuket, Thailand

April 20-23, 1994

Timetable-Schedule

April 20
Wednesday

17:00-18:30 - Registration and Hotel check-in

18:30-21:30 - Welcoming Dinner

Hosts : Mr. Sudjit Nimitkul, Governor, Phuket; Mr. Vichit Na Ranong, Chairman, Phuket Chamber of commerce

April 21
Thursday

09:00-09:50 - Opening Ceremony

Welcome and Opening Address: The Honorable Prof. Marut Bunnag, Speaker of the House of Representatives, and President of the National Assembly, Thailand.

Opening Remarks:

- Mr. PARK Jun Byung, President of EAPPCED I, Member of the Korean Parliament, President of the Korean Parliamentary League on Children, Population, and Development.
- Mr. KOSUGI Takashi, President of GLOBE International (Global Legislators Organized for a Balanced Environment), and Member of the House of Representatives of the Japanese Diet.
- Dr. Richard A. Meganck, Director of Asia and Pacific Region, United Nations Environment Programme, speaking on behalf of UNEP Executive Director, Ms. Elizabeth Dowdeswell.
- Mr. Tinawat Marukpitak, Chairman of the House Standing Committee on Environment of the Thailand National Assembly, and Chairman of the conference organizing committee.

09:50-10:30 - Keynote Speech

"Partnerships for Change and Progress," by Mr. Anand Panyarachun, Chairman of the Business Council for Sustainable Development (Geneva), and Former Prime Minister of Thailand.

10:30-11:00 - Refreshment Break

11:00-12:00 - General Session

Introduction of Delegates Adoption of conference timetable/schedule.
Election of EAPPCED II Officers.
Appointment of Phuket Declaration Drafting Committee.

12:00-13:00 - LUNCH

Hosts: Mr. Tinawat Marukpitak, Chairman of the House Standing Committee on Environment, Thailand; General Chatchom Karnlong, Chairman of the Senate Standing Committee on Environment, Thailand.

13:00-13:30 - "REPORT FROM GLOBE INTERNATIONAL,"

by Mr. KOSUGI Takashi, President, and Member of the House of Representatives of the Japanese Diet.

13:30-15:30 - COUNTRY REPORTS---SESSION I

15:30-16.00 - REFRESHMENT BREAK

16:00-17:30 - COUNTRY REPORTS---SESSION II

19:00-21:00 - DINNER

Host : The Honorable Prof. Marut Bunnag, Speaker of the House of Representatives, and President of the National Assembly of Thailand.

Thai cultural performance.

April 22
Friday
EARTH DAY

08:30-10:00 - "REGIONAL CONTRIBUTION TO GLOBAL CLIMATE CHANGE: MANAGING THE BIOSPHERE,"

by Richard A. Meganck, Ph.D., Director, Regional Office for Asia and the Pacific, United Nations Environment Programme (Bangkok).

10:00-10:30 - REFRESHMENT BREAK

10:30-12:00 - "IMPACT OF CHANGE AND DEVELOPMENT ON REGIONAL BIOVIVERSITY"

by Mr. Jeffrey McNeely, Chief Biodiversity Officer, World Conservation Union (Geneva).

12:00-13:30 - LUNCH

Host: The Honorable Mr. Pisarn Moolasartsathorn, Minister of Science, Technology and Environment, and Member of the House of Representatives, Thailand.

13:30-15:00 - COUNTRY REPORTS---SESSION II

15:30-15:30 - REFRESHMENT BREAK

15:30-17:00 - COUNTRY REPORTS---SESSION IV

17:00-18:00 - Special "Earth Day" Activity

19:00-21:00 - Delegate Dinner

Host: Mr. Dharmnoon Prachuabmoh, Governor, Tourism Authority of Thailand.

April 23
Saturday

08:30-10:00 - "Trade and Environment."

by Mr. Scott Vaughan, Program Officer, Environment and Economics, United Nations Environment Programme (Geneva).

10:00-10:30 - Refreshment Break

10:30-12:00 - Blueprint of Sustainable Development for Legislators and Policymakers,"

by Dr. Alexandre Timoshenko, Chief, International Legal Instruments, United Nations Environment Programme (Nairobi).

12:00-13:30 - Lunch

Host : Mr. Vichit Na-ranong, President, Phuket Tourist Association.

13:30-15:30 - General Session

"Phuket Declaration" adoption. Planning for EAPPCED's future. Decision on EAPPCED III.

15:30-16:00 - Refreshment Break

16:00-17:00 - Closing Ceremony

"Closing Address, "by The Honorable Boonchu Rojanasatien, Deputy Prime Minister, and Member of the House of Representatives, Thailand.

18:00-21:00 - Farwell Dinner

Host : The Honorable Boonchu Rojanasatien, Deputy Prime Minister, and Member of the House of Representatives, Thailand.

Video presentation and cultural performance.

Masters of Ceremonies for Conference Sessions:

Dr. Mr. Art-ong Jumsai Na Ayudhaya, Member,
Thailand House of Representatives

Ms. Poonsook Lohajot, Member
Thailand House of Representatives

Dr. Mr. Sarit Santimataneedol, Member
Thailand House of Representatives

Dr. Mr. Chieanchuang Kalayanamitr
EAPPCED II Advisor

Dr. Ms. Montip Sriratana Tabukanon
Director, Environmental Research and Training Center
Environmental Quality Promotion Department, Thailand
EAPPCED II Advisor

EAPPCED II

[SECTION II]

Summary Outlines Of Speeches

Summary Outlines Of Speeches

The summary outlines in this section are designed to provide a guide to the major topics and ideas covered in each of the speeches delivered at the conference. They are not a substitute for the speeches. Readers are encouraged to review the full texts of all speeches which are contained in the next section, Section III.

"Opening Address and Welcome," by the Honorable Prof. Marut Bunnag, Speaker of the House and President of the National Assembly, Thailand.

He declares the conference open and stresses the need for parliamentarians and experts to share experiences and cooperate to safeguard the environment as we develop. He states that "in the past we had emphasized most of our effort to development of our social and economic situation without serious attention to our environment, and now we are paying dearly for our past ignorance."

"Welcoming Remarks," by Mr. Park Jun Byung, President of EAPPCED I, Member of Korean National Assembly.

He identifies as a key challenge the forthcoming "Green Round," following the conclusion of the Uruguay Round, and states that the Phuket Conference provides the right opportunity to discuss ways and means of addressing this challenge. He notes that new regional economic blocs are emerging. He makes several specific recommendations for a permanent EAPPCED organization.

"Welcoming Remarks," by Mr. Kosugi Takashi, President of GLOBE International (Global Legislators Organized for a Balanced Environment), Member of Japanese Diet.

He expresses his regret that he can only attend one day and that other members of the Japanese Diet are not able to attend due to the Diet unexpectedly being in the process of selecting a new Prime Minister. He expresses GLOBE's enthusiasm and support for EAPPCED.

"Welcoming Remarks," by Dr. Richard Meganck, Director of Asia and Pacific Region of The United Nations Environment Programme, on Behalf of UNEP Executive Director Ms. Elizabeth Dowdeswell.

He observes that "there has rarely been an issue which has so crystallized international consciousness as the total interdependence of environment and economic development" and that the Earth Summit and the resulting Agenda 21 outline a substantial and ambitious workplan. He discusses the importance of parliamentarians in this effort, to meet and discuss together, to be well informed, to be pro-active, to develop policy, and to strengthen cooperative relationships.

"Welcoming Remarks," by Mr. Tinawat Marukpitak, Member of Thailand National Assembly, Chairman of the House Standing Committee on Environment, and Chairman of the Conference Organizing Committee.

He expresses appreciation to all who assisted with conference preparations and all who are in attendance. He observes that we live in a time different from any other in human history. He notes that while development has brought benefits to people, it has also caused cumulative negative impacts. He identifies several key challenges to the region. He concludes that while he believes achieving balance between environment and development is technically possible, whether it will actually happen depends on political will and determination.

"Keynote Speech: Partnership for Change and Progress," by Mr. Anand Panyarachun, Chairman of Business Council for Sustainable Development (Geneva), and Former Prime Minister of Thailand.

He focuses on the fundamental importance of a cooperative partnership between business and government to achieve environmental quality. He states that while there has been increasing prosperity in the East Asia and Pacific Region, with business as the driving force behind that growth, "we can no longer afford to have economic progress at the expense of a safe, healthy environment." He states that while primary responsibility for needed changes will necessarily rest with the private sector, business cannot do it alone. There must, he says, be a partnership between business and government, working on a common agenda for common objectives.

He urges parliamentarians to "not flinch from setting high standards, tough ones", which should not be viewed by business as obstacles to be overcome or circumvented, but rather as "an opportunity which business should grasp."

He describes and discusses the concept of "eco-efficiency" which he states is central to this. The key to "eco-efficiency," he says, is to internalize environmental costs into the costs of production of goods and services, which will result in more efficient use of raw materials and energy, reduction or elimination of pollution, and other benefits.

He indentifies key elements of a cooperative program between business and government.

He discusses how developed countries should be sensitive to developing countries' abilities to act on environmental problems. He cautions that it takes time to reach a consensus among countries, but that this should not be used as an excuse to delay in developing and implementing domestic standards. He notes that the majority of environmental problems are local.

He discusses the issue of joint implementation of the Climate Change Treaty, as a specific example of what the private sector can do to strengthen collaboration between developed and developing countries.

"Report from GLOBE International," by Mr. Kosugi Takashi, President, and Member of the House of Representatives of The Japanese Diet.

He describes the structure and activities of GLOBE International (Global Legislators Organized for a Balanced Environment) and its constituent members. He gives as an example of the benefits of international organization, GLOBE's effective role in promoting the adoption of the Basel Convention on Transboundary Movements of Hazardous Waste.

He encourages EAPPCED to develop into a similarly continuously working organization, providing leadership for international cooperation within the region and for development of initiatives to guide rapid economic development onto a path of sustainable development.

He discusses the need for imaginative solutions to energy-related problems, and particularly encourages greater attention be given to solar energy. He encourages sharing of ideas and technologies for sustainable agriculture an gives and example.

He closes by discussing the region's diversity as its strength, the dependence of all on the global environment, our mutual responsibility for maintaining it, and that cooperation is the only way to solve the global problems we now face.

"Global Climate Change: Managing The Biosphere (Sponsor of or Impediment to Economic Development?" by Dr. Richard A. Meganck, Director of the Asia and Pacific Region, United Nations Environment Programme (Bangkok).

He states that even conservative estimates of potential effects of changing climate, resulting from increased atmospheric concentrations of several greenhouse gases, support the idea that the process of economic development could be fundamentally disrupted in both developed and developing countries. He states that ultimately, existing energy production and consumption patterns in industrialized countries must be modified radically to reduce carbon emissions. He notes that implementation of the Climate Change Convention will be a significant challenge for parliamentarians.

He discusses four principal approaches for responding to the threat of global climate warming. Of these, he says, reducing deforestation is the most direct and immediate means.

He predicts that the energy sector is likely to become the primary target for greenhouse gas control strategies, and that such industries might participate in "carbon offset" projects such as supporting forestry projects in developing countries.

He discusses the factors that comprise a quality "carbon offset" project. He outlines five alternative outcomes of large-scale carbon offset funding programs.

He reaches five conclusions about carbon offset projects.

He states that the UNEP recognizes the complexities of these issues and will continue to encourage and assist decision-makers to identify and implement no-regret response strategies.

"Major Issues in The Conservation of Biodiversity: Global Responses and Their Implications for the Asia-Pacific Region," by Jeffrey A. MC Neely, Chief Biodiversity Officer, The World Conservation Union (IUCN) (Geneva).

He describes contemporary measures of economic activity as an incomplete accounting system which ignores environmental costs, resource depletion costs, and resource replacement costs. Such practices, he says, lead to misleadingly low prices which are not sustainable and which encourage erosion of the basis of human welfare.

He identifies and discusses three basic intergenerational principles pertaining to biodiversity.

He discusses why he feels that trade is not likely to be a sustainable solution.

"Biodiversity", he says, is a needed, more comprehensive approach to the problem, since the "species by species" approach has been shown to be ineffective. He discusses the need for more financial investment in biodiversity, pointing out that there presently is a major imbalance with expenditures to reduce biodiversity greatly exceeding those to protect it. He identifies numerous political obstacles to conserving biodiversity.

He proposes a "Six-I" solution: investigation, information, incentives, integration, international cooperation, and indigenous communities.

He makes nine specific recommendations for action by parliamentarians.

He concludes by saying we need both biological diversity and cultural diversity, and we need diversity in our approaches to conservation. Future generations depend on what we do, he says.

"Trade, Environment and Sustainable Development: The Challenge to Parliamentarians," by Mr. Scott Vaughan, Coordinator, Environment and Trade, United Nations Environment Programme (Geneva). (Speaking His Personal Views, and Not Necessarily Those of UNEP).

He states that in many ways the objectives of trade liberalization coincide with those of environmental protection, and gives examples. He says an enormous amount of work is now taking place to reform the economic causes of environmental degradation.

Virtually everyone, he says, supports the concept of environmental quality and sustainability: the challenge is to translate the recuce I space concept into specific actions using new approaches.

He discusses why he feels trade represents one of the best economic engines to move us closer to the goal of sustainable development.

He discusses suspicions by some that the environmental debate is really about trade protectionism.

He lists the principal trade-environment recommendations of UNCED.

He identifies key issues and groupings of issues in the trade-environment arena.

He summarizes key environmental provisions of the Uruguay Final Act and reports that the World Trade Organization will establish a Committee on Trade and Environment to work on these highly-charged, highly complex issues. He urges parliamentarians to scrutinize their proposals carefully.

He concludes by saying that the greatest challenge is to expand the contours of the current debate, from finding an enduring peace between trade and environment, to striking a bolder alliance between trade and sustainable development.

"Blueprint of Sustainable Development for Legislators and Policymakers," by Dr. Alexandre Timoshenko, Chief, International Legel Instruments, United Nations Environment Programme (Nairobi).

The United Nations conference on Environment and Development (UNCED) in Rio de Janeiro in 1992 marked a new beginning, he says.

He discusses the important and unique roles, both nationally and internationally, that parliamentarians must play in implementing sustainable development.

The concept of sustainable development is still being elaborated, he states, and he discusses five key issues in implementing it: broad economic valuing of natural resources; incorporating environmental factors into decision-making; institutional collaboration and sectoral integration; coupling socio-economic factors and scientific information about ecosystems in addressing problem origins; and developing environmental indicators, assessments, and targets.

He discusses three ways in which environmental policies need to be modified.

He discusses major elements that distinguish international law on sustainable development.

He discusses factors necessary to build institutional capacity for sustainable development.

He indicates UNEP's willingness to assist and commends EAPPCED for its efforts.

"Farewell Address," by Honorable Mr. Boonchu Rojanasatien, Deputy Prime Minister of Thailand.

He states that environmental issues are at the top of his priority agenda, and compliments the conference for forging new directions.

He describes "development" as a "seductive word". It has, he says, many positive benefits, but carries with it the seeds of self-destruction if it is driven by greed and self-interest.

He encourages firm will and determination to correct the errors of the past and to set new long-term priorities. He says "we can no longer base our thinking on the view that development and environment must be in conflict. The two are interdependent and must be in harmony."

He urges taking this message home and continuing to cooperate in forging new approaches to education, organization, and cooperation.

He expresses appreciation to conference participants and organizers and declares the conference to be adjourned.

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[SECTION III]

EAPPCED

Full Texts Of Speeches

ADDRESS

by

H.E. PROFESSOR MARUT BUNNAG

President of the Thai National Assembly and
the Speaker of the House of Representatives

Excellency
Honourable Members of Parliaments
Distinguished guests
Ladies and Gentlemen

On behalf of the Thai National Assembly, let me, first of all, welcome all of you to Thailand and to this beautiful island, Phuket.

It is indeed a great pleasure and honour for the Thai National Assembly to host such an important conference as this one here in Phuket. There is no need to mention the significance of environment upon our livelihood. Of equal importance is the need for development. In the past we have emphasized our efforts on development of our social and economic situation without serious attention to our environment, and now we are paying dearly for our past ignorance. It was indeed farsighted of our fellow Parliamentarians from the Republic of Korea to host the first East Asia and Pacific Parliamentarians' Conference on Environment and Development last year. This provides a great opportunity for us parliamentarians to express, to share our experiences and try to continue with our development while safeguarding our environment so that we and the people of the next generation can enjoy modern lives with a sound environment.

Distinguished Participants: he next few days will be busy ones for you. I do hope that the environmentally sound atmosphere of Phuket will help you in your deliberations and by the end of this conference you will be able to come up with a satisfactory and beneficial conclusion.

On this auspicious occasion may I declare open the 2nd East Asia and Pacific Parliamentarians' Conference on Environment and Development.

Thank you.

OPENING REMARKS

By

HON. PARK, JUN BYUNG

Chief Delegate, Republic of Korea Delegation,
President of The Constituent Assembly of EAPPCED I.

Distinguished members of the EAPPCED, guests, ladies and gentlement:

The East Asia Pacific Parliamentarians' Conference on Environment and Development (EAPPCED) was created in June of last year with the purpose of jointly finding workable, common solutions for environmental problems facing the Asia-Pacific region. Through active contacts during a full year after the Rio Summit, in June of 1992 the Constituent Assembly of the EAPPCED was held in Seoul. Today we are here in this beautiful and untainted island of Phuket to hold our second meeting.

As you all know, since the conclusion of the multilateral negotiations of the Uruguay Round a new economic order is being formulated in the world and a new set of challenges known as the Green Round (GR) is heading toward us.

The collapse of communism has erased the confrontational mood of the cold war order, while regional economic blocs like the European Union and the North American Free Trade Zone are emerging throughout the world, giving birth to such problem-solving efforts like the UR. The world is indeed moving at an incredible rate and it is hard for us to keep up. Under these circumstances, the demands imposed by the Green Round are undoubtedly a great responsibility weighing upon most of the members of the EAPPCED. Accordingly, this meeting for which we are gathered here in Phuket is not only timely and appropriate but it also provides the right opportunity to discuss ways and means to cope with the challenges of the GR ahead of us. For providing such a wonderful opportunity, I would like to take a minute to thank the Hon. Marukpitak, Chairman of the Environmental Committee of the Thai parliament and those involved in this meeting for their endeavors and thorough attention.

Now, as president of the Constituent Assembly of the EAPPCED, I would like to take this opportunity to present to you some points of suggestion our delegation has in mind for the advancement of our organization. First of all, I would like to suggest that we change the name of our organization from the present EAPPCED to Asia Pacific Parliamentarians' Conference on Environment and Development or the APPCED. This recommendation, of course, will be brought up in due time at the General Assembly as an item of the agenda. However, before that happens, I would like to remind you that there are many other countries in the Asian Pacific region who share the same or similar problems and responsibilities in the wake of the GR, and I believe we should open ourselves up to them so that they can also participate in the protection of our region's common interests.

My second recommendation concerns the creation of a permanent secretariat that will be able to handle the work of our organization. For the EAPPCED to advance into a lasting international organization, it is essential to create a center that will be able to maintain open channels among and for the member countries. Presently, the EAPPCED Charter stipulates that "the host country shall provide the preparations and administrative services for the Conference," acting as the secretariat. However, the activities of an organization can be further advanced through the work of the secretariat as in the case of the APPU or the APMPD, regional organizations well familiar to us. Thus, taking this into consideration, I hope that during our Conference we will be able to discuss this matter in greater detail. Furthermore, in order to materialize this idea, I believe the financial obligations of the member countries should also be discussed specifically.

Finally, I certainly believe that a more concrete link between our organization and the UN affiliated organs, especially the CSD, should be established. I certainly feel that we should not only take part in the activities of the CSD but also direct our activities so that we can receive funding from the UN. Once again, I would like to thank Chairman Marukpitak for his efforts in making this Conference possible. My gratitude also goes to the organizers of the meeting for their energy and endeavors. I certainly look forward to many fruitful results during our hours of discussion.

Thank you very much.

WELCOMING REMARKS

MR. KOSUGI TAKASHI

President of GLOBE International
(Global Legislators Organized for a Balanced Environment)
And
Member of The House of Representatives of The Japanese Diet

Distinguished delegates, ladies and gentlemen: I am very happy to be able to join you here today. The political situation in Japan is extremely complicated at this moment. I actually thought I would not be able to attend at all.

The Japanese Prime Minister resigned recently and a new Prime Minister must be nominated by the Parliament as soon as possible. We have been waiting for the vote to take place. Therefore, I did not expect to be able to leave Japan for even one moment to come to Thailand. However, the nomination has now been scheduled to take place tomorrow. Therefore, I came here very rapidly, but I am sorry I will have to return to Japan tonight. I apologize for my visit being so short, but I hope your will understand the difficulty of my situation.

I also apologize that there are no other delegates from Japan. Many colleagues wanted to participate in EAPPCED but again with such a difficult situation it became impossible for everyone.

In particular, Ms. Akiko Domoto, President of GLOBE Japan, was expected to attend, but she had to cancel. However, she prepared a Country Report for Japan that will be distributed to all of you.

Ms. Domoto is also very enthusiastic about EAPPCED and asked me to convey to you her wholehearted support and encouragement.

Finally, I want to thank Mr. Tinawat for his exemplary leadership in hosting EAPPCED II.

Thank you very much.

OPENING REMARKS ON BEHALF OF THE EXECUTIVE DIRECTOR OF UNEP MS. ELIZABETH DOWDESWELL

by

RICHARD A. MEGANCK

DIRECTOR AND REGIONAL REPRESENTATIVE,
ASIA AND THE PACIFIC, UNITED NATIONS ENVIRONMENT PROGRAMME

Honorable Professor Marut Bunnag (Speaker of the House of Representatives and President of the National Assembly of Thailand)
Honorable Anand Panyarachun (Former Prime Minister of Thailand),
Honorable Park Jun Byung (President of EAPPCED I)
Honorable Sudjit Nimitkul (Governor of Phuket)
Honorable Khun Tinawat Marukpitak (Chairman of Thailand's House Standing Committee on Environment),
Dr. Chirapol (Faculty of Environment & Resource Studies, Mahidol University):
Distinguished Parliamentarians and Legislators, Ladies and Gentlemen.

On behalf of UNEP's Executive Director, Ms. Elizabeth Dowdeswell, I want to express our gratitude for being invited to be a co-sponsor of this event together with the Royal Thai Government and to acknowledge the importance of Parliamentarians meeting as decision makers to discuss themes of international importance.

Being here with you is a unique opportunity. Simply stated, our job as managers of the environment cannot be fully realized without you, the policy and law makers. Without your understanding of the issues and appropriate response in the policy arena, science and management remain largely theoretical disciplines; the job remains unfinished.

Our success however, while obviously inter-dependent, is directly tied to yet another group, the perceptions of our respective constituencies, you—the reactions of citizens of your nations, states and provinces; UNEP—the response of the family of nations as manifested through the United Nations General Assembly and UNEP Governing Council processes. These clientele are the ultimate judges of our effectiveness. And the world has spoken loud and clear on the importance and urgency of our work.

There has rarely been an issue which has so crystallized international consciousness as the total inter-dependence of environment and economic development. The Earth Summit and the resulting Agenda 21 outline a substantial and ambitious workplan for us for the coming years. And while it may be somewhat presumptuous of me to suggest so, I think you as legislators must take it upon yourselves to become familiar with the issues such that you can play lead roles with your colleagues and in your parliaments and legislatures.

The main themes we will examine here in the next two and a half days include climate change, biodiversity, trade, and environmental law. They were specifically selected as critical themes to implementing Agenda 21 and to complying with existing international mandates. As many of you realize, the Biological Diversity and Climate Change Conventions have now entered into full force and the GATT Treaty on International Trade and Tariffs was only approved last week.

It is the hope of the conference organizers that our deliberations will better prepare you to be proactive partners in catalyzing responses from your nations to these international Conventions as well as allowing you ample opportunity to exchange ideas on these topics. We in UNEP also have a few objectives which I would classify as enlightened self-interest. We hope to hear from you on your experiences in both stimulating discussions on these topics in your constituencies as well as in implementing the provisions of such treaties with the aim of improving the efficiency of the respective Convention Secretariats and technical assistance agencies involved.

In the end, like so many other discussions, the success or failure of this meeting depends on our willingness and ability to communicate effectively, to share experiences openly with the hope of gaining in the end. In that fashion you will hopefully return to your countries better prepared to play an effective role in the development process and we, in the international community, can bring a few ideas of how to be a more effective partner with governments to our governing bodies and institutions.

It is in this spirit we welcome you here to Phuket.

THANK YOU VERY MUCH.

WELCOMING SPEECH

By

MR. TINAWAT MARUKPITAK

CHAIRMAN OF THE HOUSE STANDING COMMITTEE ON ENVIRONMENT
THAILAND NATIONAL ASSEMBLY

Honourable House Speaker Marut Bunnag, Distinguished Delegates and Guests, it is a true honor and great pleasure for me to welcome each of you to this conference.

I would like to express my appreciation to speaker Marut Bunnag for entrusting me to serve as chairman of the organizing committee for this conference on behalf of the Thai National Assembly. During the last 10 months, we have enjoyed our responsibilities and have had many beneficial experiences.

At the outset of this conference, I would like to express my deep appreciation to several people and organizations for their special cooperation and assistance:

- Mr. Park Jun Byung, President of The First East Asia and Pacific Parliamentarians' Conference on Environment and Development, and Member of The Korea Parliament;
- Mr. Kosugi Takashi, President of GLOBE International, and Member of The Japan Diet;
- The United Nations Environment Programme;
- The Asia Foundation;
- The Governor of Phuket, Mr. Sudjit Nimitkul;
- Many Local Supporting Businesses and Organizations;
- The Staff of The Thai National Assembly;
- My wife, for her special support.

And again, I would like to express my warm greetings to all conference participants. It is a great pleasure to welcome many old friends to Thailand. It is also a special delight to welcome new friends and put faces with the names we have so far only seen on lists.

It is all of you who are the heart and soul of this conference. It is your participation with each other, both formally and informally, in exchanging information, perspectives, and ideas that makes this conference successful.

We have worked to make your stay comfortable, to facilitate dialog. Please let us know if there is anything additional we can do.

I believe this is a very important conference. The world is changing quickly, and we live in a new era a time that is dramatically different from any other in human history. Rapid changes in transportation, communications, economies, lifestyles, and technologies have brought many improvements to our lives.

Unfortunately, some negative impacts have also occurred. With the rapid pace of change, we have not always been aware soon enough of cumulative negative impacts of these changes. As a result, we have witnessed pollution of basic resources such as air and water; depletion of animal, plant and mineral resources, including ocean resources; and now we are experiencing the threat of global climate change. Accordingly, many people are experiencing serious problems: ruined health; loss of businesses and farms; poor lifestyles; threats to cultural values and resources; economic damage and inefficiencies; increased governmental expenditures; and other problems.

If we poison our water and air and destroy our food sources as we pursue needed economic development, we become out of balance. Instead of helping people, we hurt them.

If our generation depletes our natural resources, depletes their genetic diversity, or makes them unusable due to pollution or climate change, we are being disrespectful and irresponsible to our children and future generations. How will they be able to respect us if we let this happen?

Thus, it is an urgent matter for the peoples of our region to address many challenges:

- We must become more informed about all natural resources on our planet and their interdependent relationships.

- We must become more aware of how dependent we humans are on the natural world for sustaining life, for enjoying and having a good quality of life, for sustaining strong economies over the long term, and for spiritual inspiration.

- We must discontinue our past practice of addressing issues and resources in mental and geographic isolation from each other. Instead, we must seek integrated approaches that include full consideration of accurate scientific information and many well-informed perspectives. We need solutions that are fair and just to present and future generations.

- We must be stewards, or guardians, of our natural resources to respect their intrinsic values as well as their values for human life.

- We must make pollution prevention a high priority. In this way we can avoid not only pollution's direct negative consequences, but also to avoid the great expense of clean-up and restoration.

- We must cooperate with each other as parliamentarians in developing new strategies for achieving a truly sustainable future. We need to re-examine our values and the processes by which we make critical policy decisions. We need to create new approaches suitable for our new era.

Are we in The East Asia and Pacific region capable of achieving a sustainable future, with environmental quality and economic prosperity? For me, the answer is clearly, Yes. We are capable of achieving this.

The more difficult question is: will we in fact do it? The answer here could be either "yes" or "no". The reality is that the answer is up to us. It all depends on our political will and determination.

We parliamentarians hold the future in our hands. It is we who develop and vote on policies and the financial resources to implement them.

The problems and the solutions are increasingly complex. Through this conference, its successors in the future, and in other forums, we must maintain open and informed dialog with each other. Together we will build a positive and sustainable future, as our constituencies expect of us.

THANK YOU, AND WELCOME.

PARTNERSHIP FOR CHANGE AND PROGRESS

ANAND PANYARACHUN

Chairman, Business Council for Sustainable Development (Geneva)
Chairman, Council of Trustees, Thailand Environment Institute

Presented at

The East Asia and Pacific Parliamentarians'
Conference on
Environment and Development (EAPPCED II)

Thursday, 21st April 1994
Phuket, Thailand

Partnership for Change and Progress

During the next three days, this conference will discuss in some detail a number of issues of great importance to this region, and beyond.

I believe I can best serve you this morning by mainly focusing on one area: partnership between government and the private sector-which, in my judgement, is of fundamental importance to the way we approach those issues, and others.

Government of course includes you as Parliamentarians, as well as Ministers and officials. And I single out private sector business as a partner because it has a critical role to play in achieving a successful marriage between development and the environment.

Business after all is the driving force behind economic growth and the increasing prosperity that much of East Asia and the Pacific area is enjoying.

Yet, as we all know, we have been paying a price for this economic success.

For example, you may have seen the recent World Bank report on the state of the environment in Asia. It is a cause for dis-satisfaction.

- The levels of sulphur dioxide, nitrogen dioxide and total suspended particulates in the air–three especially dangerous industrial pollutants–have increased disturbingly: by a factor of five in Indonesia, eight in the Philippines and ten here in Thailand.

- Five of the seven cities in the world with the worst air pollution are here in Asia.

- At current rates, Asian countries will be producing more sulphur dioxide than Europe and America together by the year 2005.

I am not attaching blame. But I feel it incumbent on me to apportion responsibility for addressing this urgent situation–because in the developing countries with emerging economies we can afford no longer to have economic progress at the expense of a safe, healthy environment.

As legislators, you most certainly have a contribution–a major contribution–to make.

But clearly the primary responsibility will–and must–rest with business: which faces the challenge of reducing the levels of pollution dramatically, but without harming our industrial and economic performance.

Business, however, cannot do it alone.

Partnership must be the cornerstone for achieving our common objectives.

Partnership between you in government and we in business to work out an agreed agenda, and work that agenda through developing common policies and deciding upon our respective roles for implementing the actions
we have resolved to take.

It is happening, for example, in the ASEAN region, through the establishment of joint public-private consultative committees, chaired by the Prime Minister of the country, and attended by leading CEOs in that country.

This is a promising beginning. But we need to accelerate matters, and bring business more closely into the policymaking process.

Your particular contribution—indeed the responsibility that has been entrusted to you—is to set the standards for environmental performance. And I say very firmly that you should not flinch from setting high standards, tough ones.

Tough, demanding standards are important to improving the wellbeing of the communities you serve—and they will be the stimulus for improving business performance. They are not an obstacle for business to cross or worse, to circumvent—they are an opportunity which business should grasp.

Many of you I trust have heard of the notion of Eco-efficiency.

It is a concept developed by the Business Council For Sustainable Development (BCSD) in its report, "Changing Course", to Rio. The BCSD is a group of business leaders from around the world, and I am privileged to be its current Chairman.

An Eco-efficient company is one that adds value to its products and services, while using raw materials and energy more efficiently and aiming towards—and ultimately succeeding in—eliminating pollution from its processes and products.

This approach goes beyond the traditional end-of-pipe mentality, to one of striving to prevent pollution in the first place. Rather than wait until the part is broken before fixing it, the objective from the outset is to prevent breakages from occuring.

Eco-efficiency is the proper corporate response to the global goal of sustainable development. It is also the right response to the particular situation we in this region face at this stage in our development—and it should become the benchmark by which business sets out to measure itself, and be measured by, in the future.

There is much that we in business can do ourselves—and should be doing—to move our processes and products further and faster towards that goal.

But as I stated, no-one at this conference should assume that it is up to business to do it alone. On the contrary, government—including Parliamentarians like yourselves—must support and work with business to promote and step up the process of change.

I said that high environmental standards are the key. They are. Tougher standards will drive companies faster down the road towards Eco-efficiency by requiring them to look for new processes, technologies and even new products—in short, to find new and improved ways of doing things.

But the manner in which government lays down those standards will be crucial to their effect, and to their effectiveness.

Most businesses—wherever they are in the world, and this region is certainly no exception—operate within both a set of laws and an economic framework laid down by government.

You can impose new laws, and the means to enforce them. They will serve their purpose—to a point.

But by themselves, new regulations will not be enough to reap the economic and environmental dividends that are possible.

We need to reform business behaviour so that it reflects environmental truths. But we must also see that society's behaviour reflects those truths too.

For example, if we want business to include environmental costs in its balance sheet–and we should want this–society must accept the consequences. There will be a price to pay–literally–as environmental costs are allocated to processes and products, and therefore we must make changes to our economic system to take account of that reality.

We are in danger of overlooking the fact that at Rio, the heads of state and government signed off on an economic, not an environmental, agenda. The changes they endorsed were economic–not environmental–in scope.

The emphasis in the Agenda 21 program–indeed in every major document approved in Rio–on the role of economic instruments (taxes, charges, permits and so on), and their importance to internalizing costs illustrates the point.

Economic instruments are–as their name says–an economic measure, not an environmental weapon. The benefits will be both environmental and economic: moving us away from the present wasteful use, overconsumption, and depletion of resources to a system that values. encourages and rewards conservation, pollution avoidance and efficient resource use.

That will be to the immense benefit of every citizen–and it will also be good for business.

Traditional command-and-control regulations will continue to play a role. But increasingly–as Rio tacitly acknowledged–economic instruments will prove a more effective means of improving corporate environmental performance, and the environment generally.

I urge you to take this into account when you come to consider new, higher environmental standards.

I also urge you to work with business–and other groups with a direct stake in these issues–to implement a common agenda; an agenda which should include:

- SIMPLICITY

We should be aiming to simplify regulations, rather than add new complexities to the regulatory regime.

- REGULATORY REFORM

Government should accompany any measures to introduce economic instruments with reforms of existing regulations to make the market work better.

- FISCAL REFORM

Existing fiscal systems should reviewed with the aim of shifting the tax burden from income, value added and investment towards resource use and pollution.

- SUBSIDIES

Removing perverse subsidies should be a priority.

- TIMETABLE

We need to agree to and lay out a clear timetable for the gradual internalization of costs, so that business has a stable platform for investment.

Such an agenda will enable us to meet our common objective, which is to make the markets work for sustainable development. The markets have treated us well from an economic standpoint: now we must ensure they work as successfully for our environment.

Plenary Session III on Saturday will deal with trade and environment.
I think it appropriate for me to address this topic.

Open, competitive global markets are essential on both economic and environmental grounds, and the successful completion of the Uruguay Round is clearly a milestone towards a further opening of markets, and to increasing competition.

However, as you know, we are now moving into a next phase, with GATT and its successor, the World Trade Organization, due to embark on a two-year work program designed to make trade and environment policies mutually supportive. That program will embrace some difficult areas, and I fear that some of the tensions apparent during the Uruguay Round negotiations are likely to resurface.

The issue of competitiveness will, I believe, assume an even higher profile on the agenda, especially as countries move to internalize environmental costs in different ways, and at different speeds.

The particular risk is that governments will perceive a loss of competitive advantage, and will respond by resorting to trade measures against countries with, in their view, lower environmental standards. We are all familiar with the argument that weaker environmental regulations mainly in developing countries give producers there an unfair advantage.

It is a fact that generally speaking, developed countries are internalizing costs faster—and according to the OECD, the gap between them and developing countries is growing.

I repeat my view that we in the developing countries and emerging economies should accelerate our progress towards setting higher environmental standards, preferable through the wider introduction and application of economic measures to internalize costs.

At the same time, however, developed countries must be realistic about how rapidly we can act. And certainly any attempt, through trade measures, to coerce us into action faster will prove counter-productive.

The issues of trade and environment, and competitiveness are also related directly to the harmonization of environmental standards.

Certainly, this is needed in some key areas—climate change, ozone layer depletion, endangered species, biodiversity, acid rain and cross border pollution—and there are in fact some 15 international environmental agreements in place.

But let us remember two things:

1. It takes time to reach an international consensus on issues. And if governments expect international standards to be agreed, upon they may use this as an excuse to delay implementing their own domestic policies meanwhile. I sincerely hope you will avoid that trap.

2. International harmonization may be a desirable goal. But we must keep in mind the national, sometimes regional, differences in ecological carrying capacities, climate conditions, natural resource endowments and environmental priorities—which are all sources of a country's or region's competitive advantage, and which we will be loathe to relinquish without proper safeguards.

Indeed, competitiveness is an amalgam of many factors—resources, labor costs, cultural preferences, government regulation, technological development, effective educational systems and so on—not simply of differing environmental standards.

Harmonization is desirable as a long-term objective. But the majority of environmental problems are local, and in my view are best treated at the level. And we should not be sidetracked from the urgency of our task here, which is to raise our environmental standards, throughout East Asia and the Pacific.

I would also like to mention the issue of Joint Implementation, as a specific example of what the private sector can do to strengthen collaboration between developed and developing countries.

As you know, the Climate Change Treaty, which came into force on March 21 for those countries which ratified the Rio Convention, includes the principle of Joint Implementation.

This allows countries to partially meet their commitments under the treaty to reduce their greenhouse gas commitments by investing in emission reduction in other countries. Most of the world's greenhouse gas emissions come from developed countries, and the expectation is that Joint Implementation will mainly involve agreements with developing countries. For example, a North American coal-burning electric utility could earn credits by lowering CO2 buildup through increasing the efficiency of coal-based power production in China.

There are a number of concerns, especially among developing countries, about Joint Implementation. One is the fear that it may absolve the North of changing its behavior while adding burdens on developing countries. Another is it may cause traditional sources of foreign aid to dry up. Joint Implementation has even been called a form of "eco-colonialism".

I understand those concerns–but personally, I do not share them.

In my view, Joint Implementation is an important example of how the private sector can play a critical role in providing significant, tangible sustainable development benefits–important new resources to developing countries–through Eco-efficiency and Technology Cooperation.

And the role of the private sector is particularly critical because it is clear that available government financial resources to reduce greenhouse gas emissions will be inadequate, and private sector capital will be needed.

I am pleased to say that the BCSD has a task force examining this whole issue. One of its tasks is to provide the business perspective to the debate, and to raise awareness of Joint Implementation and its benefits.

In conclusion, let me say that in East Asia and the Pacific, we face a considerable challenge.

We need to redress the damage already done, to make our cities liveable, to make the lives of millions of our peoples bearable. And, as we develop our economies further, to sustain our competitive presence in the world, we have to avoid compounding the waste and pollution that already besets us.

But with that challenge comes the historic to show to the rest of the world that it can be done: that we can achieve significant rewards–for the environment, and for today's and tomorrow's generations of our peoples.

I have no doubt that together we can prove ourselves to be more than equal to the moment.

STATEMENT

by

TAKASHI KOSUGI

President, GLOBE International
Member, House of Representatives, Japanese Diet

Second East Asia & Pacific Parliamentarians' Conference on Environment and Development (EAPPCED II)

Phuket, Thailand,
April 20-23, 1994

Report From GLOBE International

Ladies and Gentlemen,

Introduction about GLOBE

I would like to introduce you to GLOBE, the Global Legislators Organization for a Balanced Environment, of which I serve as President.

GLOBE started in 1989 and now consists of GLOBE Japan, GLOBE USA, GLOBE European Union, and GLOBE Russia. It is a small and informal organization built on personal relationships.

At our meetings we often have heated and detailed discussions but we usually come to agreement in the end. Members have a deeply felt concern for the environment and have long experience of working in their respective parliaments on environmental legislation.

GLOBE is a voluntary organization. We meet twice a year for general assemblies, and the responsibility to host those meetings rotates between the different GLOBE affiliates.

Early in advance we decide on three main issues to focus on for each meeting. At our last meeting in Tokyo, for example, the three main issues were climate change, biodiversity and international institutions.

At our most recent meeting in Washington at the end of February the three main issues were trade and the environment, the export of hazardous waste, and international financial institutions. To this we also added the population issue because of the up-coming world conference on population and development to be held in Cairo in September this year.

On each of these issues, GLOBE has formed small working groups of knowledgable legislators from each of the regional GLOBE affiliates. The groups work between meetings preparing in detail proposals for concrete action that GLOBE can take. They also follow-up on the policies GLOBE has adopted so that GLOBE can take. They also follow-up on the policies GLOBE has adopted so that legislative work and other policy work is constantly proceeding. The groups can, for example, draft letters to be sent by GLOBE International to key decision makers pointing out specific concerns that GLOBE believes need be taken into consideration.

In fact, for GLOBE, the activities between meetings are just as important as the meetings themselves. I hope that EAPPCED also will establish a permanent secretariat and become a continuously working organization.

Something else I have learned form the experience of GLOBE is that much effort needs to be put into the substance of the meetings. It is important for each individual participant to take part in the shaping of policies. In Japan, before every GLOBE meeting, we always hold a number of study meetings to keep up to date with new developments in the international environmental debate. International conventions, for example, are constantly changing and new promising technologies are developed.

Recent GLOBE Action

One of the main topics at the Washington meeting was the problem of hazardous waste exports from industrialized countries to developing countries.

With the second meeting of the parties to the Basel Convention on the Transboundary Movements of Hazardous Waste about to take place shortly after the GLOBE meeting, it was a hot topic.

Just before the GLOBE meeting the Clinton Administrative decided its new policy. Actually the first official announcement of the new policy was made by Vice-President Al Gore when speaking before GLOBE. Gore has close personal ties with GLOBE members because he served as President of GLOBE International until he was elected Vice-President of the United States.

After lengthy discussions GLOBE members also agreed to promote such a ban and put pressure on the parties the Basel Convention.

GLOBE EU immediately took action by sending a representative of GLOBE to the conference of parties in Geneva and issuing a press release announcing the GLOBE position.

On March 25, the parties to the Basel Convention agreed on a ban on all exports of hazardous waste from OECD countries to developing countries. Even waste exports for recycling will be phased out by the end of 1997.

Members of GLOBE often travel to international negotiating conferences, making our voice heard as an independent organization. In the preparatory process of the Earth Summit for example I myself travelled to Geneva to speak about the climate convention. I criticized the United States for not taking a more positive role and urged all the parties to include specific targets for carbon dioxide emissions.

In GLOBE we do not think so much about nationalities, we think about the global environment and we criticize or praise those who deserve it, regardless of nationality.

The role of EAPPCED

The Asian and Pacific region is expected to develop economically more than any other region in the world over the coming years. Such rapid development is, and will be, the cause of much pollution on a local level but it also has a great impact on the global environment. What is happening in this region is therefore of concern to the whole world. Such a large impact brings with it large responsibilities.

The countries of this region must cooperate in laying a good groundwork of environmental legislation and cooperate at an early stage of drafting national legislation. GLOBE encourages such efforts and EAPPCED is an excellent forum for such cooperation. I commend Mr. Park Jun Byung from the Korean Parliament who initiated the first EAPPCED in Seoul last year and I am very grateful to Mr. Tinawat who has picked up the challenge and carried the idea on to this second meeting.

From the experience of GLOBE, I know that to host a meeting always raised the consciousness in that country and participants become more active. GLOBE Japan hosted a GLOBE conference in Tokyo for the first time in 1991. It was an important experience. Now, our youngest GLOBE affiliate, GLOBE Russia, is just about to host a GLOBE conference for the first time in Moscow this August. It is a difficult challenge for them in an unstable political situation, but all members of GLOBE International are committed to helping them.

In the same way I hope EAPPCED will take place every year in a different country, with a new parliament taking on the challenge each time.

Trade and Environment

Recently the environment is being discussed in many fora. Trade and environment for example has become a major issue that we need to pay more attention to. Through my GLOBE colleagues in Europe I have been able to follow very closely the debate on the environment in GATT, and the process towards the decision to establish an environment committee in the recently established World Trade Organization (WTO).

With expanding trade in Asia, we must address this issue in a constructive and creative way. I am therefore very happy that the issue of trade and environment is on the agenda of this meeting. We must deal with the problem of a decreasing resource base and the depletion of non-renewable resources. As economic policies become increasingly integrated through ASEAN and other international structures, initiatives are needed to deal with pollution and environmental problems in an equally integrated way. I hope EAPPCED will spearhead such initiatives and guide this rapid economic development onto a path of sustainable development.

Energy

Another problem of enormous concern to this region is energy. According to the Word Bank, energy demand in Asia takes only 12 years to double at the present rate of development. Electricity demand is growing two to three times faster than the GDP (gross domestic product) in most of the rapidly industrializing countries of East Asia. Imaginative solutions to this must be found.

Personally, I believe that solar energy will be one solution. Renewable and clean, it is the energy source for the future and there is a lot of potential for its use in Asia. The technology has already come to a point when it can be put to practical use.

Participating in the first EAPPCED in Seoul last year my impression was that problems related to energy were of very urgent and keen concern to all participants. I myself spoke enthusiastically about solar power and it started quite a debate. Some encouraged me, but some were skeptical. Well, now I would like to report on some progress on this matter.

In Japan's national budget for 1994 I have managed to secure a completely new item to promote the use of solar energy. The Japanese Government has approved the introduction of subsidies for the installation of solar systems. Any individual will be able to apply for a subsidy of 50% of the installation cost. The total budget is 2.1 billion yen, approximately 19 million dollars, and will be sufficient to install 700 solar systems

This is a small but important step in the right direction

There have already been many inquiries about these subsidies. I will myself install a complete solar energy system on my house very soon. If you come to Japan, please visit me and I will be happy to demonstrate the system to you.

I also believe in introducing electric vehicles to reduce pollution. I like jogging but in a large city a jogger soon finds the polluted air very disturbing. If we used more electric vehicles, the air in cities would be much cleaner and healthier. Actually, just a month ago, I acquired an electric scooter which I now use to commute with to my office at the parliament. It has an ordinary electric plug that I can plug into a regular wall outlet for recharging. It is very easy. In the future I look forward to plugging my electric scooter into my solar-powered house. Then I will be really self-sufficient. Next I will try to find a convenient electric car and so on..

This is not just a dream, it is becoming a reality in my own home.

It is also one example of how we in GLOBE try to link local concrete action to large global and political issues.

Sustainable Agriculture-An Example From Japan

In GLOBE we also try to bring attention to good ideas and technologies that have been developed locally but could be applied in other countries and be of benefit to many people.

To illustrate my point I would like to say a few words about an environmentally friendly technology developed in Japan that could be useful for other countries in this region.

In the tropical and subtropical areas of Asia, rapid population growth coupled with poverty and food shortage is a large problem. In particular it is also related to a deterioration of the resource base. As new farmland areas are cleared to secure an increasing food supply forests are cut. But forests are also important for holding water resources and function as "green dams".

When the forests are cut the soil is eventually washed away and the land suffers from erosion.

Furthermore, as a result of the Green Revolution, so-called modern farming methods were introduced in developing countries entailing an increase in pesticide and chemical fertilizer use. Since the beginning of the 90ties the harvests have actually been decreasing or remaining on a constant level.

One of those who promoted the Green Revolution was the American professor Lester Brown. He has clearly reported the ironic result that the increase of arable land has actually resulted in a decline of agricultural production.

This is a reaction to having temporarily forced an increase of the soil's productivity by using chemical fertilizers and pesticides.

I believe that a more long-term view must be taken when increasing the area of farmland and the size of the harvest. This is extremely difficult.

However, I would like to tell you about one concrete example of how the harvest can be increased without placing a burden on the environment.

On the subtropical Okinawan Islands in the South of Japan, a harmful insect, the melon fly, has for 70 years caused damage to fruit products. The fly did not originally exist on the islands but came along with products from other tropical and subtropical areas as trade with such areas increased. The fly lays its eggs in the fruit and the products of Okinawa could therefore not be exported to areas where the fly did not exist.

The concept of the method developed in Okinawa is to exterminate the flies by an environment-friendly method. A facility was built for raising large numbers of sterilized flies that were then released on the island. As this procedure was repeated continually over a long time period, the numbers of files steadily decreased and were eventually exterminated throughout the island.

It is difficult to express the extent of this kind of damage by insects in statistical terms, but in Okinawa the increase in produce since the melon fly was extinguished has been measured. Okinawa Prefecture has announced that the direct and indirect gain corresponds to an estimated 10 billion yen (or about 98 million dollars) per year.

Another example is the Philippines where it is estimated that the annual loss due to damage by the melon fly is 2.15 million dollars. Even in Thailand, I hear that this technology is being used, with assistance from Japan, to tackle the same kind of problem in low-lying areas surrounded by mountains.

It still remains to be studied whether the files constitute any key role in the food chain or in pollination which could be disturbed by the loss of the fly, But at present, no such negative effects on the ecology have been detected.

The Japanese Government and Okinawa Prefecture would like this technology to be put to more extensive use in solving problems in Asia. If you are interested in discussing this with your respective governments, I would also be happy help you in coordinating cooperation with Japan.

Conclusion

The population of Asia and the Pacific region is rich in diversity. We should make this diversity our strength. We have one of the largest nations on earth, China, and we have Anglo-saxon culture in Australia and New Zealand. We have areas where indigenous people live close to nature much like they have done for thousands of years and we have ultramodern cosmopolitan centers like Tokyo and Singapore.

Although some countries are economically stronger than others and some countries are very poor, every place has its own unique culture and potential. We all depend on the same global environment and must therefore share the responsibility to maintain it. Cooperation is the only way to solve the global problems we face now.

As for Japan, I think my country has a large role to play in this area, but I am also aware that we need to be sensitive to history and understand that a large role played by Japan is maybe not always appreciated. On the other hand, I appeal to those present here to think that just as your countries are changing, so is Japan.

Just like in GLOBE, I think we should cooperate on an individual basis, concentrating more on the problems that bring us together because we need to solve them together, and less on the differences in our national, political and cultural backgrounds.

I hope that EAPPCED will develop and grow in this spirit.

GLOBAL CLIMATE CHANGE:

MANAGING THE BIOSPHERE

(Sponsor of or impediment to economic development?)

RICHARD A. MEGANCK

Director and Regional Representative
Asia and the Pacific
United Nations Environment Programme

GLOBAL CLIMATE CHANGE : MANAGING THE BIOSPHERE

INTRODUCTION:

I venture to say that there is not an individual in this room that has not heard about climate change and its potential dire consequences to nearly every productive sector. At the same time, however, you have all likely queried its importance to your constituencies and therefore to you as a parliamentarian. To state it mildly, the theories surrounding the climate change debate cover a very wide spectrum. Try convincing the average citizen in the northern hemisphere, who just suffered through the worst winter in a quarter-century, that global warming is an issue that ought to concern him. Try convincing the average businessman in the tropics that climate change mitigation measures being promoted by development banks and others isn't largely a ploy to generate business for the "north". There is certainly no lack of confusion and strongly held opinions on this issue.

However, that debate notwithstanding, the international community has also weighed-in on this issue by bringing into force the Climate Change Convention. Parliamentarians and Legislators are now challenged to comply with the provisions of the Convention by implementing policies and laws which will facilitate the work of the Secretariat and result in technical assistance, loans and other investments from private and public sectors.

A FEW BASIC CONCEPTS:

Even conservative estimates of potential effects of changing climate, resulting from increased atmospheric concentrations of several greenhouse gases, support the idea that the process of economic development could be fundamentally disrupted in both developed and developing countries. Ultimately, existing energy production and consumption patterns in industrialized countries must be modified radically if CO_2 emissions are to be significantly reduced. For developing nations, projected increases in energy consumption as well as high deforestation rates need to be reexamined if global CO_2 emissions are to be capped at or below current levels (IPCC 1990).

Over the long term, there is little question that the world economy will have to move away from its reliance on fossil fuels. Even with aggressive policies, however, this transition will take time, perhaps as much as 100 years. However, during this transition, managing biotic carbon levels through forest, range and soil management offers perhaps the most cost-effective means to slow the accumulation of CO_2 in the atmosphere.

Scientists and policy makers have been evaluating the use of forestry as a prime means by which to respond to the threat of global warming since the late 1970s (Dyson 1977, Marland 1988, Trexler 1991, Sampson & Hair 1992). The Noordwijk Declaration, December 1988, by establishing global targets for reversing the decline in global forest cover as a means of mitigating global warming, formalized the linkage between forestry and global warming at the political level (Ministerial conference 1988). Since then, evaluation of forestry as a mitigation option has proceeded at all levels (NAS 1991, IPCC 1991).

The increased attention being given to forestry activities as a means to reduce net CO_2 emissions will likely result in availability of funding for projects designed to offset carbon released in the energy sector. These offset projects will be located in regions where carbon can be cost-effectively maintained or prevented from being emitted in the first place, including in many developing nations. This includes countries where existing deforestation rates could be reduced, as well as those presenting reforestation and other biomass accumulation opportunities.

This leads to an important consideration: how will CO_2 mitigation projects affect the economic development of these countries? This is an important question for you, particularly considering the sensitivity of north-south relations, the eagerness of the business sector in both developed and developing countries to invest, the relative ease of circumventing existing laws, and the conditionality of loans requiring alterations in national development strategies, among other issues. At first glance, it is tempting to conclude that the influx of billions of dollars into the natural resource management sectors of developing nations should benefit their long-term economic development. However, the lack of experience with such projects suggests that this conclusion should be examined more closely.

Carbon Offset Approaches: (Overhead Transparency)

Climate change mitigation can be accomplished using one or a combination of the following forestry options:

- Slowing the loss or degradation of existing forests, thus preserving current carbon reservoirs (forest protection management and agricultural advances);
- increasing forest and tree cover on existing lands, thus enlarging living terrestrial carbon reservoirs (natural regeneration, reforestation, agroforestry);
- increasing the carbon stored in nonliving carbon reservoirs such as soils;
- displacing fossil fuel consumption with sustainable biomass energy sources, thus reducing net energy-related carbon emissions.

Although all of these options are conceptually valid, each can have distinct advantages and disadvantages under different circumstances (Trexler & Haughen 1993). Each can also have different implications for economic development goals and objectives. Because of high deforestation rates, relatively high rates of land availability, low implementation costs, and high rates of potential biomass accumulation, it is often suggested that these options can be pursued effectively in the tropics (Grainger 1988, Houghton et al. 1991, Trexler & Haugen 1993). Slowing CO_2 emissions related to land-use change through deforestation, for example, is, according to most scientists, the most direct and immediate means by which to influence global warming.

In principle, forestry efforts and other land-use practices in developing nations that would help mitigate global climate change can assist countries in preserving or managing their existing forest resources: restoring productive uses to degraded or abandoned lands; developing local and national supplies of wood, energy, and other economic products; and meeting the needs of poor or rural populations for a sustainable resource base and for economic growth.

Funding Carbon Offsets:

Globally, climate change mitigation efforts are portrayed as a potential source of massive new funding programs for forestry and land-use management. The source of this funding will either be governmental (bilateral or multilateral) or non-governmental (private for-profit or not-for-profit firms). In today's budget constrained world, however, governmental funding may result more from a reallocation of spending rather than a significant net funding increase. Funding previously intended for education projects or road construction, for example, might be reassigned to a climate change mitigation budget line, in order to meet matching fund requirements or provide seed-money to attract large donors.

Large energy-producing or energy-consuming corporations in the industrialized countries are also actively interested in forestry as a climate change mitigation measure both in reaction to the evolution of scientific thought regarding climate change and the growing consideration of mitigation objectives by legislative bodies such as those you represent. The energy sector is responsible for roughly 70 to 80& of human-generated CO_2 emissions (Houghton et al. 1991). Without changes in current trends, the Intergovernmental Panel on Climate Change (IPCC) estimates that energy-related carbon emissions in industrialized countries alone will increase by almost a billion metric tons within 10 years (IPCC 1990). Most policy-makers, therefore, perceive energy-related companies, and utilities in particular, as primary targets for greenhouse gas emission control strategies. Thus, large CO_2 emitting industries such as electric utilities have a significant stake in finding viable cost-saving ways to meet emissions restrictions called for in the Climate Change Convention and avoid emissions-based fees. Forestry measures and forestry projects can offer these emitters an alternative that is potentially cheaper than either paying a carbon tax or directly reducing their emissions.

In 1988, the AES Corporation, an independent power producer in the United States, became the first entity to initiate a voluntary CO_2 offset policy based on tropical forestry. AES committed US$2 million to an agroforestry and forest conservation project in Guatemala to help offset the emissions associated with a new coal-fired power plant to be built in Connecticut in the USA (Trexler et al. 1989).

If biotic mitigation projects were to grow to the point of offsetting a sizeable percentage of global carbon emissions, say 15% for example, $5 to 10 billion U.S. dollars would have to be spent annually on forestry projects, dramatically increasing the total resources available for forestry and land-use management efforts in developing countries.

Global Warming Mitigation vs Economic Development Goals in Project Design:

Several variables influence how and whether a proposed carbon offset project serves the objectives of reducing the probability or magnitude of climate change. Another set of variables influences a given project's role in encouraging economic development. Under a mandated system of CO_2 emissions reductions or offsets, CO_2 emitters likely will be held responsible in some way for the success of projects they choose to pursue. Criteria likely to become increasingly important to the evaluation, selection, and regulatory accreditation of projects include:

- project credibility to actually result in incremental carbon storage for a given period;
- long-term project reliability, expertise of project proponents, and relevant physical, social, economic, and political variables in the country of implementation;
- verifiability of the land-use intervention or management change claimed over time;
- measurability of the carbon offset credit claimed;
- cost-effectiveness as compared to alternative mechanisms for controlling greenhouse gas emissions.

Designing Successful Economic Development Projects:

Ideally such projects will be located in moist regions with good soils, low population densities, established property rights, and stable social and political systems. In reality, projects will be adapted to actual opportunities varying in one or more respects form the ideal. Generally speaking, however, reforestation projects are less likely to be successful when located in arid regions, areas with high population densities and land pressures, areas of uncertain land tenure, or areas with unstable social and political systems.

Furthermore, development projects are often process–rather than outcome–oriented. The process of encouraging community involvement and alleviation of suffering can be as important to project success as quantifiable deliverables. There may be little emphasis on short-term deliverables because the social attributes being promoted–education, health, income–are long-term objectives. Indeed, many NGOs involved in economic development work are questioning whether to become involved with these types of projects precisely because they fear losing the flexibility to pursue their social and economic development objectives.

One might logically ask, to what degree can and should climate change mitigation through biotic carbon offsets be expected to advance economic development objectives in light of the potential regulatory need to provide for a verifiable and cost-effective carbon offset? This question becomes increasingly significant as the likelihood increases that large-scale funding for global warming mitigation will become available. Before jumping to a conclusion, I ask you to examine the issue thoroughly.

Projects currently being considered for global climate change mitigation funding were, in most cases, originally proposed as sustainable agriculture, economic development, conservation of biological diversity, or even anti-desertification projects. They have been "recast" as carbon offset projects in an attempt to take advantage of funding now becoming available for mitigation of climate change. As a consequence, many of these projects utilize approaches that are different than might have been chosen to maximize the magnitude and reliability of long-term carbon benefits. And it is only through the development and implementation of a range of project types under a variety of circumstances that a thorough understanding will emerge of what really is and is not feasible in terms of long-term carbon sequestration. What is clear is that unless projects offer viable economic alternatives to existing land-use patterns, they will fail. I venture to say that each of us here present would readily cut the last remaining tree to feed our family.

Examples of projects currently being funded for carbon offset purposes include:

- community-based reforestation in Guatemala, in which small farmers are being trained in planting trees to halt erosion, increase agricultural productivity, and provide income through fuelwood, fruit, and lumber production. The carbon benefit results primarily from the protection of nearby forests associated with these measures;

- nature reserve establishment in Paraguay, in which a forest parcel targeted for sale to timber interests and containing endangered species has been purchased and is being managed for long-term conservation;

- support of indigenous peoples in the Amazon to aid in their efforts to obtain and protect ownership rights to traditional tribal lands, and thus contribute to the long-term conservation of forests located on those lands;

- implementation of "biomass friendly" harvesting practices in Malaysia to reduce damage to the forest associated with timber extraction, including better road design and directional tree felling;

- establishment of tropical hardwood plantations on exhausted agricultural lands in Ecuador; and

- planting of Douglas fir on private pasture land in the Pacific Northwest of the United States.

These projects cover carbon offset possibilities ranging from social forestry to commercial plantations. Although none of these projects has been reviewed by the Climate Change Secretariat, the collective experience illustrates the difficulty of identifying credible carbon offset projects from within the economic development project portfolio.

Alternative Outcomes of Large-Scale Carbon Offset Funding:

Billion of dollars may soon become available for CO_2 emissions reduction and offset efforts from industrialized countries and corporations. Based on the factors discussed above and on the perspective of the interest groups that will play a role in shaping national and international policy in this area, it is possible to suggest several plausible scenarios representing the long-term outcomes of large-scale carbon offset funding in the tropics.

A. The development-as-usual scenario

A large amount of money could be spent on what amounts to doing more of the same with respect to traditional sectoral economic development projects. On the other hand, population growth could overwhelm any chance at measurably changing land use trends. Clearly this is not a viable option for the world community.

B. Land-purchasing-and-leasing scenario

For corporations and governments concerned about long-term reliability of carbon sequestration, the option of purchasing of leasing land in developing countries may appear attractive. Direct control over the uses made of forest or reforestable land could offer the best prospects for long-term carbon management. Many countries encourage foreign investment and allow the purchase of land by foreigners and large areas of land in tropical countries end up owned or leased by private or public foreign entities. While this approach could result in considerable carbon storage, it is not clear that this outcome would be considered an economic development success. Indeed, problems of migration to urban areas with resulting crowding and unemployment would likely be aggravated as people are further displaced from the countryside as land becomes more scarce. Nor could the political integrity of these parcels be guaranteed over the long-term; a political backlash accompanied by land nationalization would be a distinct possibility.

C. The "welfare" or "incentives" scenario

Governments anxious for international debt relief or other forms of economic assistance might be tempted to commit to large-scale forest protection or reforestation in return for economic grants or debt forgiveness. Although this approach could result in the promulgation of laws, policies and programs that would protect and store considerable carbon, legitimate questions will be raised concerning the likelihood that these laws and policies would actually be implemented, that local populations would ultimately benefit from these payments or that economic development would in fact occur. In many cases governments lack the ability to actually bring about the land-use changes to which they might agree. In other cases, corruption or other implementation barriers might keep the money from going to its intended destination. As a result, it is not clear that this approach would ultimately be considered an economic development of climate change mitigation success.

D. The forest management scenario

Huge areas of forest that might be deforested or severely degraded in coming decades could be managed properly in an organized fashion through the availability of large-scale funding. Currently, the economic returns from sustainable forest management cannot compete favorably with short-term economic returns associated with less careful management and subsequent conversion to alternative uses (ITTO 1988, Buschbacher 1990).

By compensating for the differences in rates of economic return, large-scale funding funneled into the forest management could advance goals of carbon sequestration, economic development, biodiversity protection, watershed management, and indigenous peoples' self-determination. There are, however, significant technical and implementation barriers facing large-scale natural forest management in the tropics (Johnson & Cabarle 1993).

E. The biomass energy scenario

Currently, the upfront costs of planting and growing biomass crops and building a biomass gasifier, for example, are uneconomical as compared to standard fossil fuel projects (Hall et al. 1990). There are, however, large areas of land in developed and developing nations capable of supporting sustainable biomass production at levels that would make the production of commercial energy technically feasible (Houghton 1990). As with natural forest management, large infusions of funding could compensate for the cost difference between biomass and fossil fuel energy production. Several millions of hectares might, in principle, be converted to biomass energy production, storing billions of tons of carbon in new biomass and displacing the emissions of many more billions of tons of fossil fuel use.

Conclusion

Sustainable commercial biomass energy production on a large scale, however, remains a largely theoretical proposition; a great deal remains to be understood and demonstrated about the environmental and economic implications of biofuels.

Each of the scenarios mentioned clearly oversimplifies what will likely occur, as suggested by the range of project types currently being funded for carbon offset purposes. They are not mutually exclusive. We suggest several conclusions:

(1) Massive new private-sector spending on carbon offsets in developing countries could be spent in ways having very different implications for a country's resource base, population, and economy.

(2) It should not be assumed that private-sector goals associated with gaining regulatory credits for carbon offset projects will correspond well to the economic development priorities of many developing nations.

(3) Certain approaches to carbon offset forestry are more likely than others to advance both global climate change mitigation and economic development goals.

(4) The economic development community, to the extent it hopes to benefit from carbon offset funding, should promote carbon offset concepts that represent confluence between several objectives.

(5) As legislators begin to develop policy guidance to private enterprises, the implications of each criterion should be carefully considered.

As a result of the social, economic and political complexities inherent in any decision for a nation to pursue a climate change policy, UNEP advocates a precautionary approach in dealing with scientific uncertainties. We will continue to encourage and assist decision makers to identify and implement no-regret response strategies to mitigate and adapt to climate change so that society can continue to develop in a sustainable manner with full consideration of needs of future generations that will inhabit the earth.

Legislators and regulators who undertake policy development in this area need to recognize that their treatment of these issues could dramatically affect the economies and land-use trends of developing countries around the world, as well as the long-term political viability of the carbon offset concept. It is not a regulatory task to be undertaken cavalierly.

Thank you very much for your attention.

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ECONOMIC DEVELOPMENT **CARBON SEQUESTRATION**

DEVELOPMENT AS USUAL SCENARIO

- Poverty Alleviation
- Social Forestry
- Infrastructure Development

LAND PURCHASE AND LEASING SCENARIO

- Large Scale Forest Preservation
- Large Scale Reforestation
- Large Scale Plantations

WELFARE OF INCENTIVES SCENARIO

- Poverty Alleviation
- Social Forestry
- Infrastructure
- Large Scale Forest Preservation
- Large Scale Reforestation
- Large Scale Plantations

FOREST MANAGEMENT SCENARIO

- Making Forest Management Economically Attractive
- Forest Conservation through Management

BIOMASS ENERGY SCENARIO

- Use of Waste Biomass
- Use of Biomass Crops
- Displacement of Fossil Fuels

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MAJOR ISSUES IN THE CONSERVATION OF BIODIVERSITY: GLOBAL RESPONSES AND THEIR IMPLICATIONS FOR THE ASIA-PACIFIC REGION

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MAJOR ISSUES IN THE CONSERVATION OF BIODIVERSITY: GLOBAL RESPONSES AND THEIR IMPLICATIONS FOR THE ASIA-PACIFIC REGION

Introduction

Is the loss of biodiversity really a problem that compels urgent action? Many thoughtful economists around the world are not convinced. Instead, they perceive that, despite the occasional regrettable and inexplicable recession, we are in the midst of an era of unprecedented prosperity and economic growth, expansion of knowledge, improvements in technology, and greater awareness of environmental issues. And indeed our planet continues to support economic growth at an ever more rapid rate, and massive food surpluses characterize much of Europe and North America. During the decade of the 1980s more than US$450 trillion were added to the gross world product. This growth in the global economic output over the past ten years was greater than the total economic output generated during the several thousand years from the beginning of civilization up to the year 1950. With such tremendous economic performance, the economists ask, why should we be overly worried?

A thoughtful ecologist might liken this to a hatchling falling from its nest high in a tall tree. Half-way down the tree a squirrel asks the plummeting bird, "Hey, how's is it going?" Just before being splattered on the ground, the bird answers, "Great so far!"

Lester Brown put this problem in an industrial context. Suppose a vast international industrial corporation quietly sold off a few of its factories each year, using an incomplete accounting system that treated these sales as income rather than loss. The cash flow looks good, profits are healthy, and stockholders are happy. But the stockholders don't realize that the profits are coming at the expense of corporate assets, so once all the factories are sold off, the company's officers will have to break the bad news that the corporation is bankrupt. You can imagine the shock that would greet such an announcement.

But ecologists, and many economists, have concluded that this is exactly what we are doing to the resources of planet Earth. We are relying on an incomplete accounting system which ignores environmental costs and resource depletion, instead encouraging us to deplete our productive assets, our biodiversity, to satisfy the "needs" of today's consumers at the expense of our children and our children's children. While many of today's consumers benefit from the misleading low prices paid for commodities prices which are based primarily on the costs of getting the commodities to the market, without including environmental costs or replacement costs of the resources lost, these prices are not sustainable. Worse, they are encouraging us to erode the basis of human welfare.

Suppose of all the generations of our species only some 2500 or so each sent a delegate to a congress to decide how resources would be manage. They might be able to reach agreement fairly quickly on three main principles for managing at least the renewable resources:

First, they might agree that each generation should conserve the diversity of the natural and cultural resource base so that it does not unduly restrict the options available to future generations for solving their own problems and satisfying their own values. The principle that each generation is entitled to a diversity comparable to those of previous generations could be called the CONSERVATION OF DIVERSE OPTIONS.

Second, they might agree that each generation should maintain the quality of the planet so that it is passed on in no worse condition than that generation had received it. The principle that each generation is entitled to an environmental quality comparable to that enjoyed by previous generations might be called the CONSERVATION OF EQUALITY OF OPPORTUNITY.

And third, the congress might agree that each generation should provide its members with equitable rights of access to the planetary legacy of past generations and should conserve this access for future generations. This principle could be called the CONSERVATION OF ACCESS TO KNOWLEDGE.

When we examine the record of past generations, we will find that they have fallen short on all three of these principles. The burning of the great libraries of Alexandria, the sacking of Rome, and the destruction of Babylon certainly lost important parts of the planetary legacy of knowledge. The record of past generations with biodiversity is even worse. Where human hunters moved into new habitats filled with native game animals, major extinctions have occurred. For example, recent paleontological studies have revealed that the first Polynesians led one of the greatest waves of extinction of species of plants and animals in the history of the earth; in Hawaii, 53 percent of its 82 land birds were driven to extinction by the first humans to arrive there.

But by virtually all measures, our own generation has been both the most creative in finding ways to expand consumption and the most destructive in the consequences of this creativity. Since 1950, the human population has doubled and resource consumption has increased by a factor of 10. Meanwhile, over half of the world's 6,000 languages have become moribund (spoken only by people middle-aged or older), an indication of the power of our global culture of consumption to replace local cultures whose survival was based on effective resource management. The impacts of economic growth have been similarly dramatic for the natural environment, with virtually no habitats left untouched. Globally, most biologists consider that well over 25 percent of species may be doomed to extinction by the middle of the next century. Peter Vitousek and Paul Ehrlich have calculated that over 40 percent of our planet's net primary terrestrial productivity is already appropriated by people, with inevitable consequences for the other species with which we share the earth.

Trade is not likely to be a sustainable solution. The global cry for "free trade" and the GATT agreement just feed the over-exploitation which characterizes our "consumer society". As the World Bank economist Herman Daly has pointed out, trade will allow some countries to live beyond the ecological carrying capacity of their borders, but all countries cannot possibly be net importers of raw materials and natural services. Free trade allows the ecological burden to be spread more evenly across the globe, thereby buying time to face up to the ecological limits of our planet, but at the cost of eventually having to confront the problem simultaneously and globally rather than sequentially and nationally (or even locally). We may then have a global disaster rather than the dispersed series of local disasters we see around the world today.

An obvious conflict exists between an international policy of free trade and a national policy of trying to ensure that full environmental costs are incorporated in prices paid for goods. If Thailand, for example, ensures that prices for its commodities fully incorporate environmental costs, it will be at a disadvantage in free trade when other countries subsidize transport, fertilizers, or soil erosion. Therefore, national protection of a basic policy of incorporating full environmental costs in prices constitutes a clear justification for tariffs on imports from a country that subsidizes its environmental costs.

Small wonder conservationists sometimes feel that the world is like the baby bird falling from its nest.

Biodiversity : A New Approach

In hopes of helping modern society stay in the nest at least until it reaches fledgling stage, the conservation movement has come up with a new approach, characterized by the word, "biodiversity." Simply stated, biodiversity is the measure of the world's variety of genes, species, and ecosystems. "Biodiversity" only really came into the public vocabulary around 1988. But biodiversity has struck a very responsive chord among scientists, decision-makers, and even the informed public. It is a comprehensive way of approaching conservation, bringing information, knowledge, awareness, and ethics into a complex mixture of protected areas, agriculture, economics, intellectual property rights, land tenure, trade, forestry, and so forth. It has enabled us to break out of our old approaches, such as excluding people from their traditional lands in the name of "conservation". It led to the Convention on Biological Diversity which was signed by 157 governments at the Earth Summit in Rio in June 1992 and entered into force at the end of 1993. *The Global Biodiversity Strategy* was published by the World Resources Institute, IUCN, and the United Nations Environment Programme (UNEP) in 1992. UNEP has promoted numerous biodiversity country studies, and literally dozens of meetings have been held in all corners of the earth to further develop the concept of biodiversity and build global consensus for the actions required.

Why did we need "biodiversity" as an approach? What was wrong with the conventional "species and protected areas" approach? Attempting to conserve nature species by species is age-old, beginning with Noah and his ark. While it may have worked for Noah, it is not working very well for us, as indicated by the rate of species lost. We also now realize the futility of trying to conserve 5 percent of the planet as protected areas when the other 95 percent is going down the drain. This is rather like a public health system that stresses the emergency room, with no maternity ward, no orthopedic section, no pediatric unit, no therapeutic care, no out-patient clinic and no preventive public health approach. We certainly need the emergency room, and as the world becomes more like a big city, we will need well-equipped and well-staffed emergency rooms more than ever. But we will also need the rest of the hospital and the public health system if we are going to treat the ills of our sick society. Our emergency rooms, our protected areas, and endangered species recovery plans can provide only part of the answer. For total health care, we need the biodiversity approach, leading to wide collaboration among government and the private sector, and strong political support.

The world now recognizes that biodiversity is an important issue. But given that people are at last paying attention, now what? Our bluff is being called: If biodiversity conservation is so important, what are we going to do about it? As a partial answer, the wealthy nations of the industrialized world have created the Global Environment Facility, operated by the World Bank, UNDP, and UNEP to provide several hundred million dollars for biodiversity. But what is the best way to spend that money? And is it enough? We still have a long way to go before we can provide convincing answers.

It is apparent that politicians and financiers still need a compelling case that investments in biodiversity are a good thing, because the sums being provided are still very modest. You might think that the US$300 million provided for biodiversity by the GEF is a lot money. And in some ways, it certainly is—especially if compared with the usual conservation budgets in developing countries. But we are still terribly out-gunned. GEF's $300 million to be spent over three years is matched by the annual advertising budget of the McDonalds hamburger chain. And last years the OECD nations spent a total of US$322 billion on agricultural support and subsidies, much of which has significant impacts on biodiversity in tropical countries.

Numerous examples can be provided to demonstrate that the amounts of money being spent to deplete biodiversity are many orders of magnitude greater than the small amount of funds that would have been required to manage the resources properly in the first place, or that we might reasonably expect to have available for biodiversity conservation in the coming several years.

Political Obstacles to Conserving Biodiversity

The attention given to biodiversity at the international level comes not a moment too soon. But converting this welcome flurry of interest at celestial diplomatic levels into changed behaviour on the ground will need to overcome a number of formidable political obstacles lurking in the shadows.

When biodiversity was seen as a rather narrow issue of a few endangered species, politicians were content to leave the issue with scientists and specialized agencies. But once measures to conserve biodiversity start to affect the way people consume resources, the politicians will assuredly assert more control over conservation activities. Keeping biodiversity on the agenda will require wide collaboration to influence the political process.

Conservationists face three formidable problems in trying to keep biodiversity on the public agenda. First, no easily-identified opponent is available against which conservation forces can be rallied: unlike headline-makers such as Bhopal, the Exxon Valdez, and Chernobyl, no newsworthy disasters have yet linked human welfare with the loss of biodiversity. Second, the loss of biodiversity has no immediately observable impact on lifestyle; if we are losing dozens or hundreds of species per day, as many experts assert, then we are already living with the consequences of extinction without any discernable effects on our daily lives. And third, the general public seldom organizes to gain imprecise, collective benefits, such as conserving biodiversity.

All of these problems may be based on a mis-perception of reality by the general public. The general public tends to see business and industry rather than individuals as the major cause of environmental problems, and, therefore, as having primary responsibility for solving them. In other words, people are willing to see something done about endangered species, but they don't see that it has much to do with their own behaviour.

Why this disparity between the principle of conserving biodiversity and the practice of conserving individual sites or species? In many cases, preserving species such as tigers, elephants, or sea turtles provides primarily abstract benefits to individual members of the public, while the people who are expected to make economic sacrifices by restricting their activities in the habitat of these species tend to be either organized poachers, forestry interests, and developers who are very effective in conveying their concerns to politicians, or rural people whose behaviour is essentially beyond effective government regulation.

So while the general, largely urban, public may support conserving biodiversity in the abstract, the support by rural people for specific action on specific endangered species or sites tends to be much weaker.

This should come as no surprise, because the kind of public policies which are most popular are those which call for modest changes in current practices to address immediate, proximate causes rather than imposing comprehensive changes in deeply-imbedded social behaviour. Table I shows how what politicians think the public wants lines up with what conservationists think the public needs, well illustrating the political challenges we face in conserving biodiversity.

The "Six-I Solution" For Conserving Biodiversity

Table I demonstrates that the major problems of conserving biological diversity lie not in the biology of the species concerned but rather in the social, economic, and political arenas within which people operate. Finding solutions to the biodiversity crisis in this quagmire is our challenge.

All ecosystems make important contributions to human welfare. Maintaining the productivity of these ecosystems must be considered one of our highest priorities, along with national defence, health, and education. In the times of ecological, social and economic instability that are just around the corner, if not upon us already, the renewable and locally available biological resources and the knowledge of how to use these resources sustainably will be more important than ever.

We therefore need to be much more effective in making political leaders aware of the problems and the solutions, and building the public support that will be necessary for supporting the difficult choices ahead. Many proposals for action are being advanced. My suggestion is what might be called the "Six-I Solution": Investigation, Information, Incentives, Integration, International Cooperation, and Indigenous Communities.

TABLE 1: POLITICIANS AND CONSERVATIONISTS

WHAT POLITICIANS THINK THE PUBLIC WANTS FROM THEM	WHAT CONSERVATIONISTS THINK THE PUBLIC NEEDS
Life-style security	Fundamental changes in lifestyle
No great inconvenience	Restrict access to resources
Material benefits	Forego material benefits
Benefits quickly	Abstract future benefits
Clear cost-benefit ratio	Elusive values
Deferred cost	Pay today

1. Investigation: Learning how natural systems function

Our ignorance about biodiversity is vast. But it seems self-evident that increasing knowledge about the kind and variety of organisms that inhabit the earth and the ways that these organisms relate to each other, to humans, and to changes in environmental conditions must be a foundation of conservation action.

It is embarrassing for scientists to discover long after the fact major long-term changes to our planet, such as the hole in the ozone layer, the widespread damage to coral reefs, and the mysterious global decline of amphibians. The public might well ask, "Why didn't you tell us about these problems earlier?" The reaction of scientists might well be, "Because we have received insufficient public support to carry out our important work. While major public investments were being made in such things as searching for extra-terrestrial life, public investment in documenting life on our own planet was declining."

Answers to many major questions about how natural ecosystems function remain unanswered. For example.

- How many species does Earth support, and what explains the geographical variability in their distribution?
- What are the thresholds of the loss of biodiversity? That is, how much diversity is required to maintain different levels of ecosystem productivity?
- What are the limits to human carrying capacity on our planet, and how do these relate to biodiversity?
- What are the linkages between local, national, and global economies and their environmental underpinnings? At what point will the loss of biodiversity begin to cause serious economic consequences?
- How are the fixed amounts of the major elements of carbon, oxygen, nitrogen, hydrogen, phosphorus, and sulphur, which together constitute 95 percent of the mass of all living matter on earth recycled ("biogeochemical cycling") to support life on earth?

2. Information: Ensuring that facts are available and used to inform decisions

But ignoring our ignorance for a moment, we don't even utilize much of the information that we do hold: most decisions which affect biodiversity today are taken without anything remotely resembling a full consideration of the available information. Clearly, effective action must be based on accurate information, and the more widely shared the information, the more likely it is that individuals and institutions will agree on the definition of problems and solutions.

One problem we all face in this information age is information overload, what has been called "learning how to drink from a fire hose." We need to find ways of separating the wheat from the chaff, without throwing the baby out with the bathwater, or throwing in the sponge! We need to find simple indicators of damage to specific habitats, and use them in a way that is consistent within and between countries so that comparisons can be made and large-scale trends can be identified early enough to allow remedial action. In short, we need to be able to monitor what is happening to biodiversity.

We also need to give far greater attention to linking science with management, so that we can apply our full knowledge, including traditional knowledge, to improving the way our resources are managed. The partnership between science and management has yet to be formed, but could be a very productive enterprise for all concerned. Scientists need to give more thought to the practical implications of their work, at both site management and national policy levels; and managers need to become more skillful at mobilizing the techniques and results of science to improve the way they manage resources.

3. Incentives: Using economic tools to help conserve biodiversity.

Resource exploitation is governed by the perceived self-interest of individuals or groups, so behavior affecting biodiversity can best be changed by providing new approaches to conservation which alter people's perceptions of their self-interest. Since self-interest today is defined primarily in economic terms, conservation of biodiversity needs to be promoted through the means of economic incentives.

Incentives can be used to divert land, capital, and labour towards conservation. They can smooth the uneven distribution of the costs and benefits of conserving biological resources, mitigate anticipated negative impacts on local people by regulations controlling exploitation, compensate people for any extraordinary losses suffered through such controls, and reward the local people who make sacrifices for the benefit of the larger public. Incentives are clearly worthwhile when they stimulate activities which conserve biological resources, at a lower economic cost than that of the economic benefits received.

It is clear that significant progress in applying economic principles to ensure that biodiversity contributes to social and economic development will require a long-term programme of supporting action by governments, industry, and private voluntary organizations. Each nation has its own specific challenges, so solutions need to be custom-designed for each setting. More generally, at least the following general types of action are required:

- prepare national or regional conservation strategies to develop economic policies which will conserve biological resources at the community level, and to determine what shifts are required to achieve national objectives for conserving biodiversity;

- develop methods for ensuring that national accounting systems accurately reflect the importance of biodiversity to economic well-being, and make explicit the trade-offs and value judgements regarding impacts on biodiversity that may not be measured in monetary terms;

- develop methods for assigning values to non-marketed biological resources, appropriate to the needs of the country; and

- develop methods for assessing the true costs of allowing the depletion of biological resources to continue, and devising alternative paths toward sustainable development.

4. Integration: Promoting a cross-sectoral approach to conserving biodiversity

Nature conservation has often suffered from being seen as a highly specialized sector of only limited relevance to the real needs of society. But consider some of the other sectors which depend on nature's bounty for their welfare: agriculture depends on wild genetic resources and biological controls; medicine draws on nature for pharmaceuticals; industry requires raw materials, all of which ultimately come from nature and many of which are biological in origin; tourism increasingly bases its attractions on natural amenities; indigenous

peoples' groups have a deep vested interest in ensuring the conservation of the biological resources upon which their cultures are built; water resources often require intact forests to protect watersheds and prevent siltation; marine fisheries depend on healthy rivers and estuaries as nursery grounds; disaster prevention needs natural vegetation to prevent landslides and floods. Many others could be mentioned. Each of these sectors needs to be reminded of its reliance on biological diversity, and provided with opportunities to invest in ensuing the continued survival of the biological basis of their prosperity.

Since biological resources provide the basis for sustainable forms of development in many sectors, it is apparent that many institutions need to be involved in their conservation. A major constraint is the fundamental mismatch between the way natural systems function and the way governmental organizations are deigned to manage these systems; natural systems are highly inter-related structures with many complementary functions, while government agencies for managing these systems are characterized by fragmentation, conflicts in use of resources and jurisdiction over that use, polarization of interests, and poor coordination and communication. For example, few of the government agencies dealing with pollution have direct involvement with issues of biodiversity.

Certainly the resource management agencies need to be strengthened, but additional institutional mechanisms need to be developed to ensure a more comprehensive approach to solving resource management conflicts. How can universities be enabled to work more closely with the management agencies? How can long-term research and monitoring efforts become part of the management enterprise? What sorts of coordinating mechanisms are likely to be effective under what conditions? How can the policy obstacles to conservation be removed, and administrative procedures streamlined? What needs to be done to further encourage governments and the private sector to work to the same objectives? How can government institutions separate those activities which they are uniquely qualified to carry out from those which would be more efficiently or effectively done by, for example, NGOs or local communities? We need to find answers to such questions.

5. International Cooperation: Building productive collaboration for conserving biodiversity

Maurice Strong has referred to "the transcending sovereignty of nature," since the by-products of industrial civilization cross borders, and so must the authority to deal with them. The forces reducing the world's biodiversity are global; therefore, an international response is required. The international response to changes in global chemistry as exemplified by the Montreal Protocols demonstrate what can be done. Though few can be satisfied with the progress to date, and many will be worried that serious progress will not be made until it is too late, international cooperation is an essential mechanism for mobilizing an effective response to conserving the living resources of our planet.

Biodivesity is already a major issue on the global agenda. The final text of the Convention on Biological Diversity, as approved at the Earth Summit in Rio, was the result of several years of negotiation and conceptual work on biodiversity. The UNEP *country studies, Caring for the Earth,* and the process which led to the publication of the *Global Biodiversity Strategy* all contributed to the vision of what is involved in conserving biodiversity. The concepts included in the Biodiversity Convention well reflect this vision. In a sense, the Convention marks a major change—some would call it a "paradigm shift"—in the way governments address the management of their biological resources, making the issue much more comprehensive and making the conservation of biodiversity an important international issue.

The Biodiversity Convention provides a framework which will enable each government to decide for itself how best to conserve its own biodiversity, though the Convention itself provides few if any specific means of implementation. In the Convention, governments affirm that they have sovereign rights over their own biological resources, but are responsible for conserving biodiversity and for using their biological resources in a sustainable manner. While recognizing the importance of information and research, they do not accept scientific uncertainty as an excuse for postponing measures to reduce threats to biodiversity. Governments agree that it is vital to address the causes to biodiversity loss at their source, and that *in situ* maintenance of ecosystems and habitats is the foundation for conserving biodiversity. Further, the Convention recognizes the traditional dependence of many indigenous and local communities on biological resource, and the desirability of enabling local communities to share equitably in the benefits arising form the use of indigenous knowledge.

The convention commits governments to promote more inter-governmental cooperation as well as with the NGO sector and with private corporations. Finally, the Convention recognizes that more money is needed to conserve biodiversity, and that increased investment will bring considerable environmental, economic and social benefits at local, national, and global levels.

Now we need to encourage governments to ratify the Convention, and then put its provisions into force.

6. Indigenous Communities: Returning management responsibility to those whose welfare depends on the resources managed.

While biodiversity is a global issue, it is also very much a local issue. Though global forces may be driving the loss of biodiversity, the impacts of this loss are felt at the local level. The local knowledge that people have about their resources and how they should be managed provides a critical resource for all of humanity. Indigenous cultures unlike modern industrialism have stood the test of time. But, as the World Commission on Environment and Development has pointed out, growing interaction with the larger world is increasing the vulnerability of these groups, and development tends to destroy the only cultures that have proved able to thrive in rainforests, deserts, arctic areas, and other difficult environments. Indigenous people who live in intimate contact with their major resources could provide much of the intellectual raw material for a shift to sustainable societies, provided they are empowered to act in their own self-interest. Cultural diversity and biological diversity need to be conserved together if either is to prosper.

At a somewhat more prosaic level, local people more generally need to be empowered and encouraged to carry out the sound land stewardship which rural people know is in their long-term self-interest. For many rural landowners, their word is their bond, and they have a vested interest in conserving the resources upon which their welfare depends.

In short, despite the global dimensions of the problem of the loss of biodiversity, solutions ultimately must be site-specific, calling for novelty and innovation built on the locally available resources, both biological and cultural. This may sound trivial, but in fact each time we are able to help build local capacity to manage resources sustainably we are contributing to a powerful force in human history, building a sustainable future through maintaining the local capacity to adapt to change.

Action by Parliamentarians

In seeking to ensure that biodiversity remains available to support development, nine key actions can be taken by parliamentarians.

1. Ratify the Convention on Biological Diversity.

Some 16 Asia-Pacific governments have ratified the convention to date (see Box). This Convention should serve as a key coordinating, catalyzing, and monitoring mechanism for international efforts to conserve biodiversity. Its provisions will constitute international norms and guidelines for conserving biodiversity, using its elements sustainably, and sharing the costs and benefits of such use in an equitable manner. In the long run, the Convention may require the negotiation of additional protocols (for example, on transfer of technology and access to genetic material). Implementation of the other actions called for in Agenda 21 need not be delayed until the Convention and its protocols are in place. To the contrary, taking action on the agenda proposed here will speed the Convention process and increase its effectiveness.

2. Establish an International Council on Biodiversity (ICB).

The debates in the UNCED and Convention process make quite clear the general lack of information and knowledge about biodiversity and the need for far greater exploration of the issues. The proposed ICB would establish a mechanism that will organize open and sustained dialogue, exploration and debate on key issues, and collect, assess, and make available information in a form suitable for decision-making at all levels.

The ICB should include governmental officials, scientists, NGOs and citizen groups, community representatives (indigenous groups, clergy, etc.) and resource-using associations. It would provide a means for facilitating more input from the scientific community and non-governmental organizations. The Council should work closely with the interim Secretariat of the Biodiversity Convention, but remain independent.

3. Develop an Early Warning System (EWS).

Action to save, study and wisely use biodiversity will depend upon timely dissemination of information to those that need to act. Agenda 21 calls for monitoring of biodiversity, as would be carried out by this EWS. It would develop methodologies, norms, and standards for monitoring, providing a transparent monitoring mechanism and leading to effective verification of compliance with international conventions and protocols. It would be based on a network of facilities that would develop and distribute information electronically about the impending damage, degradation or loss of species, genetic materials or ecosystems, to elicit appropriate action ("Amnesty for biodiversity"). This network should be built upon the existing capabilities of governments, intergovernmental organizations, and the private sector. It should involve partners in each country, and be scientifically credible while remaining independent and capable of rapid action. It would also include a "world watch list" of farm animals and plants at risk, to enable national governments to take remedial action (complementing the lists that already exist for wild plants and animals). At the national level, governments should determine for themselves how to monitor their own performance in achieving the objectives they establish for themselves; to the extent possible, national monitoring of environmental conditions should be in a form which is useful to reporting to the world community.

4. Develop Mechanisms for Conducting Environmental Impact Assessment of Policies.

EIA is now well established for projects, but Agenda 21 also recognizes that policies can have far greater impact on biodiversity than any project. The degradation of soil, water, forests, and wetlands is often driven at least in part by agricultural subsidies, and trade can have significant impacts on biodiversity. Yet trade and agricultural policies are seldom analyzed in terms of their impact on biodiversity. For example, the GATT negotiations are confined to trade officials, so not even the full economic impact of these deliberations are being addressed, let alone the environmental dimensions. Ways should be found to bring conservation incentives into these discussions as a means of decoupling subsidies from commodity production, thereby providing a fresh approach to resolving trade disputes, leading to both environmental and economic benefits. At the national level, mechanisms should be established, by legislation or other means, for determining the impact of land tenure systems, trading systems, and agricultural prices on land degradation and revising inappropriate policies.

5. Prepare National Protected Area Systems Plan.

National systems of protected areas are an essential means of implementing the Biodiversity Convention, and actions related to protected areas are called for in Chapters 10, 11, 13, 14, 15 and 17 of Agenda 21. Legislation should mandate the preparation of national protected area systems plans, which would establish national objectives for protected areas (including environmental, social, cultural, and spiritual functions and values), identify important areas in all terrestrial, coastal, and marine habitats, and establish policies for delivering benefits to people living in and around the protected areas. Particular attention should be given to coastal fishing communities, whose indigenous knowledge can be a valuable management tool. National systems of protected areas should address a range of different approaches to conservation management, and be coordinated at the international level in order to ensure that the widest possible range of the world's biological diversity is protected.

6. Develop Innovative Funding Mechanisms at the National Level.

Of particular concern for many governments are mechanisms to provide the funding required to implement the measures included in Agenda 21. The basic principle is to ensure that prices fully reflect environmental costs, but in the short term, additional sources of investment are required. Dedicated taxes, changes in subsidy structures, gate fees to national parks, and returning management responsibility to the private sector are among the possibilities that should be considered. In general, conservation and sustainable use must be put on economically sustainable grounds. This will often call for careful examination of hidden subsidies to over-exploitation (what have been called "perverse incentives").

7. Develop Mechanisms to Promote Access to Genetic Resources.

Under the Biodiversity Convention, access to genetic resources *in situ* is made subject to the prior informed consent of the country where the collection takes place *in situ*, and access must be on mutually agreed terms. Parties, particularly developing countries, will need to enact legislation submitting access to genetic resources to a permit system, and providing the general conditions for the issuance of such permits. Farmers rights will need appropriate recognition. One condition should be equitable sharing in the benefits of inventions which might derive from the material which their care has generated over the years. It would also be useful to specify that the fees received for collection constitute a national fund for biodiversity conservation.

8. Facilitate the Transfer of Technology and Knowledge.

The developed countries will need to consider how to facilitate the transfer of technology relevant to the conservation and sustainable use of biodiversity. Either the technology is accessible because it is in the public domain (for example, if resulting from government-supported research), or it is safeguarded under the Convention under intellectural property rights if it is in private hands. To facilitate the transfer of such technology, acquisition may be through the funding mechanism under the Convention, under voluntary measures on the part of industry, or under a system of incentives to make the technology available. Within countries, legislation might consider ways of ensuring that more of the locally-available knowledge, both from scientists and from indigenous knowledge, is applied to resource management. National legislation should also give due consideration to the fact that technology is not culture-neutral, and that "turn-key" transfers of technology are far less likely to be effective than a careful consideration of technologies appropriate to the cultural needs of the society. Transfer of knowledge must accompany transfer of technology.

9. Empower Individuals and Local Communities to Benefit From Conservation.

A major theme of Agenda 21 is providing benefits to local communities, developing more democratic decision-making at local level, and enabling the full involvement of all sectors of society. Legislation is required to convert these principles into reality. Legislation should promote voluntary conservation by land owners, including incentives in the form of reduced taxation. Contracts could also play an increasingly important role, including leases, easements, and management agreements which provide opportunities to secure the management of the land for conservation purposes, while providing a financial incentive to the owner. Legislation could establish financial incentives to pay local farmers for their services to maintain traditional varieties, rather than subsidize them to grow increasing amounts of food which cannot be sold at a commercial price. Government investments in developing marketing facilities for a wider range of biological resources should be considered.

Conclusion

To conclude by putting diversity in a broader historical context, I would like to quote Vaclav Havel, then Prime Minister of Czechoslovakia, who was speaking at the World Economic Forum in Davos, Switzerland, in February 1992. "The fall of communism can be regarded as a sign that modern thought based on the premise that the world is objectively knowable, and that the knowledge so obtained can be absolutely generalized has come to a final crisis," Havel said. "This era has created the first global, or planetary, technical civilization, but it has reached the limit of its potential, the point beyond which the abyss begins. The end of communism is a serious warning to all mankind. It is a signal that the era of arrogant, absolutist reason is drawing to a close and that it is high time to draw conclusions from that fact. Communism was not defeated by military forces, but by life, by the human spirit, by non-science, by the resistance of Being and man to manipulation. It was defeated by a revolt of colour, authenticity, history in all its variety, and human individuality against imprisonment within a uniform ideology. Things must once more be given a chance to present themselves as they are, to be preceived in their individuality. We must see the pluralism of the world, and not bind it by seeing common denominators or reducing everything to a single common equation."

Havel is a poet turned politician, and his message reaches out to all of us. We need both biological diversity and cultural diversity, and we need diversity in our approaches to conservation. Our capacity to adapt to change will be based on the decisions we make today . If we continue to abuse our life support systems, we and our children will pay the price. If, on the other hand, we decide that it is time to transform our societies into sustainable ones that live within the limits of the productivity of nature, then our descendants will sing our praises.

Box : Asia-Pacific Countries Which Have ratified the Convention on Biological Diversity

1.	Marshall Islands	08 October 1992
2.	Maldives	09 November 1992
3.	China	05 January 1993
4.	Fiji	25 February 1993
5.	Papua New Guinea	16 March 1993
6.	Vanuatu	25 March 1993
7.	Cook Islands	20 April 1993
8.	Japan	28 May 1993
9.	Australia	18 June 1993
10.	New Zealand	16 September 1993
11.	Mongolia	30 September 1993
12.	Philippines	08 October 1993
13.	Nauru	11 November 1993
14.	Nepal	23 November 1993
15.	Samoa	09 February 1994
16.	India	18 February 1994

TRADE, ENVIRONMENT AND SUSTAINABLE DEVELOPMENT
THE CHALLENGE TO PARLIAMENTARIANS

By

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Mr. Chairman, Your Excellencies, Distinguished Participants, Ladies and Gentlemen.

Allow me to begin by expressing my sincere gratitude, on behalf of the United Nations Environment Programme, to the East Asia and Pacific Parliamentarians' Conference, to the Government of Thailand, and to His Excellency Mr. Tinawat Marukpitak, Chairman of the House Standing Committee on the Environment, for organizing and hosting this important Conference.

This morning, I would like to address both a timely and difficult issue: the relationship between trade liberalization, environmental protection and development sustainability. Timely, because only last week, ministers from 124 developing, transitional and developed countries met in Marrakesh, to formally conclude the Uruguay Round; to adopt the Final Act; and to launch the newly created World Trade Organization. The WTO, with more power than the 45 year old GATT, will begin its work in July 1995.

And complex, because in no other political arena is the objective of integrating environmental objectives into economic policies more intricate than in the trade arena. At play is what appears to be a vortex of scientific, economic, legal and political objectives, each moving in different directions, following different agendas.

In trying to present some of the issues, I would like to divide my presentation into three sections: (1) Objective; (2) Issues; and (3) Follow-Up. As will become evident, the divide between objectives and issues is, at best, tenuous.

Mr. Chairman, let me begin with "Objectives." From the trade side, the objective of the World Trade Organization most simply stated is improving human welfare by encouraging economic growth and efficiency through trade liberalization. Conservative estimates suggest that with the implementation of WTO rules, between $200 to $300 billion will be added to the global economy. Current annual trade in goods and services is estimated at approximately $3 trillion.

The Final Act represents the most comprehensive and complex trade accord ever struck. It is historic, for a number of reasons. Services, with important exceptions, will be included. Stricter requirements for product price and product input subsidies will be tighter. New measures, often contentious, have been agreed to regarding intellectual property rights. New tariff reduction levels and schedules will come into effect.

In many ways, the objectives of trade liberalization coincide with those of environmental protection. One example is subsidies. Estimates suggest that some $350 billion is spent each year, largely in the United States and European Union member states, on agricultural subsidies. For the first time, the WTO will begin addressing the contentious issues of such subsidies.

The environmental link is reflected in a recent study of the Government of New Zealand, entitled *"Impacts of the Environment of Reduced Agricultural Subsidies."* That report, based on the case study of New Zealand, found that lower subsidies meant reduced use of phosphate fertilizers and pesticides. That the rate of using marginal lands for pasturing dropped significantly, thereby reducing land degradation.

This is just one example of how the disciplines of trade liberalization can coincide with emerging disciplines of environmental protection; namely, that increased efficiency, dealing with markets, governmental policy failures should be as much a concern of environmental specialists as it is of free traders.

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In recent months, the issue of trade and the environment have been presented as clashing interests by the media. And, there are real areas where differences in substance exist. Yet, in many crucial areas, policy compatibility is real.

In the environmental arena, emphasis in recent years has moved from focusing on the symptoms of degradation, such as controlling pollution through end-of-pipe technologies, to looking at, and reforming, the economic causes of environmental degradation. An enormous amount of work is focusing on quantifying how specific market failures, related to inappropriate pricing, of structural rigidities, contributes to environmental decline. In response, governments are moving, albeit slowly, to correct such failures, with a wide range of policy options.

One example is market-based instruments. In recent years, the use of economic instruments such as taxes, rebates, charges on pollution, the establishment of tradeable emission markets has undergone a three-fold increase in many countries. That is one of the reasons why the WTO has included market-based instruments in its rules, and in its workplan: to determine the border effects of such eco-taxes, and elaborate border adjustment policies for them.

This increased use of market-based instruments is just one leg in the growing effort to internalize environmental externalities, so that market prices begin to tell the ecological truth. The process is painstaking. It entails environmental valuation, adjusting accounting procedures, deciding on appropriate fiscal policy rates. Yet, it is beginning. And it is a very powerful area of agreement between trade and environmental decision-makers; namely, the need to get the price right, as a prerequisite to getting the policy right.

Mr. Chairman, environmental economics is an area of major concern and activity to UNEP. I would be happy to answer any questions which this distinguished group might have about UNEP's activities in this area.

Environmental economics is one area where policy objectives coincide. Yet, progress is slow, and it is not yet keeping pace with environmental degradation, which continues to accelerate. So, the most simple question we may wish to ask in this complex topic of trade and sustainable development is: how to we get from where we are now, to where we want to be?

I will not go into great detail as to where we are now. Some examples, however, suffice to drive home the fact that we must change. Scientific evidence continues to show that environmental degradation is increasing in scale and scope. And, in many instances, ecological degradation has reached planetary dimensions.

For example, despite two decades of hard-fought gains to control air pollution, the global rate of sulphur dioxide and NOx emissions has increased by roughly 20 percent since 1970, and continues to increase. In this region, sulphur dioxide emissions has doubled in the past twenty years, according to a recently released UNEP 1993-1994 *Environmental Data Report.*

Because of the accelerating loss of natural habitats, including wetlands, coral reefs, tropical and temperate forests—coupled with growing industrial pollution, urban expansion and other pressures—global biological diversity is being lost at a rate of at least 30,000 species each year.

Continued reliance on metals, pathogens, synthetic organic compounds including chlorinated compounds has led to higher levels of dioxins and furans in soils, where they contribute to the double problem of contributing to the global loss of productive topsoils, and up the food-chain.

Chemicals have also contributed to increases in rates and severity of eutrophication, salinization, acidification and higher nitrate concentration in fresh waters, on a global average.

As worrying as what we do know, is what we do not. Despite enormous efforts, science has little clear idea of the specific long-term, low-dose environmental and health effects linked to increased reliance on synthetic chemicals. Yet, by this point, we should be surprised to learn that huge amounts of hazardous and toxic chemicals cannot be easily absorbed, especially when their half-life runs into decades.

The effects of chlorine-based CFC chemicals, thought to be stable and highly effective, on the ozone layer came as a shock, when first discovered. What other effects may stem from the millions of tonnes of chemicals we spew into the environment each year will have remains a matter of speculation.

And since the risk is not tied down to clear data, many economic interests including trade advocates complain that a lack of quantifiable risk is not sufficient grounds to alter the current economic path. Yet, environmental indicators may provide a glimpse of longer-term effects: a recent British study estimated that a startling 70 percent of all bird-life is in various stages of decline.

What such statistics, coupled with climate change, ozone layer and biodiversity loss, ought to drive home is a simple warning: we cannot continue making fundamental changes to the planetary eco-system, without running huge risks that we neither understand, nor are in a position to properly anticipate.

Which is why, when we look at general objectives, we need to move from ideas about general goals, to how we intend to get there. Everyone, rich and poor alike, supports environmental protection and sustainable development. No one actively supports pollution, or wildlife destruction. Yet, the differences are when we move from general principles, to plotting the actual changes needed to arrive at such principles.

The Uruguay Round is a good example of the difficulty of translating objectives to action. Free trade, as a principle, is one of the most compelling ideas of this century. Yet, the actual negotiations known as the Uruguay Round took seven long years. They almost collapsed on several occasions. And they were marked by political brinkmanship, which continues in the trade arena.

Ladies and Gentlemen, if consensus proves that difficult for free trade, what are the obstacles facing sustainable development, given that it is a new idea, with uncertain operational implications? Yet, quite clearly, sustainable development is the objective, when we speak about moving from here, to "there."

Despite the obstacles, I am optimistic we will get "there," because environmental concerns are deeply held public concerns. A recent poll by the Gallup Organization found once again that citizens in developing and developed countries alike remain very concerned about environmental problems. In South Korea, for example, 80 percent of respondents said that they were concerned "a great deal" about the environment. In the Philippines, it was 94 percent. In India, 77 percent.

One of the challenges to parliamentarians is how to tap what continues to be extraordinary public support for environmental action. One challenge, to which I have already alluded, is casting the environmental agenda in a positive light. Almost without exception, environmental standards and regulations work on a "negative" premise: standards are established in such a way that economic actors cannot exceed specified allowable limits. That of course is the nature of regulatory approaches. Limits are set and monitored. Fines are set, and penalties are levied on those who break the rules.

Yet, sustainable development demands a new approach. Regulatory measures, based on limits, are obviously needed. But so too are positive measures. Sustainability as a goal cannot be forged by experts alone, because it ultimately is not only a technocrat's task, but a moral and ethical obligation to future generations.

Which brings me back, once again, to the question of the link between trade, environment and sustainable development. At least in the short term, the question is not whether trade policies can be made more compatible with environmental protection. Instead, it is *how.*

For trade represents one of the best economic engines to move us a bit closer to the goal of sustainable development. And foremost in determining the details of that goal is recognizing what Prime Minister Gandhi warned about twenty-two years ago, namely, that poverty is the worst polluter, remains true today, where an estimated 900 million people live in poverty, and where untold more will be destined in our life-times. Each year, the planet's population increases by 100 million people. The vast majority, some 90 percent, are born in developing economies. Sometime in the next century, the planet's population is expected to double.

Trade represents one of the most powerful engines of economic growth ever known. It is also among the best hopes for many developing countries to increase per capita GDP, and in so doing, to improve environmental protection. For by increasing economic wealth, countries have more resources to address poverty and other environmental problems.

As noted earlier, the economic effects of the WTO are expected to add $200 to $300 billion each year to the world economy. Of that, an estimated $80 billion is expected to go to developing economies, concentrated in this region, and Latin America.

A 1992 study by Princeton University reinforced this assumption, when the positive benefits of trade liberalization were linked to improved environmental protection. The Princeton study using the NAFTA model found that, as per capita GDP passes the $5,000 mark, countries are able to better afford effective environmental protection policies.[2]

This model does not, however, give a green light to a repetition of the path of economic growth, fuelled by resource gluttony, pollution generation and huge amounts of waste pursued by the industrialized North. Sustainable development is not merely a question of alleviating poverty, of helping out the have-nots, but also of ensuring that the "haves" take on their global responsibility, including reducing over-consumption. As UNCED recognized, and as next month's meeting of the Commission on Sustainable Development will address, underdevelopment and over-consumption are two sides of the same coin. And that coin says: "unsustainable."

How we build and channel trade policies towards sustainability remains an infinitely more demanding task than ensuring that trade-environment are compatible. For the current trade-environment debate which was set in UNCED is one which can be characterized as the following: ground-rules have been set so as to contain the parameters of environmental policy, both international and national, so as to ensure that it does not interfere with the disciplines of trade liberalization. This is perfectly understandable, given deep suspicions that the trade-environment debate is really about protectionism hidden in new green clothing.

Time does not allow a detailed outline of trade-environment recommendations of UNCED. However, allow me to draw your attention to five, agreed to by governments:

One, ensuring trade and environmental policies are mutually supportive, in building sustainable development;

Two, building transparency, when trade measures are used for environmental goals;

Three, addressing the underlying causes of environmental and developmental problems, in order to avoid the unjustified use of trade policies for environmental goals: in essence, ensuring that green goals are not hijacked by protectionist pressures;

Four, avoiding trade restrictions, such as tariffs or countervail, as a means to offset differences in environmental compliance costs related to differing national environmental standards. And avoiding the use of unilateral trade measures in dealing with environmental problems outside the jurisdiction of the importing country; and,

Five, taking account of the special needs of developing countries, particularly with regards to environmental standards, or the application of trade measures;

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[2] See Grossman & Grueger, Princeton University, 1992.

The major focus of the recommendations is providing discipline, so that trade measures including import-export restrictions, quotas, countervail, or the use of trade sanctions do not become a first-best policy choice, as the environmental community struggles with an expanding list of problems, some very know, others only suspected of being a long-term risk.

Which brings me to the second part of this presentation–some issues in the trade-environment debate. Time does not allow me to cover them all. They can, however, be grouped in two very broad clusters: (1) the environmental effects of trade liberalization; and (2) the effects upon trade rules of environmental regulations.

Turning to the first, that of the environmental effects of trade liberalization, there is little doubt that trade liberalization has contributed to the rapid growth of export-intensive sectors in some countries. In this region, export-oriented economic strategies have, according to the 1993 *World Economic Outlook* report of the International Monetary Fund[3], contributed to consistent annual GDP growth rates exceeding 5 or 6 or even 8 percent per year.

Rapid economic expansion associated with a shift to export-intensive sectors has also contributed to increased environmental problems, particularly industrial pollution problems. For example, in this country, the volume of hazardous waste generation has jumped by almost 60 percent in the last decade. Energy consumption continues to grow by an estimated eight percent per year. The associated air pollution problems in Bangkok are one example of increased reliance on fossil fuels.

Similarly, industrial output in Indonesia is estimated to have undergone an extraordinary eight-fold increase since 1970. Forecasts suggest another 13-fold increase by the year 2020. Industrial pollution in Java, one of the industrial centres of the country, is well known in such areas as polluted groundwaters or air pollution.[4]

The questions is not: are these problems environmental problems? Without question, they are. In response, they are being addressed with increasing effectiveness and determination by governments in the region.

The question is: are these environmental problems of relevance to the trade-environment debate? The answer is that it depends on the scale and scope of the problem.

There is now very broad consensus that, if an environmental problem has transboundary or global implications such as acid rain, ozone layer depletion or the depletion of endangered migratory species, then trade measures are a legitimate policy option, even though such measures clash with the rules of the GATT.

The case of the Montreal Protocol is one example where strong scientific evidence, pointing to a global threat, led to multilateral support of specific trade actions. These include quotas and bans which are not in keeping with the trade rules.

Because the Montreal Protocol and other multilateral environmental agreements which use trade measures–and these include CITES and the Basel Convention–have not been challenged in the past, is not in itself grounds for complacency about their future status. This is why the relationship between the trade rules and MEAs has been discussed in the GATT since 1991, and was high on the list of new issues in the WTO workplan on trade and the environment.

In recent years, Mr. Chairman, GATT has been notified of some 400 regulations which may have adverse trade effects. These include restrictions on the domestic sale of hazardous products; domestically banned products; environmental packaging and labelling schemes; national waste disposal regulations, and many others.

If such measures were challenged and found to be inconsistent on grounds of being discriminatory, in theory, such measures could fall under GATT Article XX on "General Exceptions", which allows a Party to place health, safety and domestic natural resource conservation goals ahead of non-discrimination rules.

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[3] International Monetary Fund, *"World Economic Outlook,"* October 1993, IMF Washington, D.C.

I have prepared a brief, informal summary of some of the environmentally-related provisions agreed to last week by ministers, for the WTO. I will make some more comments about them, in my remarks on the follow-up process.

Before doing so, however, I would like to touch upon the issue of the link, if any, between environmental problems, confined to local areas, and natural resource protection policies focusing on resources within one's national borders, as being seen by some as a trade-environment issue, and opposed by others.

At issue for many are not questions of environmental protection, but concerns about competition. Some argue that counties which have lower environmental standards, or weak monitoring or enforcement mechanisms, gain an unfair comparative advantage in their exports over those countries with higher standards. This is premised on the assumption that capital and operating costs associated with environmental compliance pushes up the cost of finished products.

In essence, companies with lower standards can "dump" their exports in markets with higher standards hence the term "eco-dumping." During the NAFTA discussions of late last year, there were fears voiced by some that industries would re-locate to areas with lower environmental enforcement. And from this fear comes the associated concern of pollution havens.

This one issue tends to highlight a real friction between trade and environmental experts. GATT rules concern themselves with the final characteristics of the product which is exported or imported. Products need to conform with various national standards, provided there are no differences in how regulations or standards are applied between domestic and imported products. GATT does not concern itself with *how* a product is made, but rather with whether products are treated equally.

This is obviously a simplification. Yet, if we can find a contrast in approaches, it is that environmentalists look both at the characteristics of the product to determine, for example, toxicity or recyclability or auto emission standards. But they also look at the production process by which the products are made.

Indeed, a major focus of environmental efforts has been to improve production methods, through pollution reduction, cleaner production, integrated waste management, etc. What is of grave concern to trade advocates, and especially developing country exporters, is that concern over production methods might seep into the trade debate. In issues related to migratory species, or forestry management, it already has.

From a legal perspective, countries have the right to determine their own environmental policies, just as they have the right to establish their own tax or investment policies. Yet, in areas like tax or investment policies, we are witnessing a general move towards harmonization of such policies, even though they fall under national jurisdiction. The reason is because what might be lost in national jurisdiction is made up in international policy coordination.

This same process went on in the Uruguay Round, where the focus of negotiations was how to coordinate domestic policies, in allowable subsidies or standards, so that the economic benefits would outweigh the possible loss of national jurisdiction.

And once again, this core issue–how to balance national sovereignty with global responsibility–was at the heart of the UNCED process. And it remains at the heart of the trade-environment debate. When are environmental problems local? When are they global? Who makes the distinction, based on what science, and what values?

If resources are contained within one's national borders, but are of global concern such as biodiversity, who sets the policy for resource non-utilization? And who pays the compensation for developing countries forced to bear higher marginal costs of environmental protection in pursuit of global benefits?

[4] See Ropert Repetto. *Trade and Sustainable Development*, published by UNEP Environment and Trade Series, 1994.

The current debate about global versus national benefits as they relate to biological diversity is but one example of the difficult issues involved in this debate. The role of the Global Environmental Facility as a mechanism to cover the costs between national and global goals is, UNEP believes, of direct relevance to the trade-environment debate, in such areas as standards harmonization related to production process methods.

Yet, in the PPM issue, aside from wildlife conservation, the trade-environment debate is largely a false one. Although the same tensions as I have just described above remain, that is, the tension between the national standards of an exporting country, and the higher standards of an importing one, it is based on an obsolete assumption; namely, that industries producing goods with lower or no environmental standards can do so more cheaply than those with higher standards.

By contrast, a strong body of empirical evidence suggests the opposite. Industries have high environmental performance standards are also highly competitive industries. Industries with lower per unit energy inputs, increased process efficiency, integrated energy management, waste reduction, re-use and recycling, are highly competitive industries, from an economic and environmental perspective.

A recent study by Professor Stepehn Meyer of MIT surveyed fifty countries over a twenty-year period, to determine the actual association between environmental protection and economic prosperity. What Professor Meyers expected to find was a small to modest negative link between environmental standards and economic performance. Not only did he not find a negative link, but he discovered a positive one between environmental performance and economic returns. His conclusions are worth quoting:

> *It simply was not true that states with stronger environmental standards fared less well than those with weaker environmental standards. What was truly puzzling was that the analysis uncovered a consistent and systematic* POSITIVE *correlation between stronger state environmentalism and stronger economic performance across four of the five indicators. States with stronger environmental standards tended to have higher growth in their gross state products, total employment, construction employment, and labor productivity than states that ranked lower environmentally. (end quote)*[5]

It should be noted that the report does not argue that stricter environmental regulations are the CAUSE of increased economic growth. In addition, the report suggests that the link may be part of a broader correlation, in which states which favour higher environmental expenditures also tend to favour higher investments in education, health, transportation, communications and other infrastructure elements which stimulate economic growth. Yet, the conclusion is important, in light of the trade-environment debate.[5]

Mr. Chairman, I wanted to provide this important group with a brief over-view of some of the environmentally-related provisions in the Uruguay Final Act, agreed to last week.

The non-legally binding Preamble to the Agreement recognizes, for the first time, the importance of and I quote from the Agreement, the *"optimal use of the world's resources in accordance with the objective of sustainable development, seeking both to protect and preserve the environment and enhance the means for doing so in a manner consistent with their respective needs and concerns at different levels of economic development;"*

Within the final act, two Agreements are of particular importance: the Agreement on Technical Barriers to Trade (TBT); and, the Agreement on Sanitary and Phytosanitary Measures (SBS).

Both the SBS and TBT agreements recognize that each country has the right to establish its own level of environmental protection, as it deems appropriate. However, both agreements encourage countries to move to international standard levels.

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[5] Stephen M. Meyer, *"Environmentalism and Economic Prosperity: An Update." 16 February 1993.* Massachusetts Institute of Technology.

There are a number of important exceptions to his general recommendation, and they differ between the two agreements. However, both agreements require Parties to apply standards in a non-discriminatory manner, and to ensure that they are no more restrictive, or "least trade restrictive," than necessary, to achieve their objectives.

In addition, where national standards result in trade restrictions, or, more pointedly in the case of the SBS Agreement, when national standards differ from international ones, such measures should be based on scientific principles and scientific evidence.

From an environmental perspective, and from the perspective of UNEP, the reference to science in both the TBT and SBS is an area of considerable interest. As you know, science never provides 100 percent certainty to any problem, be it human health or environmental degradation. A major focus of UNEP's work, in the WTO follow-up process, is to convey to the trade community what we know about scientific data, what are accepted practices in environmental risk, and how the Precautionary Principle needs to become more closely connected to the trade-environment debate.

The WTO contains other environmentally-related provisions, including allowance for non-actionable domestic subsidies for environmental retrofitting of certain plants; recognition of the general exception clause in the services agreement; small changes in the dispute settlement process, so that expert scientific input may be requested; and other changes.

In the follow-up process, the WTO will establish a Committee on Trade and Environment. This will succeed the GATT Working Group, which was began meeting in 1991, around the time of the controversial Tuna-Dolphin dispute. The terms of reference for the WTO Committee was the subject of rather intense debate. Many countries view the environmental agenda, coupled with moves to include labour standards, as protectionist attempts by developed countries.

The Committee will be addressing, over the next two years, such areas as; the relationship between WTO Articles and a specific number of Multilateral Agreement including the Montreal Protocol, Basel Convention, CITES and others which contain trade measures as a means to achieve environmental goals; eco-labelling and eco-packaging; the trade effects of market-based instruments; transparency of national environmental measures; dispute settlement procedures; the effects of environmental measures on market access, especially in relation to developing countries; the issue of domestically prohibited goods.

Mr. Chairman, by way of both follow-up and a conclusion, the trade-environment debate will continue to be a highly-charged, and highly complex issue for some time. It merits the scrutiny of parliamentarians, to ensure that measures taken are done so in an even-handed manner. I think that many of the issues, particularly the legal compatibility issues, however important, will be solved over time. I think that many of the other issues will also be effectively addressed. For the simple reason that trade experts understand that the environmental agenda has no option but to keep moving forward. And because environmentalists understand that real compatibility between their goals, and the disciplines of trade liberalization.

The real challenge is to expand the contours of the current debate, from finding an enduring peace between trade and environment, to striking a bolder alliance between trade and sustainable development. How can we best build sustainable trade policies? How can trade be used as a power tool towards real sustainable development? These are real challenges, which we need to begin addressing. The conviction of concerned, informed and dedicated parliamentarians is essential if this challenge is to be met. I believe that this distinguished group gives hope that it can.

THANK YOU.

NOTE ON UNEP's Work on Trade and Environment

1. In these and other issues, UNEP is in the process of preparing a series of background studies in keeping with the recommendation of Agenda 21 (2.22) on various links between trade and environment. I have brought with me today one of those studies, by Robert Repetto of the World Resources Institute, in which he discusses trade-environment links in the Asia Pacific region. UNEP is also working with UNCTAD on a number of fronts, including an initiative to encourage mutual recognition between developing and developed countries on eco-labels, We are also preparing a series of country-case studies, which are being undertaken by UNCTAD and UNDP as well. Several studies have been undertaken by UNCTAD and UNDP as well. Several studies of countries in this region are in various stages of preparation.

A major focus of future work is capacity building. UNEP has already supported UNCTAD national workshops on trade and environment, in India, Malaysia, and this week, in conjunction with the small islands states conference. We also hosted, in February, and informal high-level conference entitled "Environment and Trade: Perspective of Developing Countries. "The meeting was attended by 26 countries, of which roughly half were at the ministerial level. I have brought reports if that meeting, if you are interested.

We are planning to have a series of follow-up, working level meetings later this year, focusing on specific issues like trade and pricing internalization, as well as another, ministerial level meeting later in 1994.

These efforts, and there is a great deal of other work underway by UNCTAD, the OECD Secretariat in Paris, are intended to back-up discussions which will be underway in the GATT/WTO.

Informal Meeting Report of UNEP Executive Director-UNCTAD Secretary General

(A) MEETING BACKGROUND:

An informal, high-level meeting entitled *"Environment and Trade: Perspectives of Developing Countries,"* was held in Geneva on Thursday, 17 February 1994. The session was co-hosted by the Executive Director of UNEP, and Secretary General of UNCTAD. It was held at the Palais des Nations, Geneva. Among those who participated were nine Ministers of the Environment, and some eight deputy ministers of the environment. It is important to note that the general focus of the discussions were aimed at encouraging an exchange of perspectives among *environment* policy-makers from developing and developed countries. In this regard, the meeting was not intended to duplicate discussions underway in other fora, including the GATT, UNCTAD, OECD or elsewhere.

The informal session comprised representatives from 26 countries or economic regions, as well as nine international organizations. The Chairman was Ambassador Rubens Ricupero, Minister for the Environment and the Amazon Region, Brazil. Participating nations were; Argentina, Australia, Austria, Brazil, Canada, People's Republic of China, Egypt, European Commission, Finland, France, Germany, Ghana, Hong Kong, Hungary, India, Jamaica, Japan, Malaysia, Mexico, Netherlands, Sweden, Switzerland, Thailand, United Kingdom, United States, and Zimbabwe.

(B) PURPOSE OF MEETING:

The purpose of the informal session was to facilitate an exchange of views among developing and developed countries, on environmental aspects of the trade-environment debate. In December 1993, at the OECD high-level meting on trade and environment, the Executive Director of UNEP stressed the need to include developing countries as full and equal partners in the trade-environment debate. In this context, it was suggested during the December 1993 meeting that UNEP, in cooperation with UNCTAD, organize a small, informal session of developing and developed countries.

In keeping with the original intent of the session, only a limited number of countries were invited to participate. In drawing up the invitations, unfortunately not all countries which have played an active role in, and made a positive contribution to, the trade-environment debate could be invited. Representation was sought from all regions, while at the same time efforts were made to keep the meeting informal and small.

(C) CONTEXT OF TRADE-ENVIRONMENT ISSUES:

In recent years, links between environmental protection and trade liberalization policies have come under closer scrutiny. Concerns revolve around two major issues: (i) the potential effects of both national environmental regulations, as well as international environmental measures (including multilateral environmental agreements), on free trade; and (ii) the environmental impacts of trade liberalization.

Analysis of trade-environment links has increased significantly, both at the national level, as well as in international fora. In 1991, for example, the GATT working group on trade and environment began meeting on a regular basis, to clarify specific policy compatibility issues. UNCTAD's work on Trade and Sustainable Development comprises a broad range of activities, including country-case studies, market access and export promotion activities for developing countries, education and training. UNCTAD has implemented a broad programme of work on Trade and Environment at the inter-governmental level. The OECD joint experts group on trade and environment continues to analyze specific areas in the trade-environment rubric, including production and process methods (PPMs), trade measures in MEAs; border effects of environmental fiscal and tax-related policies, and other areas.

In December 1993, negotiations for the GATT Uruguay Round were completed. The TNC text contains several provisions related to the environment, including reference to sustainable development in the text preamble, and specific environmental provisions in the draft text. Policy makers are now assessing how best to more closely integrate two major policy achievements of the 1990s: the recommendations of the Earth Summit, which comprise of the current follow-up work related to UNCED, and the implementation of the Uruguay Round.

As work on trade and environment intensifies, it is clear that the legal, economic, scientific and other links are highly complex, requiring additional analysis, and exchange of views and perspectives, as well as more detailed work. It was this broader context, that the UNEP/UNCTAD informal session on environment and trade was held. The purpose was matched closely to suit the overall context of the issues, as well as the particular timing of the meeting in light of the follow-up work of the Uruguay Round.

(D) GENERAL ISSUES OF CONSENSUS:

There was very strong consensus reached on a number of issues raised during the sessions. The most important was that trade and environment are not, and should not be, confrontational issues. Instead, there was general support for the idea that trade and environment are, and should be, designed to be mutually supportive. It was felt that the most desirable situation was one where international trade rules should not impede environmental goals; and where environmental priorities did not impede trade liberalization and market access. As a means of achieving this, a multi-lateral appraoch was widely supported.

Free trade was viewed by the participants as being a pivotal means to alleviate poverty, increase per capita incomes, build and strengthen infrastructure, etc. There was unanimous agreement that economic growth and environmental protection need to work in tandem. Trade liberalization represents a principal engine of economic growth in the global economy, and is of crucial importance to developing countries. It was a crucial means by which developing countries could alleviate poverty and underdevelopment, widely held to be a major cause of environmental degradation. The challenge was to ensure economic growth was sustainable.

Likewise, there was strong consensus that trade and environment could not be addressed outside of obligations and recommendations of Agenda 21. Participants noted the need for sustainable development, and that

perspectives of developing countries in trade and environment were related to multi-lateral financial assistance, and international co-operation. There was strong agreement that such cooperation represents the most effective strategy to ensure policy compatibility between trade and environment. Participants made it clear that the introduction of unilateral trade measures as a means to achieve environmental objectives should be strongly resisted. Multi-laterally agreed rules should be the norm, and, whilst welcoming the conclusion of the Uruguay Round, one participant suggested that analysis needed to be undertaken in clarifying both the contributions, and shortcomings, of the Round in securing environmental protection.

In this context, many participants noted that environmental standards and-or environmental measures should be the least trade restrictive, and that unilateral environmental actions should be avoided. Several participants noted that although progress is now underway towards the so-called "Greening of the GATT," comparable efforts need to be made towards the "Gatting of the Greens": that is, the need for the environmental community to understand more clearly the rules of international trade, and ensure environmental policies fit into trade rules. Indeed, some participants felt that multi-literalism in this context implied access to relevant information in order to ensure market access for developing countries.

Furthermore, there was also strong consensus that trade-environment debate was not North-South in nature. Instead, building comparability was of vital importance to developing and developed countries alike. There was, however, recognition that certain issues involving trade and environment policies can assume North-South dimensions. Several reasons underlined the particular nature of the developing-developed dimension, including (a) often widely differing environmental standards; (b) the potential capacity of environmental standards intentionally or unintentionally to hinder market access of developing country exports; and (c) the high percentage of natural resources in developing country exports.

In the context of these issues, many participants pointed out that developing countries were looking for fair trade, and special trading favours, and that "Trade, Not Aid" was regarded as pivotal to sustained trade and sustained development. Several participants pointed to the need for more work to be undertaken, related to domestically prohibited goods. Additionally, eco-dumping remained a potential problem for developing countries, and needed further study.

There was thus the recognition that conflicts can and have arisen, and many participants commented on the legal and conceptual frameworks which have been elaborated to avoid potential conflicts. Of particular relevance were three legal and other frameworks: (1) GATT rules, and the GATT Working Group on Trade and Environment; (2) Multilateral Environmental Agreements; and (3) UNCED Recommendations.

(1) GATT:

Working Group on Trade and Environment: Many participants pointed to the extremely worthwhile work undertaken by the GATT working group on trade and environment. Policy analysis undertaken since 1991 in the GATT working group has helped clarify, in a systematic and disciplined manner, a number of complex issues related to policy compatibility between trade and environment, in such areas as (1) legal compatibility between MEAs and GATT rules; (2) transparency of national environmental regulations; and (3) eco-labelling and eco-packaging.

(2) Multilateral Environmental Agreements:

Several multilateral environmental agreements (MEAs) such as CITES, the Montreal Protocol, and the Basel Convention employ trade measures as a necessary means to help achieve environmental goals. Such MEAs helped define certain legal linkages between trade and environment, since various MEAs use, as one environment minister pointed out, "trade measures as the very essence of their ability to reinforce environmental goals."

Several participants underlined the need for further work on MEAs: to determine, for example, under what conditions exemptions to GATT or other rules should be allowed.

(3) UNCED Recommendations:

There was very strong consensus that UNCED and in particular the Rio Principles and Agenda 21 represent the political context in which to address trade and environment. Foremost among the recommendations of UNCED of relevance to the trade-environment discussions was recognition of the need to build "an open, equitable, secure, non-discriminatory and predictable trading system as a benefit to all trading partners."

Serval participants pointed out that the UNCED recommendations were "indivisible": that environmental management needed to be regarded within the context of sustainable development, and that the particular economic and development challenges facing developing countries were of special relevance to the trade-environment debate.

Also within the context of UNCED, many participants pointed out that poverty and under-development are the most serious causes of environmental degradation in developing counties.

Some participants pointed to the need to work on more general principles, linking trade to sustainable development. The contribution of the International Institute of Sustainable Development's Principles on Trade and Sustainable Development, which was released in mid-February and circulated during the meeting, was welcomed.

Finally, there was general recognition of the special concerns of developing countries with regard to trade and environment. Developing countries are naturally concerned lest environmental policies act as non-tariff barriers to trade and become, in the words of one minister, "a screen for trade protection". This would decrease access to OECD markets, and inhibit development prospects. Furthermore, compliance costs for developing countries with the regulations and standards set by OECD countries might be excessively onerous.

In this context, several participants noted the need for greater transparency in national environmental standards, regulations and other measures. Related to scientific transparency is the need for national measures to have a firm scientific basis, more stringent environmental standards affecting production and process methods, as well as increased popularity of voluntary eco-labels. It was often difficult to distinguish between genuine and false environmental measures at the national level. Hence, the need to recognize the role of science. UNCTAD's role in this context was seen to be specially important.

(E) SPECIFIC POLICY ISSUES:

(1) Pricing Internalization:

There was broad agreement on the need for progress to be made on the so-called internalization of environmental externalities, as a means to adjust environmental underpricing. There was strong agreement among both developing and developed country participants that current models of economic development were, in the words of one participant, "fatally flawed." In order for sustainable development to gain a foothold on economic activities, it was vitally important that pricing internalization take place. It was also noted by virtually all participants that trade represents a fundamental means with which to build sustainable development.

Participants pointed to the work underway in this area, by OECD, UNEP, UNDP and elsewhere in addressing specific aspects of pricing internalization. Furthermore, UNCTAD's forthcoming Trade Development Board will discuss "The effect of the Internalization of External Costs on Sustainable Development."

Several participants pointed to the need for market prices based on the true costs of products. In this regard it was recognized that more work was needed to translate the Polluter Pays Principle into operation. At the same time, discussion also centered on the need for a Buyer Pays Principle.

(2) The Development Context:

There was strong consensus that a central concern to the trade-environment debate is the urgent need for developing countries to increase economic growth. Indeed, some delegates mentioned that improved market access might have a beneficial impact on the environment. In addition, some participants pointed to the need for industrialized countries to change consumption patterns, as indicated in Agenda 21.

From UNCED, there is a clear understanding of the linkage between underdevelopment and environmental degradation. In cases of deforestation, for example, it is usually the poorest who are also the most adversely affected.

Accordingly, there was strong consensus expressed that the most appropriate means to address environmental degradation in developing countries is not through trade or other measures, but rather as in keeping with Agenda 21 through the strengthening of national capacity. The international community cannot expect international environmental standards to be established, and then compliance by developing countries to take place, without recognition of the development differentials, and wide marginal compliance costs, which developing countries face in environmental management. In this context, there was mention of proposals for a compensation system, perhaps a Solidarity Fund, which could help developing countries improve their environments.

Furthermore, some participants noted the importance of specific national capacity-building priorities, including national environmental legislative capacity building, pricing internalization, environmental monitoring, environmental management, etc. Further, there was the need for strengthened, and more coherent environmental impact assessment tools; cost-benefit analysis tools; improved waste management and waste disposal capacities. Several participants welcomed the work underway by UNCTAD in education and training related to trade and the environment, as well that undertaken by UNDP.

An important area related to national capacity building entailed building environmental awareness. The country case studies being undertaken by UNCTAD were welcomed as an important contribution to building awareness and relevant information at the country level on specific issues related to trade and the environment.

(3) Environmental Standards:

There was general consensus that environmental standards were important in the trade-environment debate. More work was needed in clarifying how environmental standards were established both at the national, and international levels. Some participants note that work is also needed on domestically prohibited goods.

In establishing international environmental measures, there was strong consensus that the starting point must be international cooperation.

Differing Environmental Standards: Many participants pointed out the important economic, as well as environmental reasons, why different countries should often have different environmental standards. This was due in part, as noted during UNCED, to the widely differing marginal costs of environmental protection between developing and developed countries. Many developing countries face pressing development priorities, including poverty.

Accordingly, environmental standards, and more general interpretations of sustainable development, need to take account of the development context, as well as particular local conditions, traditions, management and conservation approaches, etc.

Many participants noted that developed countries should not, therefore, take advantage of widely differing environmental standards differentials, through trade measures.

One participant suggested that environmental technology standards should be included in the WTO.

(4) Role of Science:

Many participants suggested that more work needs to be done in defining the expectations and role of science, in trade-environment issues. Maximizing the available scientific information, in formats which gave clear policy choices and guidance, was felt by many to be crucial towards harmonizing trade and environment concerns.

In specific cases of disputes involving trade and environment, for example, there is a need for objective, timely and accurate scientific data to help clarify issues involved.

There was consensus on the need for accurate scientific data and updates, as a means of clarifying public misinformation about specific environmental management issues. Several participants pointed out, for example, that misinformation about environmental issues could have enormous adverse effects on international trade flows.

Several participants pointed to the need for the environmental community to be more disciplined and focused in the trade-environment debate. Ways to tighten coordination between trade and environment entailed (a) the establishment of internationally-accepted environmental targets, and (b) the negotiation of multilateral environmental agreements as an instrument to meet those international targets. There was consensus that developing countries needed to be accorded greater flexibility in meeting international standards, and that related issues including technology transfer and additional financing were directly related to international standards harmonization.

Discussions focused on the need for up-to-date, objective scientific information as a means to clarifying possible trade-environment disputes. It was noted that, already in the GATT, there was a special place for the ISO or CODEX in providing objective information related to harmonization.

It was suggested by several participants that UNEP had an important role to play in ensuring that environmental information, based on scientific observations, was included in the trade-environment debate.

While stressing the need for scientific input into the trade-environment debate, many participants also cautioned that there is no such thing as 100 percent scientific certainty, which is why the concept of the Precautionary Principle was so important in understanding environmental risk.

(5) Certification:

During the meeting, the Secretary General of UNCTAD outlined a joint UNCTAD/UNEP proposal, to begin work on towards criteria guidelines for the mutual recognition of national eco-labels. It was noted that already, at least 17 national eco-label programs are either launched or being developed, each with distinct evaluation criteria. It was suggested that in addition to UNCTAD and UNEP, several other international organizations including ISO, ILO and others had an important role to play in eco-labelling issues.

More work was needed to understand how eco-labels were conferred. Some participants pointed to the need for harmonization of environmental criteria for environmental labels. At the same time, one participant noted that eco-labels have been "used, mis-used and abused," and there was a need for greater transparency in how national labels were set. When looking at incremental cost models related to eco-labels in particular, and environmental standards in general, some participants suggested that the incremental cost model goes both ways: that developing countries often have higher sustainable development standards than industrialized countries, in such areas as per unit energy intensity, reliance on chemicals, etc.

Many participants pointed to the important role, and quickly changing aspects, of Life-Cycle Management and Life-Cycle Assessment. The development of new environmental management tools have potentially important trade aspects, which require further work at the international level.

Several participants pointed to the growing importance of information exchange, including prior informed consent models, in relation to eco-labels. Several participants expressed encouragement for the work underway by the ISO Technical Committee 207 in its work, which involved eco-labels.

(6) Technology Transfer and Additional Financing:

A number of participants pointed to the need for increased technology transfer, as well as additional financial resources, as a means to strengthen environmental protection. Several participants noted that both technology transfer, and additional financing, were of direct relevance to the broader challenges of integrating trade and environment.

Some participants pointed to the need for developing countries to receive financial compensation, and pointed to the recently-mooted proposal of an environmental "solidarity fund," with revenues generated form 0.25 percent of tariffs, as being a proposal worthy of further discussion.

One participant suggested that certain trade-environment issues related to additional financing should be addressed by the Global Environment Facility (GEF). Other organizations have an important role to play in encouraging technology transfer. These include: UNIDO, WIPO, the CSD, UNDP and others.

Another participant suggested that developing and developed countries need to work more closely together on issues related to environmental technologies. It was suggested that an international clearing house be established, to facilitate technology transfer.

(7) Policy Coordination at the National Level:

Many participants pointed to the need for trade and environmental decision-makers to work more closely together at the national level.

(F) INSTITUTIONAL COOPERATION:

(1) UNCTAD Work Programme on Trade and Environment:

Participants were strongly supportive of the work already underway by UNCTAD. There was recognition that UNCTAD had a very strong mandate from the General Assembly in the trade-environment field. Many participants expressed strong encouragement to the UNCTAD Secretariat for their continued work, particularly in supporting developing countries.

There was general consensus that UNCTAD is the proper place to discuss more general issues of trade and the environment.

(2) Environmental Forum:

Several participants pointed to the need for the creation of an informal, environmental forum which would facilitate a disciplined discussion of the environmental components of the trade-environment nexus.

There were suggestions by several participants that the trade-environment debate involved broader, and longer-term issues than specific trade rule compatibility issues. In this context, some of the environmental issues which would emerge were, strictly speaking, outside of the mandate of the GATT.

Some participants suggested that although the WTO was unable to address in detail issues related to scientifically-sound data, the WTO could play a key role in establishing the framework for discussions.

Several participants suggested that UNEP should play a lead role in putting forward objective scientific criteria of relevance to the trade-environment agenda. It was also suggested that UNEP had an important role to play, outside of the environmental sciences, in helping to avoid potential conflicts related to the MEAs; in strengthening its work on national environmental capacity building, as well as environmental economics in particular environmental valuation, and environmental impact assessment.

(3) UNCTAD/UNEP Cooperation:

Participants welcomed the cooperation between UNCTAD and UNEP. They appreciated the initiative of the two organizations which led to convening of this meeting, which was found very timely. Such cooperation was evidence, some suggested, of the multi-sectoral dimensions of sustainable development. Some participants suggested that future UNCTAD/UNEP informal sessions be held.

Several participants also pointed to the need to involve other relevant agencies, particularly UNDP in issues related to national capacity building, as well as UNIDO, the ILO, WHO and others.

(4) Commission on Sustainable Development:

Several participants pointed to the importance of the CSD, in coordinating the complex policy areas related to trade and the environment. The CSD should be the coordinating body, in the follow-up work on trade and environment. Several participants encouraged the CSD to make proper preparations, in order to address the trade-environment issue at its May 1994 meeting.

(5) GATT/WTO:

Many participants pointed to the central role that GATT should continue to play in clarifying trade-environment links. Participants welcomed the work of the GATT, and many underlined the leading role that the GATT working group, or possible creation of a GATT Committee on Trade and Environment, would play.

Several participants pointed to the important role the World Trade Organization (WTO) will play in the future in building sustainable development, through sustainable trade policies. Some suggested that the GATT/WTO Committee be strong enough, with a clearly defined mandate, to address trade and environment issues.

(G) CHAIRMAN'S INFORMAL SUMMARY:

The Chairman made an informal summary of the session's deliberations. Some of the points raised by the Chairman include.

(1) There was a pivotal role for the GATT/WTO in future work on trade and the environment.

(2) There was an important role for both UNEP and UNCTAD to play in such areas as: scientific clarification of issues; political and intellectual input; environmental law; pricing internalization and other areas.

(3) There was a general consensus that such informal meetings were useful, and should continue, after the Marrakech meeting. In this connection, there was consensus of the need to build an environmental forum, for a focused exchange of perspectives on the environmental aspects of trade-environment.

(4) A suggestion that UNCTAD and UNEP may wish to consider writing a paper jointly for the CSD.

(5) That future work needs to be undertaken within the context of Agenda 21; that specific issues, including capacity building, technology transfer, specific environmental management issues at the local and regional levels, need to be addressed.

(6) That trade and environment are both multi-disciplinary and multilateral, and more analytic work, and political consensus are needed.

INFORMATION NOTE ONLY: NOT AN OFFICIAL DOCUMENT
TRADE AND ENVIRONMENTS:
THE URUGUAY FINAL AGREEMENT AND FOLLOW-UP

Last week, ministers of international trade from 124 countries met in Marrakesh, to sign the GATT Uruguay Round text, and to launch the World Trade Organization (WTO).

As the most comprehensive multilateral trade accord ever struck, the Uruguay Agreement will result in the closer economic integration of countries. The lowering of tariffs, inclusion of services, introduction of new rules on subsidies, market access and intellectual property rights contained in the historic Agreement, are expected to contribute, each year, an additional $200-300 billion to the world economy.

Equally important, the rules of Agreement, as they are implemented over a ten-year period and as they are monitored and enforced by the WTO, with more clout than its GATT predecessor, promise to profoundly redraw national economic policies, by moving towards the international harmonization of domestic policies as a means to coordinate the common goal of global trade liberalization.

The Uruguay Agreement represents one of the most complex and inter-connected trade agreements ever reached. The purpose of this brief note is to provide an information update, as opposed to an analysis, of several important environmentally-related provisions in the Agreement, and to report on future work in the GATT/WTO related to the environment. It is intended neither to be exhaustive, nor to provide a commentary on the effectiveness of the scope or the environmental considerations contained in the WTO.

Agreement Preamble:

In the non-legally binding Preamble, governments recognized the importance of environmental protection and sustainable development. For the first time in a multilateral environmental agreement, governments recognized the links between trade and the environment, and their close relationship with developmental priorities:

"recognising that their relations in the field of trade and economic endeavour should be conducted with a view to raising standards of living, ensuring full employment and a large and steadily growing volume of real income while allowing for the optimal use of the world's resources in accordance with the objective of sustainable development, seeking both to protect and preserve the environment and enhance the means for doing so in a manner consistent with their respective needs and concerns at different levels of economic development;"

Within the Agreement itself, two Agreements are of particular importance in addressing environmental issues. The are: (i) the Agreement on Technical Barriers to Trade (TBT); and (ii) the Agreement on Sanitary and Phytosanitary Measures (SBS). In both cases, the text signed by ministers in Marrakesh will include much stricter provisions addressing national measures.

Technical Barriers to Trade:

The TBT Agreement deals with standards regulating products. This includes, for example, allowable pollution emissions from automobiles. The TBT Agreement aims to ensure that technical regulations, voluntary standards and conformity assessment procedures do not create technical barriers to trade.

The TBT Agreement recognises that each country should not be prevented form taking necessary measures to ensure that human, animal, plant life and the envrionment are protected. Accordingly, the Agreement ensures that each country has the right to establish its own level of environment protection, as it deems appropriate. However, the TBT encourages countries to move towards a harmonization of standards, based on international standards, if and when they are available. The TBT requires that "relevant international standards" be used as the foundation of national standards and regulations, except in such cases where international standards would either be ineffective, or inappropriate, to achieve the stated "legitimate" objective of the standard.

However, there is no obligation for individual countries to harmonize their national standards, regulations or other requirements with international levels.

In keeping with the core objectives of the GATT, the TBT Agreement of the WTO requires Parties to apply standards and regulations in a non-discriminatory manner, and to ensure that national regulations and standards are designed in such a manner so as to be no more restrictive, or "least trade restrictive," to achieve stated objectives.

The TBT Agreement also requires counties to take account of the risks associated with non-fulfillment of regulations. In assessing various risks, the Agreement makes reference to available scientific and technical information, as a means to measure if national regulations are legitimate, or, if they are used for protectionist purposes. An exporting country which challenges an importing country's national standards which do not conform to international standards bears, however, the burden of proof in showing that such standards are not legitimate.

In order to help clarify the question of "legitimate technical regulations related to products", regulations must be applied equally to domestic and imported products. In addition, risk associated with differing regulations must reflect the basic principle of "scientific" information.

The "scientific" clause in both in the TBT, and the SBS, raises some concern among environmentalists. The environmental sciences rarely, if ever, place 100 percent certainty as to potential risks associated with non-compliance of a specific regulation or standards. This issue of the role of science, its relationship to risk assessment and the Precautionary Principle, is of growing interest to both the trade and environmental community.[1]

The TBT Agreement deals, as noted, with technical regulations and standards concerning product characteristics, and their related process and production methods, if the production process directly affects the final characteristics of the final product. An example of a production method affecting the final characteristics of the product is "organically grown" foods, as defined by Codex, whereby the process by which the agricultural product is grown directly affects the characteristics of the product, even though product detection methods may have difficulty assessing the production methods. By contrast, an example of a production process method not reflected in the finished product is a steel product, in which differing pollution emission levels based on production methods is not reflected in the final steel product. (The "organic food" examples falls under the SBS rather than TBT. It is provided an example of product-related PPMs).

Agreement on Sanitary and Phytosanitary Measures (SBS):

The SBS Agreement deals with areas related to the protection of animal and health; the protection of wild flora and fauna; measures adopted by governments to ensure that human and animal food is safe from contaminants, toxins, disease-causing organisms, additives, and other areas. The SBS is of considerable importance to environmental policy-makers, because many environmental regulations and international standards are related to health standards.

The SPS Agreement is based on international measures: countries are required to follow international standards, such as, for food safety, standards outlined by the CODEX Alimentarius Commission.

At the same time, the WTO recognizes the right of each country to establish their own measures, in order to protect human, plant and animal health. However, where such national measures can result in trade restrictions, measures should be taken in accordance with scientific principles and scientific evidence. Many have already noted that the WTO references to "scientific principles," " necessity", including by extension environmental conservation and sustainability necessity, and the appropriate use of risk assessment, are unclear, and may both require clarification.

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[1] In order to help identify the role of science in trade policy, the UNEP Series on Environment and Trade will include: Science, Risk Analysis and Environmental Policy Decisions, which helps outlines a surprisingly unexplored area of the complex relationship between scientific data, risk assessment and environmental standards and regulations, and a more detailed discussion of the so-called "scientific justification" clause in trade accords, including the GATT/WTO.

In partial recognition of gaps in scientific data, and in the absence of clear or undisputed scientific data, governments are allowed, temporarily, to impose precautionary restrictions while looking for additional scientific information. Like the TBT, the SBS Agreement encourages countries to use international standards, although it does not require countries to change the level of national protection that they have deemed appropriate.

In allowing individual countries to adopt national standards, the WTO requires countries to "avoid arbitrary or unjustified distinctions in the levels it considers to be appropriate in different situations, if such distinctions result in discrimination or a disguised restriction to international trade. As Steve Charnovitz points out, the technical definition of discrimination in GATT means that any regulation or tax which means that foreign products are disadvantaged can be guilty of discrimination. [2]

The SBS Agreement also requires national regulation, standards, guidelines and recommendations to be applied in a manner that is non-discriminatory; that applies "least trade restrictive" measures to achieve appropriate levels of sanitary and phytosanitary levels, as deemed appropriate.

Both the TBT and SBS have transparency and notification requirements, so as to reduce possible trade barriers related to existing and amended technical and sanitary measures. In issues related to international standards, the WTO also recognizes the need for developing countries to have flexibility in deviating from international standards.

Environmental Subsidies:

The Uruguay Round Agreement allows for "non-actionable subsidies" (i.e. allowable national subsidies, to which countervail measures cannot be used) used to help existing plants adopt to new environmental requirements. The general provision is that countries are allowed to apply a 20 percent subsidy to the cost of environmental retrofitting, if the plant in question is at least two years old; if the retrofitting is a one-off move; and that the subsidy must be equally available to all firms capable of adopting new equipment and production methods.

Agreement on Trade-Related Intellectual Property:

In the Agreement on Trade-Related Intellectual Property Rights (TRIPS), stricter measures have been adopted for trade-related intellectual property rights. The Agreement excludes from patentability areas which are generally thought to be of growing importance to environmental protection. (One example is the exclusion of inventions form patentability, if exclusions are viewed as necessary to avoid prejudicing environmental quality or environmental protection. Within the context of biodiversity, governments are also allowed to exclude from the TRIPS agreement "plants and animals other than micro-organisms, and essentially biological processes for the production of plants and animals other than non-biological and microbiological processes." (Article 3, TRIPS Agreement).

In the Services Agreement, a general exception is included in measures necessary to protect human, animal and plant life: it is the same wording as Article XX in the GATT.

Future Action:

Despite the inclusion of some environmental considerations in the WTO, governments recognized that several critical areas require additional review and analysis. Such areas include such critical areas of production process methods "unrelated" to final product characteristics; the relationship between WTO Articles and a specific number of Multilateral Agreement including the Montreal Protocol, Basel Convention, CITES and others which contain trade measures as a means to achieve environmental goals; eco-labelling and eco-packaging; and other areas.

[2] For an excellent summary of the environmental provisions in the WTO, see Steve Charnovitz, "The World Trade Organization and Environmental Supervision" in International Environmental Reporter, 26 January 1994.

In recognizing the importance of the continuing work on trade and environment, governments agreed to establish a WTO Committee on Trade and Envrionment. The terms of reference for the newly established Committee were discussed at length, over several months, between the final round of negotiations in December 1993, and the signing of the Agreement on 15 April 1994.

The WTO Committee will address the following issues, in its two-year workplan:

(i) the relationship between provisions in the WTO, and Multilateral Environmental Agreements;

(ii) the link between environmental policies relevant to trade, and environmental measures which have significant trade effects, and the provisions of the multilateral trading system;

(iii) links between the WTO Agreement, and (a) market-based instruments intended for environmental goals; and (b) requirements for environmental purposes relating to products, including standards and technical regulations, packaging, labelling and recycling;

(iv) the issues of transparency of national environmental measures;

(v) links between dispute settlement procedures in the WTO, and multilateral environmental agreements;

(vi) the effects of environmental measures on market access, especially in relation to developing countries;

(vii) the issue of domestically prohibited goods.

In addition, the WTO decided that, within this workplan, "any relevant issue" may be raised.

Finally, as part of UNEP's work on environment and trade, a series of papers is being published over the next few months, to provide trade and envrionment decision makers with background information and analysis from an environmental perspective on various issues. In this regard, UNEP will be publishing papers on:

(i) the use of trade measures in multilateral envrionment agreements, as well as a more detailed analysis of trade measures in the Montreal Protocol, CITES and the Basel Convention;

(ii) the border effects of market-based instruments, with special emphasis on developing countries;

(iii) production process methods (in conjunction with UNCTAD); and,

(iv) dispute settlement procedures in multilateral environmental agreements, and other agreements.

For more information on UNEP's work, please contact: the Chief, Envrionment & Economics, UNEP, P.O. Box 30552, Nairobi, or Environment & Trade, UNEP, 15, Chemin des Anemones, CH-1219, Geneva, Switzerland.

AGENDA 21-BLUEPRINT OF SUSTAINABLE DEVELOPMENT FOR LEGISLATORS AND POLICY-MAKERS

BY

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(UNEP Statement at EAPPCED, 20-23 April 1994
Phuket, Thailand)

AGENDA 21-BLUEPRINT OF SUSTAINABLE DEVELOPMENT FOR LEGISLATORS AND POLICY-MAKERS (UNEP STATEMENT AT EAPPCED II, 20-23 APRIL 1994 PHUKET, THAILAND)

Excellencies, Distinguished Participants, Ladies and Gentlemen,

The participants of this Conference, Parliamentarians from the countries of East Asia and Pacific, gathered here at the kind invitation of the Government of Thailand to discuss how to translate the political decisions agreed in 1992 in Rio de Janeiro by the UN Conference on Environment and Development into national laws and policies as well as into global and regional international legal frameworks.

We live in a rapidly changing and dynamic world. The global agenda for peace and development together with such major events as the economic transition in Central and Eastern Europe, the peace process in the Middle East, the democratic process in South Africa and rapid industrialization in the countries of Asia and the Pacific region open new opportunities for economic growth and prosperity. Such opportunities, however, present new challenges to the envrionment. Nations are coming to accept that it is not possible to maintain a healthy economy without action to arrest environmental degradation. While economic development cannot be halted, it should go hand in hand with preserving the environment for present and future generations.

The Earth Summit, attended by over one hundred Heads of Government and State, marked a new beginning, recognizing rapid global change and giving political legitimacy to the concept of sustainable development. UNCED also recognized the role of law in facilitating sustainable development. Agenda 21, in its Chapter 39 states:

"The overall objective of the review and development of international environmental law should be to evaluate and to promote the efficacy of that law and to promote the integration of environment and development policies through effective international agreements or instruments taking into account both universal principles and the particular and differentiated needs and concerns of all countries."

With regard to national legislation, Agenda 21 in Chapter 8 states that "laws and regulations suited to country-specific conditions are among the most important instruments for transforming environment and development policies into action."

The Parliamentarians play a unique role on both national and international plane. They create national laws and help to form and legitimize national policies. They provide policy-makers with necessary legal mandates and serve as organic links between the citizens and the Governments. They provide the instrument of public control over the implementation of national laws and policies.

The key role of Parliamentarians in translating the paradigm of sustainable development into everyday life is widely recognized. Already during the preparation for UNCED the 87th Inter-Parliamentary conference adopted the Yaounde Declaration on Envrionment and Development where the legislators from around the world expressed their views on the main directions of UNCED and its prospects. The Declaration had been formally submitted to UNCED and played an important role in forming consensus on the main issues of integration of environment and development. The Declaration also called to review fully the UNCED outcome and follow-up at the Inter-Parliamentary Conference on Environment and Development in Brasilia in November 1992.

As requested by Yaounde Declaration, shortly after UNCED the parliamentary delegations from some 50 countries met in Brasilia for the Inter-Parliamentary Conference on Environment and Development. In the Final Document of the Conference, the Parliamentarians stressed the significance of UNCED in re-defining the notion of development "to establish it on the basis of rationality, solidarity and equity, as the way of guaranteeing the sustainability of adequate living conditions for all".

They also committed to carry the process further, to produce a clear response to the huge responsibilities generated by UNCED for all countries alike. They called for action by Parliaments and Parliamentarians, in particular,

- to ensure that States ratify or accede to regional and global treaties which relate to the protection of the environment and sustainable development;
- to promote national legislation conducive to sustainable development;
- to ensure effective involvement of all stakeholders, including individuals and organizations, in the decision-making on sustainable development.

The Parliaments and Parliamentarians of East Asia and Pacific region in implementing UNCED decisions operate under specific conditions and circumstances. The region obtains significant human potential and natural resources which are particularly important for viable economic development, but at the same time their use may raise complex social, health and environmental problems. The region experiences a rapid economic growth which boosts the living standard of people but might endanger the standards of environmental quality. The legislators should safeguard the national interests and sovereignty, but they also should ensure sound international and regional cooperation to achieve the goals of sustainable development.

Clearly realizing the complex tasks resulting form UNCED the legislators of the region constituted in 1993 the East Asia and Pacific Parliamentarians Conference on Environment and Development and adopted the Charter of the conference.

Amongst important provisions of the Charter I would single out the following:

- to achieve integration of envrionment and development amidst the rapid pace of change in the region;
- harmonize positions of individual countries of the region into a common policy for sustainable development; and
- in cooperation with national governments and through regional meetings, to consolidate the decision-making structures in order to adequately respond to the imperatives of sustainable development.

The sustainable development at a regional level is an integrative part of the relevant global process affecting the international system. The challenges of sustainable development in a changing world can be successfully met only jointly by States and the relevant international organizations.

With its special responsibilities in the field of envrionment and development, the United Nations system is continuously adapting to meet the needs of this rapidly changing world. The United Nations Secretary-General, in a recent visit to UNEP Headquarters in Nairobi stated:

"We are at the beginning of new era. We at the United Nations have to change if we want to cope with these new problems. Change is not easy. We have to change if we want to cope with this different reality."

UNEP, in its turn, is also changing to face this " different reality". Indeed, UNCED marked a milestone for UNEP with Agenda-21 providing new dimensions to UNEP's activities, placing its mandate within a context in which sustainable development is the key goal. UNEP's activities in the national legislative and institutional capacity-building as well as in the progressive development of international environmental law are all related to sustainable development and address pressing issues of today while at the same time reflecting a future orientation, providing a solid legal basis for securing a better world.

The concept of sustainable development, legitimized by UNCED, continues to evolve. Within its general framework, defined by the Brundtlaud eommission as "development which meets the needs of the present without compromising ability of future generations to meet their own needs", the content of sustainable development is still to be elaborated. The concept is based on some common fundamental principles but at the same time should be custom-made to reflect regional specificities, and also be country-specific. One of the important tasks for the Parliamentarians is to ensure a harmonious integration of the fundamental imperatives of sustainable development into the region and country-specific conditions.

Allow me, Mr. Chairman, to share some of the related ideas which are currently under consideration at UNEP.

Evidently the environmental and developmental problems should be considered in a holistic way taking fully into account their interrelatedness. The solutions to these problems are as much issues of politics and economics as they are issues of science. However, when taking sustainable development from the conceptual to the policy level a number of issues should be carefully considered.

One is the valuation of natural resources. Shifting from narrowly understood conservation patterns to sustainable development policies means to take fully into account the economic aspects of resource use. Natural resources are form of capital and without their valuation a sustainable economy cannot be built-up. Environmental costs and benefits, both short-and long-term, should be important considerations in political decisions together with relevant economic, social and developmental concerns.

The region of East Asia and Pacific is resource rich. However, these natural wealths can be easily depleted, if their economic and social value is not fully apprehended and included in the context of sustainable development. In this regard, it is appropriate to recall the recommendation by Brasilia Plan of Action "to establish an integrated decision-making process". Parliamentarians have a distinct role to play in ensuring that this recommendation is put into practice.

The second element to consider, Mr. Chairman, relates to incorporation of environmental factors in the decision-making process, specifically in those countries which obtain a large segment of rural economies. In counties where livelihoods are directly dependent on the productivity of fisheries, croplands, grasslands, and forests the link between deteriorating natural systems and living conditions is more direct than in modern industrial societies which are resource intensive. In determining national priorities a precise balance should be struck between economic goals, social values, and absorptive and regenerative capacities of the natural environment. Such trade-off will ensure that the quality of life will be maintained and not jeopardized in the long run.

Thirdly, even in resource rich countries the natural resources are finite and their continuous use requires increasing investments. The scarcity of resources combined with competing uses might create social tension. Thus, the effective management of natural resources should be based on institutional collaboration and sectorial integration to avoid mis-allocation and waste of financial, human and environmental resources.

Fourthly, understanding of socio-economic processes should be coupled with scientific understanding of ecosystem behaviour to correctly assess their complex interplay. On one side, interfaces in ecosystems may generate effects on linked socio-economic sectors. On the other hand, socio-economic changes may impact on ecological balance and human health. The poorest layers of the society are usually the most vulnerable and affected. Legal and institutional measures are to be designed to deal with the origins of the problems not its subsequent effects.

Finally, maintaining and enhancing environmental quality requires sound relationship between the state and the society. Social policies relating to demographic dynamics and consumption patterns need to be supported by social consensus and appropriate legal, institutional and procedural arrangements. Environmental indicators, assessments and targets provide the needed background for the new values, roles and responsibilities for adjusting interests among and within different groups.

In Rio, Governments agreed to certain principles for integrating environment and development. The major condition is the complementarity and synergy of these two processes. Not only environmental considerations would change development patterns. The environmental policies are also to be modified as appropriate.

Environmental policies should assist in solving social problems. Securing rights of indigenous people, women, youth and local communities in the management of natural resources will improve both environmental standards as well as standards of living.

Environmental polices should expand development options and raise living standards of the poor. Environmental policies lead to increased human welfare, for example, by promoting rational use and improved quality of water-in developing counties. Two-fifths of diseases and one-third of deaths are water quality related.

Environmental considerations should be an important driving force for greater empowerment and participation, Decisions that affect the local community should be taken with appropriate public participation and people must have access to relevant information and process. The legislators are expected to work out and suggest modalities for sharing responsibilities with the major groups of the society.

Mr. Chairman, I am addressing the assembly of law-makers. So it is logical to turn now to the legal and institutional aspects of sustainable development.

UNEP being the principal UN body in the field of envrionment received from UNCED a strengthened and expanded mandate in the field of environmental law. Environmental law in its turn should be viewed today in a wider context of sustainable development.

It is not by mere chance that UNCED not only requested UNEP to concentrate on "further development of international environmental law" but also called upon States for "further development of international law on sustainable development".

To respond effectively to this mandate UNEP is evolving into a centre of excellence which will focus on promoting credible science, mobilization of social consensus and facilitating effective public policy. Within this context the law is playing an increasingly important role.

Since its creation the UNEP activities in environmental law have increasingly aimed at integration of environment and developments, both catalyzing international legal regimes and contributing to build national legislative and institutional capacities. They have been assisting States in establishing effective international legal frameworks in such areas as ozone layer protection, control of hazardous waste and toxic chemicals, conservation and sustainable use of the planet's biological diversity, protection of the marine environment from land-based activities and protection of the global climate. All these activities are directly related to the process of industrial development or its consequences.

However, to better understand the tasks related to further development of international law on sustainable development it is necessary to explore its main characteristics.

In light of UNEP experience, three major elements which distinguish the international law on sustainable development can be singled out.

The most important feature is the provision of legal and regulatory frameworks for promoting integration of environmental and developmental policies.

1) Environmental regimes are no longer limited to the physical parameters of the environment. They increasingly take into consideration socio-economic aspects of a particular issue. Environmental instruments are focusing more and more on sustainable development. UNEP has and will continue to contribute to the development of such regimes integrating environmental and developmental concerns. The new focus on the complementarity of environmental conventions and socio-economic instruments to ensure viable interface of natural resource conservation and economic activities has also led UNEP to address the issue of compatibility between environmental and socio-economic regimes, in particular, in the trade and environment area.

2) Another characteristic as highlighted by UNCED is the role of partnerships in achieving the goal of sustainable development. The global, interdependent and intergenerational nature of environmental and developmental problems requires the law to ensure the widest possible partnership of all nations and peoples in addressing shared objectives of sustainable development. All States, rich or poor, developed or developing, North or South share common, but differentiated responsibilities. Each State acts according to its respective capacity and capability. Partnerships will facilitate coordinated implementation by developed, developing and other countries of their obligations under international environmental instruments.

The third feature is the unique nature of implementation of international law in the field of sustainable development by introducing innovative means and mechanisms of implementations. Contemporary environmental regimes are not only setting ambitious goals but also provide supportive means of their achievement through, for example, financial mechanisms and resources, technology transfer and capacity building. These regimes more and more often complement prohibitive and restrictive means by a wider use of stimuli and incentives. Today, environmental instruments aim primarily at prevention rather than resolution of conflicts. More attention is given to institutionalizing practical and effective reporting, monitoring and assessment systems and establishing multilateral consultative processes for the resolution of questions regarding the implementation of a particular convention.

Allow me, Mr. Chairman, to briefly address the issue of endogenous capacity-building.

Agenda 21 emphasized the need to build endogenous capacity for sustainable development. This task is envisaged, first and foremost, with regard to developing countries, National environmental legislation and related institutions are conceived as critical elements in the building of overall capacity to deal with the challenges of sustainable development.

Chapter 8 of Agenda 21 stresses that "laws and regulations suited to country-specific conditions are among the most important instruments for transforming environment and development policies into action". (Ch. 8.13). It provides clear direction for countries embarking upon institution building and environmental law reform programmes to provide a legal framework for sustainable development by stating that "it is essential to develop and implement integrated, enforceable and effective laws and regulations that are based upon sound social, ecological, economic and scientific principles" (Ch. 8, 14).

These references illustrate that the tasks in creating national legal and institutional frameworks for sustainable development are enormous. Individual countries, and in particular developing countries, cannot fulfill these tasks alone. Indeed, Agenda 21 further requires competent intergovernmental and non-governmental organizations to provide governments and legislators with an integrated programme of "environment and development law (sustainable development law) services" (Ch. 8, 19).

UNEP with its integrated expertise and vast experience is fully equipped to respond to this mandate.

In 1993 the UNEP Governing Council at its 17th session requested the Executive Director to implement measures contributing to capacity-building in the field of environmental law. Activities for the development of national environmental legislation and institutions are being undertaken or are contemplated in various regions. In the region of Asia and Pacific, Kiribati and Tuvalu are currently the addressees of UNEP action.

Another activity in the region catalyzed and supported by UNEP is the Regional Workshop for countries with rapidly-growing economies in Asia. The Workshop, jointly organized by UNEP and the National Environmental Protection Agency of China, will target the key officials in Asian countries dealing with industrial compliance with environmental law. The Workshop is scheduled for October-November 1994 and will be held in Bejing, China.

So far, UNEP has assisted over 70 countries in building their legislative and institutional capacities, However, the expected results have not been achieved in every case.

In order to secure tangible results from its technical assistance programme, UNEP has initiated measures which include: establishment of reliable criteria for the selection of project countries; assessment of clients' needs for capacity-building and the commitment to take necessary action; and the elaboration of a holistic programme for each project-country encompassing the development of legislative and institutional machinery as well as the training of human resources.

Based on this new methodology UNEP has recently started, jointly with UNDP and funded by the Dutch Government, a project for the development of environmental legislation and institutions in selected African countries. The project employs a holistic approach by linking its activities to the on-going bilateral and unilateral assistance programmes, and seeks to develop integrated regulatory regions for sustainable development.

This new methodology, if proven effective, can be replicated in other regions, like Asia and the Pacific, subject to the availability of necessary funds.

In building endogenous capacities, an important pre-requisite for success is effective interaction and cooperation with the Parliamentarians of the country and region. Countries cannot anymore afford that new laws remain in the books and new institutional arrangements are not put into practice. The unique role of the Parliamentarians calls upon them to monitor and guide the whole process of capacity-building, for elaboration and adoption of legal and institutional measures, to their complete and effective enforcement. It is not less important to exercise the follow-up control to monitor long-term and side effects and to ensure necessary revisions of the decisions made. UNEP, on its part, obtains necessary experience and expertise to assist the legislators in this noble work.

Yet another important task for Parliamentarians is to ensure national implementation of international agreements in the field of envrionment and development. The recently adopted Conventions on Biological Diversity esity and Climate Change were signed during the UNCED by an unprecedented number of States. These instruments have a clear sustainable development content. Both Conventions have acquired the necessary ratifications to enter into force. However, their effective response to the challenges of sustainable development depends significantly on wide acceptance and participation. These instruments are now in the hands of legislators in respective countries and the Parliamentarians should, in their wisdom, take the necessary steps to ensure that their countries participate in these regimes. It is to be noted that international agreements are effective and achieve their goals only when they are widely adhered to and consistently implemented through national legislation and institutions.

Parliamentarians should also promote the elaboration of new international regimes for sustainable development. New legal frameworks in such areas as international trade in chemicals and protection of the marine environment form land-based activities are being elaborated under UNEP auspices. These regimes are of particular interest to the region of Asia and the Pacific, since they reflect the specificities of economic development and geographical conditions in Asia and the Pacific. It is to be noted that UNEP has already an established practice of providing financial assistance to ensure the participation of developing States in UNEP-sponsored negotiations. This is a practical response to Agenda 21 requirements "to promote and support the effective participation of all countries concerned, in particular developing countries, in the negotiation, implementation, review and performance of international agreements or instruments" (Ch. 39, 3, c).

In conclusion, let me, Mr. Chairman, commend the Government of Thailand for hosting this important meeting which will undoubtedly contribute to the sustainable development both in the region of Asia and the Pacific and worldwide. I would also like to express my appreciation to our hosts for providing this wonderful setting for the meeting.

THANK YOU.


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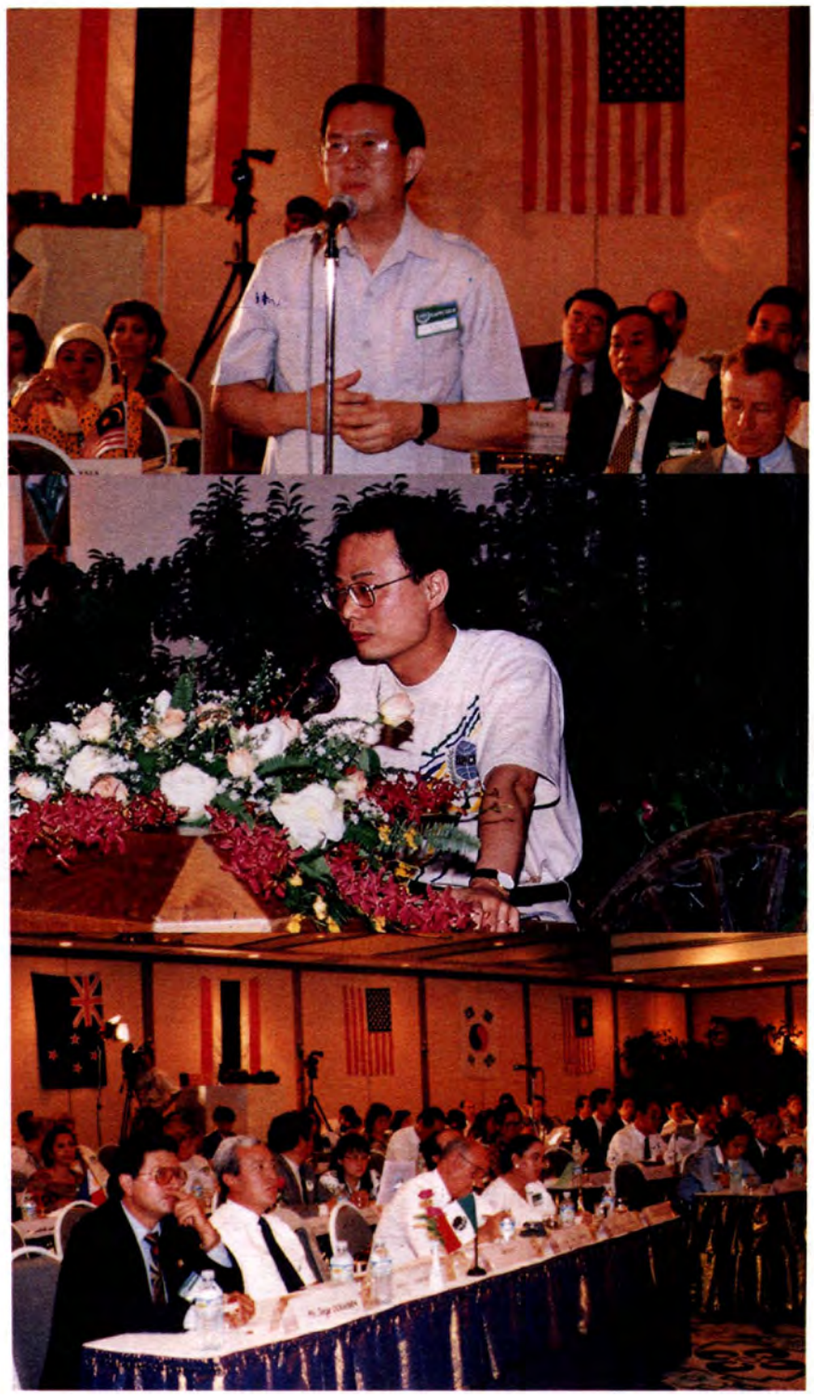


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FAREWELL ADDRESS
THE HONORABLE BOONCHU ROJANASTIEN
DEPUTY PRIME MINISTER OF THAILAND
MEMBER OF THE THAILAND HOUSE OF REPRESENTATIVES

Delivered at the
Closing Ceremony
Second East Asia and Pacific Parliamentarians'
Conference on Environment and Development

Phuket, Thailand
April 23, 1994

Most distinguished guests, ladies and gentlemen, it gives me pleasure to address you.

I have put environmental issues at the top of my priority Agenda. Your deliberations over the last few days and the conclusions your have reached are of wide consequence not only to the region but to the entire world. Your are forging ahead, forging a new direction that will have immeasurable implications for our children and grandchildren in many future generations.

"Development", as you know, is a seductive word. Seen positively, development means an end to poverty, a narrowing of the gap between the rich and the poor, and the birth of a new era with more opportunity for all. But more than that, for the developing countries, it means membership as equals in the society of nations. I think that is what we all want.

The development plan that is driven by greed and self interest carries within it the seeds of its own destruction. That, unfortunately, is what most of us who belong to newly developing nations are witnessing.

That you are here as representatives of your own governments and nongovernmental organizations testifies to the fact that your concern for the environment is as great as mine. I thank you for that.

Together, with the firm will and determination that your have demonstrated toward this conference, we can do much to correct the errors of the past and lay down new environmentally correct ground rules to protect our resources far into the future. Your have already come face to face with this new direction and have adopted a new set of priorities that are more long term.

Forget the interest gratification of the "quick buck" and instead focus your country's efforts on a balanced strategy that involves no environmental sacrifices and degradation.

I know it is difficult to make the world better without any risk to the envrionment. We have to try. I believe this conference has taken firm steps in this direction.

Unfortunately, as I have mentioned earlier, the goals of economic development on one hand and environmental protection on the other have generally been viewed as conflicting. It has usually been economic development that has won out at a high cost to the envrionment. This is no longer a current way of thinking.

I believe it is common knowledge that a quality economy and a quality envrionment are mutually interdependent. The two must be in harmony.

During this conference, you as parliamentarians have learned the importance of working together, of putting environmental principles ahead of political values.

Now it is up to all of us to take this message home to our legislators and constituencies. It is equally critical that we as concerned parliamentarians cooperate with each other in forging new approaches to education, organization, and communication, This I believe we have all agreed to.

So, let me bring this conference to a close. On behalf of the government of Thailand, I extend my deepest appreciation to those of you who have played a key role in making this conference a success on the lovely Island of Phuket.

Thank you to the House Standing Committee on Environment, to GLOBE International, to the United Nations Envrionment Programme, to the Asia Foundation, to local supporting corporate sponsors who are sharing their profits with nature, to the government and people of Phuket who warmly welcomed this conference and have demonstrated their ability to conserve the resources of this Island, to the delegates and participants who shared your knowledge and ideas to help make this conference one of the most successful ever.

I wish you happiness and good health. May the people of your countries enjoy a good quality of life, a healthful environment, and a quality economy.

I hereby declare the Second East Asia and Pacific Parliamentarians' Conference on Environment and Development to be adjourned.

[SECTION IV]

Introduction To Country Reports

Introduction To Country Reports

The following are brief outlines of some of the subject matters contained in the country reports which are reproduced in full in the following section, Section V.

AUSTRALIA. "The Environmental Management Industry in Australia," by Mr. John Bradford, M.P.

Discusses the importance of the environmental management industry in "marrying" environment and development, and the fact that this is an emerging industry. In Australia, this was recognized as a specific sector in the late 1980's. Discusses market opportunities and the importance of the environmental industry to tourism.

CANADA. "Update on Canada's Progress on Agenda 21 Items," by Peter Marriott, Advisor, Environment and Natural Resources, Canadian Embassy, Bangkok.

Discusses the main features of Canada's response to Agenda 21 at all levels of government, and through public-private cooperation. Discusses Canada's initial self-assessment of its actions, its priorities, and some observations on the environmental problematic.

PEOPLE'S REPUBLIC OF CHINA. "Remarks on Regional Activities' Contributions to Global Climate Change," by the Chinese Delegation, presented by Mr. Yang Ji Ke.

Discusses their concerns about global climate change, their actions to date, and their feelings about the need for international cooperation to protect the global climate.

PEOPLE'S REPUBLIC OF CHINA. "Remarks," by Ambassador Mr. Wang Shu, Member of the People's Congress.

Discusses the importance and challenge of environment and development, and relationships between developed and developing countries. Discusses China's actions to promote environmental protection.

JAPAN. "Country Report," by Ms. Akiko Domoto, Member, House of Councillors, Japanese Diet, and President of GLOBE Japan.

Discusses Japan's environmental background and some effective responses to problems; a shift in Japan's environmental policies toward biodiversity; Japan's actions regarding its National Report, including climate change, trade and environment, and biodiversity. She notes the importance of the upcoming Cairo Conference on Population and Development. She advocates international cooperation by parliamentarians on environment and development.

KOREA. "Country Report," by Hon. Chang Rim KU, Member of the National Assembly.

Describes a variety of actions taken by the Korean government to address environmental problems. Discusses the importance of international cooperation. Discusses the differing circumstances of developing and developed countries.

KOREA. "Country Report," by Hon. Sil PARK, Member of the National Assembly.

Describes actions taken by the National Assembly to protect the environment, the importance of international cooperation, and examples of problems requiring international cooperation. States that solutions must be found to the concern that environmental protection might be used as an excuse for trade protectionism. Discusses relative circumstances and responsibilities of developed and developing countries, and the important roles of parliamentarians and nongovernmental organizations.

MALAYSIA. "Country Report," by Hon.Siti Zainab Abu Bakar, Member of Parliament.

Describes the Malaysia Plan and a variety of actions taken by Malaysia pertaining to the environment. Discuses Malaysia's strategies for implementing Agenda 21 sustainable development goals and its cooperative efforts regarding global climate change and biodiversity.

MEXICO. "Country Report," (in Spanish) by Senator Maria Elena Chapa Hernandez.

Describes actions taken by Mexico to protect the environment, including: national laws; establishment of protected areas; and treaties and agreements with neighboring countries. Outlines their general perspectives on these issues. Discusses the importance of international cooperation.

MEXICO. "Global Parliamentarians On Habitat," by Senator Miguel Aleman Velasco.

Describes this organization and provides information about its conference which will be held in Cancun, Mexico on October 5-9, 1994. (In English)

MONGOLIA. "Country Report," by Mr. M. Mendbilg, Member of the State Great Hural (Parliament).

Describes their long history of legislative acts to protct nature; current actions being taken while the country transforms to a market economy; their perspectives on balancing trade and environment; their efforts to implement Agenda 21; and the importance of international cooperation.

NEW ZEALAND. "Progress Towards Achieving Sustainable Development in New Zealand: An Overview, " by Ms. Christine Fletcher, Member of Parliament.

Describes New Zealand's achievements in sustainable management of its natural and physical resources within the context of its economic, social and political environment. Describes New Zealand's ratification of various international treaties and agreements and their active participation in international cooperation efforts. Refers to important actions by indigenous people.

PHILIPPINES. "Biodiversity," by Senator Heherson T. Alvarez.

Discusses the fundamental importance of biodiversity and of efforts to protect it. Outlines the Philippines strategy for biological diversity conservation. Stresses the importance of biodiversity to the quality of human life and the importance of parliamentarians' roles.

PHILIPPINES. "Recommending a Ministerial Level conference of Asia Pacific Leaders to draft a Regional Climate Change Action Agenda 21," by Senator Heherson T. Alvarez.

Describes a region-wide study, financed by the Asian Development Bank, to develop country studies and national response options to climate change in eight Asian nations. Summarizes findings concerning potential "horror scenarios" which make it imperative there be a decisive and collective effort by parliamentarians to develop an action agenda.

RUSSIAN FEDERATION. "Actual Problems of Environmental Protection in the Pacific Region," by Prof. Dr. Michael Lemeshev, Member of the State Duma.

Discusses the Russian Federation's actions and perspectives regarding disposal of radioactive wastes into the marine environment.

RUSSIAN FEDERATION. "Global Environmental Problems and New Horizons of Social Regional Politics," by Prof. Valery N. Rastorguev, Deputy of Upper Chamber (Council of Federation) of the Russian Parliament.

Discusses actions being taken in Russia, particularly regarding water resources. Discusses the importance of international cooperation and of integrating environmental policies with social, economic, and cultural values.

THAILAND. "Country Report," by Dr. Art-ong Junsai Na Ayudhaya, Member of the House of Representatives.

Discusses overpopulation as the main cause of most environmental problems. Outlines Thailand's activity regarding economic development, biological diversity, climatic change, its five major areas of environmental management policy, reorganization of parliamentary committees to better address environment issues, support of international conventions, and the important roles of nongovernmental organizations. Attaches a report on "Current Status of Environmental Pollution in Thailand," by Debhanom Muangman, M.D., Dr. P.H. (Harvard), which is included in the Appendix.

UNITED STATES OF AMERICA. "Country Report," by Ms. Karen Fraser, Washington State Senator.

Outlines U.S. actions following the Rio Conference. Discusses several trends in the U.S. pertaining to natural resource management policy. Indentifies some resource depletion problems, including the recent prohibition of salmon fishing in the Pacific Northwest. Discusses several governmental structure issues and trends.

VIETNAM. "Country Report," by Prof. Vu Dinh Cu, Member of the National Assembly.

Discusses environmental problems and their priorities in addressing them, including legislative instruments, biodiversity, climate change and natural catastrophes, sustainable industrialization, and the need for regional cooperation. Presents formulas to describe problems and approaches to solutions.

VIETNAM. "Country Report," by Mr. Vu Minh Mao, Member of the National Assembly.

Describes environmental problems in Vietnam, and the variety of measures being taken to address them. Describes laws enacted and their National Plan for Environment and Sustainable Development. Advocates broadening international cooperation, especially regionally.

EAPPCED II

[SECTION V]

Full Texts Of Country Reports

THE ENVIRONMENT MANAGEMENT INDUSTRY IN AUSTRALIA

A PAPER

By

JOHN BRADFORD, MP

The Environment Management Industry in Australia

A PAPER BY JOHN BRADFORD, MP

To the East Asia and Pacific Parliamentarians' Conference on Environment and Development, Phuket, 21-25 April 1994

It has long been the perception that the concept of "development" was an inherent threat to our natural environment. This Conference is all about finding ways to balance the interests of the two and creating a "happy marriage", if you like, so that development can continue at the pace society demands with the utimate regard for the environmental concerns we have increasingly become aware of in recent times.

If we are to consider development and the environment as a happy marriage, then the Environment Management Industry must surely be the priest or celebrant that officiates over the marriage that binds them together.

The Environment Management Industry is providing ways for development to continue to occur, with the minimum effect on our natural environment, or in some cases, to the betterment of the environment.

This Industry is comprised of those organisations that supply goods and services aimed at the prevention, reduction or elimination of pollution that could have a harmful effect on the environment. Activities that can come under this definition include;

- water and wastewater treatment
- solid waste handling
- recycling
- site remediation
- cleaner production technologies

As the public demand for companies to adopt "green policies" continues to rise in Australia, businesses are turning more and more to the environment management industry to provide them with ways of helping improve the activities, systems and function of that company, as they impact on the environment.

Today's concern for the environment, or more precisely, management of human impact upon the natural environment, is seen increasingly as a job generation opportunity in itself. This is particularly important in times of high unemployment, such as that being experienced in Australia at the present time.

Shortly after taking office, President Clinton called on American companies to "take advantage of the enormous business opportunities around the world for new environmental technologies that protect the Earth and increase profits".

The Australian Environment Industry is an emerging industry that was recognised as a specific sector only in the late 1980's. Before that time the major identifiable components of the industry were the water and wastewater services provided by major government utilities such as the Sydney Sewage and Drainage Water Board.

The industry now consists of some 1,000 organisations and can basically be broken up into three distinct components: the commercial sector, government authorities, and research organisations.

Australia possesses leading and innovative environment management capabilities in disciplines as diverse as agriculture, chemical manufacture, mining, water and wasterwater treatment, solid waste disposal, and monitoring of ambient conditions.

At the global level, it is a large industry. The International market is currently estimated at between US$200 billion and US$300 billion per year. This demand is anticipated to increase by between 50 and 100% by the year 2000.

Currently the largest markets for environment management are the United States and Europe, both of which have strong, established and aggressive environment management Industries.

However, there is a huge and growing demand for environment services in the Asia region owing to rapidly increasing industrialisation and urbanisation, and a legacy of poor environment management. Australia is well placed technically and geographically to participate in Asian markets and we are already active in a number of countries including Indonesia, Thailand, China and Taiwan.

Supporting Australia's entry into the international market is a relatively large domestic market currently between $2 billion and $3 billion per year (still less than 1% of GDP), with an expected growth rate of 4.5% per year.

The Environment Management Industry has been targeted by the Australian government as an industry where, prima facie, Australia should be competitive. On this basis, the Industry was the focus of one of the first Industry Commission Enquiries, designed to explore growth opportunities.

That IC Inquiry Report, presented to the Government in September last year, was welcomed and its recommendations are due to be addressed in the context of the next Government Industry Statement.

The Report acknowledged good prospects for growth and exports and developed a number of recommendations for governments based on impediments in the regulatory, purchasing and pricing environment.

Spearheading the growth and direction of our industry is the Environment Management Industry Association of Australia (EMIAA). When he launched the EMIAA in May 1991, the then Prime Minister Bob Hawke said he hoped it would serve as "the focal point for the interaction of those who face environmental problems and those who possess the skills, technologies or products to solve them".

EMIAA's contribution so far has been to make sure the focal point is seen in regional terms and to advocate practical approaches to environmental issues and public-private sector collaboration.

I want to focus for the remainder of my paper on an area that the EMIAA itself has focused on this month, with its first international conference, which was held on the 13 & 14th April. "Tourism Ecodollars" is the conference title and I am very pleased that the EMIAA has chosen to focus on tourism, which is Australia's largest source of foreign exchange earnings.

The EMIAA wisely recognises that the environment management industry does not exist in isolation. Essentially, as an industry it provides goods and services to other sectors and over the coming years the EMIAA plans to conduct a number of international conferences focusing on their principal client sectors. Tourism, of course, is one of these.

I'd like to point out that tourism is an industry that I have a lot to do with. My electorate of McPherson is based on the Gold Coast, Australia's tourist capital, We have some of the world's best beaches and my electorate also takes in sections of the pristine hinterland and national parks that have become known as the "green behind the gold". It is, in every sense, a tourists' paradise.

There has been, especially in recent times, a growing recognition of the need to preserve the attractive natural environment we have on the Gold Coast, which is of course what attracts most tourists. I'd like to mention, briefly, the important role that the local authorities on the Coast have to play in the planning and environmental aspects of our tourism industry. I know that both the Gold Coast City Council and the Albert Shire Council, the two authorities servicing the Gold Coast, have become more and more aware of the need for very careful planning, with a view to preserving our environment and ultimately our tourism industry.

The EMIAA believes that we can build an environmentally sustainable tourism industry and, moreover, we can show our neighbouring countries in the Asia-Pacific region how to do it properly.

The President of the World travel and Tourism Council, Mr. Geoffrey Lipman, agrees. He "firmly believes that the world's largest industry has a responsibility to maintain the cultural, natural and historical heritage of every country."

Mr. Lopman says that "Australia is a good example of where this responsibility is being taken seriously by both the private and public sectors". He goes further to say Australia "could well be used as a best practice example to the rest of the world".

The EMIAA has no doubt only enhanced that reputation with their Tourism Ecodollars conference. Developing environmentally sustainable business opportunities in tourism; harnessing technical expertise, management strategies and technologies to ensure maximum profitability and minimum environmental impact; promoting Australian environment management solutions to regional tourism challenges; were the themes of Tourism Ecodollars.

There is certainly not time enough to even touch on the many ways in which the Environment Management Industry in Australia is growing and expanding. I have only scratched the surface to make this Conference aware of the high calibre of the industry in Australia and to reflect on the potential there is for the growth of this industry in the Asia region.

The Australian Environment Management Industry can help all other countries in this region to help themselves protect their environment as their economies continue to grow and expand.

Tourism is perhaps the most obvious industry to use as an example because, to a large extent, it depends on finding a balance between development and the environment. I was recently part of an Australian Parliamentary delegation to Nepal and we visited Kathmandu where, sadly, both the city and the tourism industry is choking with pollution. It is a prime example that we must be vigilant to protect our tourism industry–and that means protecting our environment.

Of course, everything we as a society do has an impact on our environment, so just about every industry can contribute to and derive benefit from better environment management policies.

The Australian Environment Management industry, I'm pleased to say, is leading the way in the Asian region in cultivating a successful and long term marriage between development and the environment.

UPDATE ON CANADA'S PROGRESS ON AGENDA 21 ITEMS

PETER MARRIOTT

Advisor, Environment and Natural Resources
CIDA-Bangkok

An Update on Canada's Progress on Agenda 21 Items

1.0 Introduction

The United Nations Conference on Environment and Development (UNCED), held in Rio de Janiero in June, 1992, placed the global community on the road to sustainable development. The Government of Canada, in maintaining the momentum following Rio, is currently evaluating its performance with respect to Canada's UNCED-related commitments.

On December 17, 1992, Environment Canada formed a coordination unit, the UNCED Task Group, to provide a focal point for the federal government's domestic UNCED follow-up. Since March 1993, one of the Group's primary functions has been to conduct a comprehensive assessment of federal government activities related to Agenda 21 and other UNCED products.

Agenda 21 is a comprehensive global action plan to which Canada's federal government has made a political commitment to implement as part of the global community. Agenda 21 presents thousands of ways to address with the critical problems that confront humanity. These problems include: worsening poverty, hunger, ill health, illiteracy, and the continuing deterioration of the ecosystems on which all life and human prosperity depend.

2.0 Canada's Inplementation of Agenda 21.

The main features of Canada's response to Agenda 21 are listed as follows:

- Canada is committed to help make sustainable development a practical reality and to continue to make a responsible contribution to associated international efforts.

- As reflected in Canada's first report to the U.N. Commission on Sustainable Development (released during the week of February 28, 1994), Canadians throughout all levels and sectors of Canadian society are taking action that responds to Agenda 21.

- Canada's domestic response to the U.N. Conference on Environment and Development can be divided into three complementary layers of activity: the national, federal, provincial and territorial (includes municipal) areas of concern.

National

- At the national level, Canada's approach for follow-up on Agenda 21 issues is based on the belief that all sectors (public and private) must work together to make sustainable development a reality. This is reflected in Canada's national framework for sustainable development strategies and a national action plan that each sector of society can use to chart a course to sustainability.

Federal, Provincial and Territorial

- The federal government is working through the Canadian Council of Ministers of the Environment (comprised of the provincial and territorial ministers of Environment) to address national and international environmental issues of concern to Canadians, including the harmonization of sustainable development strategies and activities among the different levels of government.

- The Council has established partnerships within government and with other stakeholders (e.g., industries, professional, other private sector) to promote sustainable development and move Canada towards an integrated environmental management regime.

Federal

- Sustainable development was at the heart of the federal government's recent election platform (federal election late, 1994). The Government has indicated that it will be guided by a vision of society that is less wasteful of its natural and human resources and places greater value on both the economic and environmental welfare of present and future generations. This vision is consistent with the goals and objectives of Agenda 21.

- Internally, Environment Canada is leading an interdepartmental exercise to survey and review all federal activities which relate to Agenda 21. The exercise has resulted in the construction of an information system that allows the Government to assess its responses to Agenda 21 issues and to identify those areas requiring additional work.

Next Steps

- The federal government will continue to support multi-sectoral efforts to implement sustainable development and continue to foster further cooperation where possible.

- Canada supports a leadership role for the U.N. Commission on Sustainable Development and its evolution as a competent intergovernmental forum to monitor and review progress in the implementation of Agenda 21. In terms of the evolution of the Commission, Canada would like to see it become more results-oriented with direct political involvement in setting direction and priorities. This type of evolution will be a basic part of the Canadian position at the second session of the Commission (to be held May 16-June 3, 1994).

3.0 An Initial Assessment of Canada's Federal Actions Towards Agenda 21 Goals.

The assessment of Canada's federal actions related to Agenda 21 goals and issues, involved a survey of 20 federal departments which provided information on their progress with respect to their short and long-term plans, the actions of their partners, target audiences, Canada's Green Plan and Agenda 21 linkages.

Canada's UNCED Task Group has developed a computerized information system to catalogue and track federal responses to the commitments laid out in Agenda 21. This system is now available for use by Canada's interdepartmental community.

Currently, the information system contains all of Agenda 21. As of January 1994, it also contains 364 federal programs that respond to one or more of the sustainable development activities suggested in Agenda 21.

Canada's UNCED Task Group has used the system to review federal performance with respect to eight chapters of Agenda 21:

Chapter 4	Changing Consumption Patterns,
Chapter 6	Protection and Promoting of Human Health,
Chapter 7	Promoting Sustainable Human Settlement Development,
Chapter 14	Promoting Sustainable Agriculture and Rural Development,
Chapter 17	Protection of the Oceans and Rational Use and Development of their Living Marine Resources,
Chapter 26	Recognizing and Strengthening the Role of Indigenous Peoples and their Communities,
Chapter 36	Promoting Education, Public Awareness and Training, and
Chapter 38	International Institutional Arrangements.

These Agenda 21 chapters were chosen because they reflect Canadian priorities established in the run-up to Rio. As well, each represents one of the clusters of issues to be examined by the U.N. Centre for Sustainable Development over the next five years.

The results of this preliminary self assessment, as incomplete as they are, show that Canada's federal government is active in all of the areas touched by Agenda 21 and that there is a clear federal focus on activities to address the following eleven priority action areas identified under Agenda 21:

- poverty;
- patterns of consumption;
- land resources;
- agriculture;
- bio-diversity;
- indigenous peoples;
- non-government organization;
- local authorities;
- the workplace-workers;
- business and industry; and
- science and technology.

It must be emphasized that most of the 40 action areas, identified under Agenda 21, are addressed also by provinces and municipalities and that many of the action areas lie more in the jurisdiction of provinces.

Finally, it must be emphasized that most of the action areas under Agenda 21 are very much affected by the activities of the private and industrial sectors. Because a national approach requires that all sectors of society, public and private, work together in concert, Canada has prepared Canada's Green Plan and a national framework for sustainable development strategies.

4.0 Some Observations on the Environmental Problematic

It is clear, and becoming clearer, that environmental problems are largely coordination problems–coordination of knowledge and of people. Parliamentarians, political representatives, are experts in both of these fields. What follows is an example of political leadership with respect to the environment.

All here know that Canada and the USA are close neighbours. We share a border over 6,000 kms in length, exchange over $250 billion in commodity trade annually, and share many values and aspirations. Also, we have frequent disputes–about trade, resources and environment–but to settle these formed, over 50 years ago, the International Joint Commission–in essence, a dispute resolution mechanism.

Recently, in the seventies, when environmental problems were becoming very apparent in the waters bordering our two nations, Canada and the USA angaged in a process to clean up the Great Lakes, the waters leading into them and the land along their shores. Involved in this exercise, which is showing remarkable progress in the past few years, are two nations, Ontario province, six different states of the USA, a number of large cities encompassing a population of over 100 million people, and some of the oldest, most densely developed industrial land in the world.

Today, not only are the Great Lakes much cleaner than 15 years ago, but also fisheries are recovering and recreation opportunities have been restored and created. Furthermore, to address many of the environmental problems, new management practices and cleaner technologies have been developed and adopted. Citizen groups, companies, municipalities, state/provincial and national parliaments, have worked together to achieve a common goal.

The example of success around the Great Lakes, concerns for environmental quality, and its linkage to trade issues, led Mexico, the USA and Canada to formulate and adopt a separate environmental agreement as part of the North American Free Trade Agreement (NAFTA).

Of significance to EAPPCED are the following:

- despite the complexity and the magnitude of the environmental issues, real achievements are possible;
- In the process of addressing the environmental issues, many new and cleaner technologies have been developed which, in turn, have generated new jobs;
- success has been possible only by the coordinated efforts of many public and private sector players; and
- political representatives at all levels (national, state/provincial, and municipal) were all motivated to provide the needed leadership.

REMARKS

By

THE CHINESE DELEGATION

On

REGIONAL ACTIVITIES' CONTRIBUTIONS TO GLOBAL CLIMATE CHANGE

Presented by

MR. YANG JI KE

Remarks by the Chinese Delegaione on Regional Activities' Contributions to Global Climate Change

Mr. President,
Fellow Delegates,

It gives the Chinese National People's Congress delegation great pleasure to come to beautiful Phuket to attend the Second East Asia and Pacific Parliamentarians' Conference on Environment and Development. We have brought with us with the cherished friendly sentiment of the Chinese people for the Thai National Assembly and the people of Thailand. We also wish to warmly congratulate our host for the successful convocation of this conference. May this conference be a success.

The Eastern Asia and Pacific region is entering a stage of rapid economic development, which is no doubt beneficial to the people in this region. But at the same time, economic activities of the majority of the developing countries, including China, in this region have created such environmental problems as global climate change. Therefore, to strengthen cooperation in environmental protection among all countries in this region is of great importance to promoting a sustained development of this region and the world at large.

China is the world's most populous country, feeding 22% of the world's population with only 7% world's cultivated land. Hence, it remains the first and foremost objective and target of the Chinese government and people to develop the economy and eradicate poverty. To this end, China needs not only a peaceful and stable international environment, but also a domestic environment of political stability and economic development, and a better ecological environment as well. To protect the environment remains a state policy in China. We are particularly concerned about the change of global climate.

China has a vast coastal area, densely populated, industrially concentrated and economically advanced, which is strategically important to economic development in China. Such negative impacts as rise of sea level and climate irregularities brought about by global warming and climate change will constitute a threat to our national economic development. Against such background, we need to carry out a deep and systematic study on the causes and impacts of the climate change so as to improve the technology in this area, minimize disasters, make scientific predictions, and formulate policies in conformity with the Chinese actual conditions.

The Chinese National People's Congress attaches great importance to global climate change. Early in 1990, a state coordination group on climate change was established involving various ministries. In June, 1992, China signed the Biodiversity Convention and Framework Convention on Climate Change. In November that year, the Standing Committee of the National People's Congress ratified these two conventions at its 28th session, so that China became one of the first ten countries in the world to ratify these two conventions. Currently, while actively fulfilling every obligation carried by this convention, China has participated in research projects and related activities organized by international organizations to protect the global climate. The National Scientific Commission has incorporated climate change research into the key research project as a priority, which has already achieved some progress. Of course, further efforts need to be made in this area.

The atmosphere is one of the most important components of the global environment. The impact of global and regional climate change on social and economic development is all-directional and multi-faceted. Climate change resulting from regional activities will exert a profound influence on regional social economic development. To protect the global climate is in the common interest of peoples of the whole world, which requires common efforts of all countries, including countries in the Eastern Asia and Pacific region, and close international cooperation. We are all the more willing to strengthen the cooperation in this area with countries in this region.

China is one of the countries in the world with much diversified biological resources, and the biodiversity protection is in conformity with the common interest of the region and the world, and of China as well. The National People's Congress of China and Chinese Government have paid great attention to biodiversity protection. On the legislative aspect, we have passed and are enacting laws and regulations for the protection of environment and biodiversity. To date, a total of more than 60 natural reserves with an area over 400,000 square kilometers has been established in China, and a lot of precious plant and animal species have been protected within the area; China has singed and approved the United Nations Biodiversity Convention. China, however, is a developing country and constrained by its economic strength. Solving the problems in this regard is, for China, still a long-term and arduous task.

Thanks, Mr. President.

REMARKS

By

MR. AMBASSADOR WANG SHU

Member of People's Congress, China

REMARKS

Mr. President and Vice Presidents,
My dear collegues,
Ladies and gentlemen,

It is great pleasure for me in particular, to attend for the first time this environment conference. I am not a member of the environment committee of China's People's Congress, but I share the feelings and concerns of my collegues on this issue, which is becoming imperative to humankind.

Following the progress of industrial production and population increase, the international community in recent years has paid much more attention to the environment problems, and has strongly demanded effective measures to protect the global environment. All countries in the world, while promoting production and trade, at the same time, should give more attention to the environment. Most nations in this region are developing countries, which are devoting their major efforts to speed up economic growth, and to promote world trade. Therefore, the problem of development and environment is becoming a more important topic facing the peoples as well as parliamentarians of the developing countries in this region.

But we must keep in mind, to most of countries in this region, developing the economy and improving the living standard of the people, are the most important targets for them. Without proper economic development, we could not meet the basic needs of our peoples, not mention environmental protection, Therefore, economic development is the prerequisite to environment protection. The developing countries can only carry out the environment programme according to their own conditions, including economic, financial and technical conditions. The developed countries should not force the developing countries to do this or that according to their own standards, but should help and support them economically, financially and technically. This is a duty to all developed countries. Without the participation of developing countries, global environmental protection will never be realized.

Now, we are at a time of changing of centuries. In entering the New Century, all of us should get together more closely to solve the problem of both development and environment. China, as a vast country situated in the east Asia and Pacific region, understands clearly what her responsibility is, and what kind of important role she should play on global and regional environment.

The Chinese National People's Congress and the government, as always, attach great importance to environmental protection. We have set environment protection as a fundamental state policy, and put this into practice with a series of effective and efficient measures. In June 1991, China sponsored a ministerial meeting of the developing country on environment, at which a "Beijing Declaration" was adopted, reflecting China's determination to participate in solving regional and global environment and development issues. In 1992, China attended UNCED and solemnly singed "Agenda 21" and other documents. As a following step, the Chinese government with the participation of many ministries and departments concerned, has formulated "China Agenda 21" and has put it into effect. All of this reflects the determination and action China has taken to fulfil its obligations to humankind.

Together with all the countries in this Region, we are looking for a green world, and working for a green world. We are convinced this target will be achieved, and must be achieved.

THANK YOU, MR. PRESIDENT AND VICE PRESIDENTS.

JAPAN
COUNTRY REPORT

By

AKIKO DOMOTO

Member, House of Councillors,
Japan Diet
President, GLOBE Japan

JAPAN COUNTRY REPORT

As a Japanese parliamentarian, and in my capacity as President of GLOBE (Global Legislators Organization for a Balanced Environment) Japan, I would like to take this opportunity to speak to you about the state of the environment in Japan, and Japan's current environmental policies.

I. Japan's Environmental Background: Development and Pollution

To place Japan's current environmental conditions and policies in context, I would like to begin with a brief review of Japan's post-war history from an environment-development perspective (rather from the traditional economic perspective).

As you all are aware, after the Second World War Japan went through a period of extremely rapid economic growth. From an economic perspective this was seen very positively. The world was amazed and awed by Japan's meteoric rise in GDP and production. It was a source of great pride for Japan.

However, our development in many ways was too fast and our record-breaking growth rates were accompanied by many negative environmental, social and cultural side-effects.

Within a matter of years Japan came to be known as the "Polluted Archipelago". We were plagued by contamination of our earth, seas and skies. In the rush to develop fast and make quick profits many, industrial disasters occurred. The most well-known are Minamata-byo (whereby women in southern Kyushu ingested Mercury from eating local fish during pregnancy and gave birth to horribly handicapped offspring) and Yokkaichi-byo (whereby pregnant women gave birth to healthy children but suffered horrible physical handicaps from the putrid polluted air).

These disasters gave rise to nationwide anti-pollution movements. In 1972 Japan's Diet session was dominated by pollution concerns and was thus dubbed the "pollution Diet". For the first time pollution had become a serious national issue. There were two direct, tangible results of the "pollution Diet". First, in 1972 Japan passed a Basic Pollution Law, and a Basic Environment Law which created very strict industrial regulations. Second, Japan established an Environment Agency.

Both of these measures had an immediate effect on Japan's industrial production. Because of the newly introduced strict environmental regulations companies were forced to come up with innovative pollution-prevention technology. Many economists argue that the introduction of pollution-prevention technology in fact sparked a second wave of economic growth within Japan.

II. Post-Rio Japan: A shift in environmental policy

Twenty years passed. In 1992 the Earth Summit opened in Rio, and produced two documents that would effectively change the way the world conceptualized environmental issues: Agenda 21 and the Convention on Biodiversity.

As a consequence of the Earth Summit there has been a definite shift in environmental policy in Japan. This change is visibly manifested in Japan's New Basic Environmental Law, which was finally passed last November. The New Basic Environmental Law introduces two broad environmental policy changes. First, the law incorporates a global environmental perspective, and emphasizes the need for international cooperation on environmental issues. Second, the law represents a shift from "brown", that is pollution prevention-oriented policy, to "green", that is nature-conservation, preventative policy. This second change clearly came about because of the Convention on Biodiversity.

III. Japan Report on the Topics to be Addressed at EAPPCED II

I would now like to briefly address Japan's progress in the four areas to be addressed here at this meeting.

First, Agenda 21. Japan completed its National Report, as stipulated by Agenda 21, in December of 1993. On a positive note, the formulation of this document represented the first time that Japanese bureaucrats, politicians, and NGOs worked together to assemble an official document. Unfortunately, consultation and input by politicians and NGOs was limited and many remain dissatisfied with the final document.

Second, Climate Change. In 1992 Japan ratified the Global Framework on Climate Change Convention, and in March of 1994 it became effective. As stipulated in the convention, Japan will send the required national information to the international secretariat by this June. An important part of addressing Climate Change issues on an international level is to develop alternate forms of energy. Largely due to the efforts of Mr. Takashi Kosugi, President of GLOBE International, in Japan's nation budget for 1994 the Japanese Government has approved the introduction of subsidies for the installation of solar energy panels. Any individual will be able to apply for a subsidy of 50% of the installation cost. The budget allocates 19 million dollars for solar panel installation: enough money to install 700 solar energy units.

Third, trade and environment. This is an area that is simulataneously most critical to true environmental reform and most difficult to tackle. At our most recent GLOBE General Assembly in Washington in March we looked at the issue of Trade and Environment. As politicians concerned with both the environment and development we must confront the fact that free trade often leads to down-harmonization of environmental standards. We must find some way to prevent and reverse this trend at the international level. With regards to current developments in the area of trade and environment, Japan strongly supports the recent decision at Marrakesh to set up a Trade and Environmental Committee within the newly established WTO (World Trade Organization) under GATT. We hope this will be a committee that actually functions, rather than a replication of the earlier Trade and Environment Committee in GATT which never fully functioned. On behalf of GLOBE I would like to say that I am greatly disappointed that the Marrakesh GATT Declaration did not explicitly mention the environment. This demonstrates that environment still has not attained a position as a priority issue within the international trade dialogue.

Fourth, biodiversity. Japan ratified the Convention on Biodiversity in 1992 at the same time as the climate Change Convention. Unfortunately until this year little concrete action has been taken. This was partially due to the fact that there was little awareness of the issue of the importance of biodiversity within the dialogue on environment in Japan. Finally, for the first time in the fiscal budget of 1994 there has been money allocated specifically for biodiversity research; as well as an expanded budget for nature conservation. The Japanese Government believes strongly in the need to focus energy and cooperation on regional biodiversity conservation in Asia.

Personally, I feel a great personal commitment to the issue of biodiversity conservation, particularly here in Asia, so I would like to stop for just a moment here to emphasize that biodiversity is not just a national issue, but a regional and global one as well. Biodiversity does not obey national borders. To take an obvious example, let us look at birds and creatures of the sea. Their breeding sites, resting grounds, and final wintering destinations often span many thousands of miles and several countries. The destruction of even a small area of forest, or swampland, or riverbed in a far-away place can thus cause a major crisis for certain species. Birds, unlike other land-based life forms are an excellent indicator of the health of other species, and ecosystems. A diverse, healthy bird population signals the over-all well-being of an eco-system. When birds die off in unnatural numbers, as they are in many areas today, it is a sign of forthcoming environmental degradation. While countries pursue their own national development plans, forests, wetlands, and rivers which provide critical migratory resting sites are gradually disappearing. In many cases birds and fish are dying from lack of food. To stem the tide of environmental and biodiversity destruction will require regional cooperation on multiple levels. This is an important role EAPPCED can, and I hope will, play in Asia.

I would like here to briefly touch on an issue that although it is not on the agenda of this meeting I believe is a critical consideration when talking about environment and development; and that is population. Over-population, and the resultant stress on already strained and fragile ecosystems will have profound environmental effects over the long term. It will also act as a brake on development. This year's International Conference on Population and Development which will open in September in Cairo, attempts to deal comprehensively with the complex interrelationships between population, environment and development. Within this, all of us must be thinking of how to cradicate poverty, and raise the status and educational level of women, for this will have far-reaching effects on our development efforts.

IV. The Importance of Organizations such as GLOBE and EAPPCED in Influencing National and International Environmental Policy

I am moving a bit beyond my assigned country report here, to give a plug for parliamentarian organizations, but I believe it is in the above areas that groups such as GLOBE and EAPPCED can make a difference. GLOBE's strength lies in the fact that it is non-partisan. This means, for example, that even under the current political conditions in Japan, where politics is temporarily deadlocked, we as GLOBE members, are able to act. Further, at an international level it allows parliamentarians to cooperate on environmental issues that concern us all in a way that supercedes purely national interests. This is the kind of cooperation called for if we are truly to make any headway in confronting the great development and environmental crises of our time.

Similarly EAPPCED has an extremely important role to play within Asia. Many of the countries in Asia have had, or are experiencing, a development pattern similar to that of Japan: that is, rapid development in a very short time-frame, with little time for environmental, and social adjustments to be adequately addressed or planned for. In many ways the problems we face in Asia, in terms of degree, are unprecedented in the history of development. In this context it is critical that policy-makers, who serve as a bridge between local voices and NGOs, and government officials, cooperate both nationally and regionally. As a Japanese parliamentarian and as President of GLOBE Japan. I would like to close by saying that GLOBE Japan fully supports EAPPCED and hopes that it will evolve into an organization that can make significant policy contributions in the future.

COUNTRY REPORT

BY

HON. CHANG RIM KU

REPUBLIC OF KOREA

COUNTRY REPORT

by Hon. Chang Rim Ku
Republic of Korea

Mr. Chairman, distinguished guests, and fellow parliamentarians!

Thanking the leaders of the House of Representatives of the Kingdom of Thailand for their unsparing efforts in preparing for our gathering, I take great pleasure and honor in partaking in this meaningful occasion to share with all of you what concerns and policy measures have been high on the environmental agenda in the Republic of Korea.

The past three decades of rapid industrialization in Korea has brought material wealth to our people, but, unfortunately, it has also impoverished our environment. In 1990, amid growing public awareness about the seriousness of environmental deterioration, the concept of "the right to a clean environment" was added to the nation's Constitution, and the Environmental Administration was established to develop and implement related laws, policies, and programs. In 1990, the Administration was upgraded to the Ministry of Environment and the Basic Environmental Policy Act was promulgated.

Since its start in February 1993, the new government of President Kim Young Sam has given high priority to the environment, making improvements in this area an important goal of the Five-Year Socio-Economic Plan for 1993-1997. For example, the plan includes an 8 trillion won investment to improve the nation's air and water resources and waste treatment.

The current policy measures on the environment follow two basic directions: minimization of the generation of environmentally harmful elements; and effective management of existing pollution problems. In both cases, the "polluter pays" principle and economic tools (along with traditional regulatory measures) are getting increasingly wider application.

More specifically, in order to minimize the harmful effects that large-scale development projects can have on the environments, the government enacted in June of last year the Environmental Impact Assessment Law, which encourages the involvement of local residents in such assessments.

As part of its efforts to clean up the nation's water resources, the government will build drainage plants throughout the nation, with the aim of bringing up the percentage of sewerage treatment form the current 39% to 73% by 1997. It is also taking steps to better manage reservoirs, carve out special "battle" zones, and put in new water pipes.

Furthermore, a new integrated waste management plan has been devised with emphasis on waste reduction and recycling. As part of the plan, the government has introduced a new system of billing for garbage collection based on waste volume. It will also expand incineration facilities and sanitary landfill sites.

Meanwhile, the quality of air is being gradually improved with increased supply of clean fuels such as liquified natural gas and low sulfur petroleum as well as new technologies to reduce pollutants in car emissions.

Aware of the importance of acquiring domestic scientific and technological know-how in dealing with environmental problems, the government has defined the development of "clean" technologies as one of the critical areas worthy of massive support under the "highly advanced national projects", which pools the talents of industry, research institutes, and academics to tackle technological challenge.

And thus, the environment is high on our national agenda. It is also an important part of our perspective on the world. For the deterioration of the earth's environment must be the shared concern of the entire human race. Besides, as we are painfully aware, pollution knows no national boundaries.

In this regard, while it is primarily dealt with as a political and military issue that goes against the world wide nonproliferation regime, the secrecy in which North Korea is desperately trying to keep its nuclear program must also be seen as a serious threat to the region's environment; the program is based on unsafe, primitive technologies, and a Chernobyl-style accident in Yongbyon, the center of North Korea's nuclear efforts would be a disaster for the environment, not just for the Korean peninsula but for all of Northeast Asia.

As a responsible member of the international community, we in the Republic of Korea have taken an active part in the efforts to address regional and global environmental issues. We are already members of the Montreal Protocol, CITES, and the Basel Convention. Soon, we will also join the Convention on Biodiversity.

As the signing of the Final Act of the Uruguay Round of the GATT in Marrakech a few weeks ago underscored, environmental issues have become inextricably linked to trade, at the urging of the United States and other advanced nations.

There can be no objection to the idea of "greening" the global trade system. However, when it gets down to concrete measures to connect the environment and trade, the huge gap between the realities of the developed and developing worlds, of the multitudes of conditions in which human race lives must be taken into account. According to an ADB report, one-fourth of Asia's three billion population lives in poverty on US$100/per day. The picture can't be much better for many other parts of the world.

Under this circumstance, one hopes for a kind of an environmental "Marshall Plan," a fund created by the countries that can afford the generosity, namely the G7 and other OECD countries, to improve the global environment and develop technologies that all can share. Such would be a milestone accomplishment in the efforts to save the earth's environment. It will require nations to leave some of their self-centered interests aside. But, surely, the goal it could accomplish would be worth the generosity.

Thank you for your kind attention.

COUNTRY REPORT

By

HON. SIL PARK

Chairman
Special Committee on the Preservation Policies of the Environment
National Assembly Republic of Korea

Ladies and gentlemen, distinguished parliamentarians,

As chairman of the Special Committee on Environment Preservation and Conservation of the Korean National Assembly, I would like to say a few words about the activities of the National Assembly to protect the environment and what we parliamentarians should do to cope with the recent development involving environment and trade.

As your may know, Korea's economic success has brought about serious environmental degradation to the extent that we are now worrying about the quality of drinking water supplied by the government, for one example.

To deal with all these environmental problems, the Korean National Assembly has exerted its efforts by enacting laws, passing resolutions, assenting to the ratification of international environmental conventions, as well as increasing the budget for the environmental protection.

With the increase in the demand for a better environment from the people, the National Assembly set up a Special Committee on the Preservation of the Environment in 1990 to present specific and necessary environmental countermeasures, and finally to increase national policies on environment.

A recent move in the National Assembly to upgrade this special committee to a standing committee reflects the demand of the people and the will of the National Assembly to face the environmental problems more actively.

By so doing, the National Assembly can and will strengthen its activities to enhance the consciousness for environmental protection and to conduct research on the nation's environmental policies in cooperation with experts concerned.

International environmental cooperation with the Asian-Pacific countries is another area where the National Assembly places its priority. In this context, the Constituent Assembly of the EAPPCED in June last year was possible.

Particularly, sand dust wind from China, pollution of the Yellow Sea, and nuclear waste dumping in the East Sea are just a few examples where international environmental cooperation should play important roles. More serious and urgent regional environmental problems could be solved through our discussions here.

With the closing of the Uruguay Round negotiation, some economically advanced countries began to stage another trade restriction campaign, so-called "Green Round" using environmental protection as an excuse. We have to pay more attention to this trend and find a reasonable solution. There is, of course, no objection to save this one and only Earth. However, we should not let them exploit many developing countries' economic interests in the name of environmental protection.

Due to their role in deteriorating our environment in the past, I do not believe those rich and advanced countries are in the position to dictate us how to protect our environment and how to accomplish sustainable development.

I urge them to recognize their historical responsibilities. I also urge them to join in achieving the common goal of sustainable development by way of technology transfer and financial assistance to the developing countries. On our part, I propose to all the parliamentarians who are gathered here that we should play a leading role on revitalizing the global environment and in achieving sound and sustainable development.

For all these purposes, I also believe that parliamentarians should maintain a close relationship with non-governmental organization (NGO'S) in this region to faithfully carry out the role of environmental watch-dog.

At the same time, I would like to stress the role of parliamentarians and NGO's to develop policies which facilitate the diffusion of the basic economic concepts of the "3Rs", that is "Reduce, Reuse and Recycle."

With all these roles in mind, the Korean parliamentarians will do their best to accomplish the common goal of environmental protection by maintaining close cooperation with the parliamentary leaders of the Asia-Pacific countries.

Last but not least, I would like to extend the appreciation of the Korean delegation to the House of Representatives, the National Assembly of Thailand for their efforts to prepare for the successful 2nd EAPPCED.

Country Report

By

Hon. Siti Zainab Abu Bakar

Chairman
Women's Caucus of Malaysian AEPPD
Member of Parliament
Malaysia

COUNTRY REPORT

INTRODUCTION

1. The framework of environmental planning and management in Malaysia is based on the objective of its environmental policy as enshrined in the Malaysia Plan, where it is conscious that environmental management is part and parcel of economic management. Environment is a composite resource on which is sustained, in the final analysis, the socio-economic well-being of a country in the long run. Henceforth, Malaysia's overall environmental policy objectives since the Third Malaysia Plan have always been intended to "balance the goals for socio-economic development and the need to bring the benefits of development to a wide spectrum of population against the maintenance of sound environmental conditions."

2. In Malaysia, although the management of the environment was practised through various legislation under sectoral agencies in charge of natural resources conservation and utilization, it was only in the mid-seventies that environmental management took on a formalized and structured form. In 1974, the Parliament passed a most significant and comprehensive piece of legislation, the Environmental Quality Act 1974 (EQA). The Act provides for an advisory Environmental Advisory Council whose functions are generally to advise the Minister on matters pertaining to the Act and those referred to it by the Minister. The Act also provides for the appointment of a Director General of Environment whose duties and functions include the issuing of licenses for waste discharge and emission, the formulation of standards, the coordination of pollution research, and the dissemination of information and educational materials to the public, with the subsequent formation of the Department of Environment in 1976.

3. Initially, environmental management in Malaysia has been more of a curative than preventive measure. The EQA is largely used for pollution control through issuing of licenses for "prescribed premises" and the imposing of fines for non-compliance with the standards. Although curative measures still remain as an important tool in environmental management, preventive measures are now looked upon as the means to ensure sustainable development. The Environmental Quality (Prescribed Activities) (Environmental Impact Assessment) Order 1987 is introduced to act as one of the preventive measures. It identified 19 categories of development activities that require EIA reports to be submitted, amongst which are agriculture, land reclamation, housing, industry, infrastructure, waste treatment and disposal, and water supply. The EIA Order is a legislative procedure for approving or rejecting the report about a project, not the project itself. It acts as a mechanism for improving planning of individual projects, determining when effects are unacceptable, and deciding
methods for avoiding some effects and mitigating the remainder. To strengthen these preventive measures for ensuring environmental considerations, the Malaysian government recently announced that a conservation clause will be included in agreements for development projects.

Sustainable Development (Agenda 21)

4. The United Nations Conference on Environment and Development (UNCED), or Earth Summit, held in Rio de Janeiro in 1992 has among its major achievements the Agenda 21, which is a comprehensive blueprint for global actions to affect the transition to sustainable development. Sustainable development must be viewed as a process which takes into account time frames and targets. It is a dynamic process and should not be treated as a maintenance job. The result of various initiatives taken towards achieving sustainable development can only be assessed within a certain period of time in the future and cannot be evaluated at the onset of the project or at its early stages of implementation.

5. Within such ambit, Malaysia as a developing country emphasizes the need to strike a balance between the promotion of economic growth and the pursuit of sustainable development. As such, Malaysia adopts a broad-based strategic approach whereby national sustainable development is pursued for the benefit of present and future generations, and addressees critical elements of sustainability such as environmental soundness, economic efficiency and social issues, the eradication of poverty, etc. Hence, it can be said that many Agenda 21 themes are therefore already embodied in Malaysian policy.

6. Malaysia's progress with respect of certain focal issues can be summarized as follows:

i) International Trade

Malaysia works towards the liberalization of trade and has made progress in structural adjustment in changing the economic base from a resource intensive to a manufacturing export oriented one, and is addressing poverty and the equitable distribution of benefits. However, Malaysia faces trade constraints. In working towards the liberalization of trade, the unilateral been obstacles.

ii) Health

Malaysia has made substantial progress in providing an extensive healthcare system for its population. The country's rural health programme has been successful in providing basic healthcare services and promoting hygienic practices among the rural population. By the end of 1996 it is expected that 89% of Malaysians will have access to a piped, treated public water supply. There have been significant advances in preventing and treating tropical diseases, cancer and diabetes mellitus.

iii) Toxic chemicals and hazardous wastes

Malaysia's progress on toxic chemicals and hazardous waste management has been on four main fronts: the preparation of codes of practice for the handling of hazardous wastes; the environmentally sound management of toxic chemicals; the passage and enforcement of regulation; and the enhancement of chemical safety. Recently, the government of Malaysia has added another item to its list of achievements in handling hazardous waste i.e. the implementation of the integrated scheduled waste treatment project, the first of its kind in the country. With such facilities, it is hoped that the handling of hazardous waste from industries can be properly managed. The privatization of the sewerage system is another step taken by the government to ensure the environment is well taken care of, through systematic disposal of waste and hence good pollution control measures.

Global Climate Change

7. Climate change is a global issue and can only be addressed through joint and concerted effort by all countries. Hence, in pursuing such effort, Malaysia signed the Framework Convention on Climate Change in June 1993 and is in the process of ratifying the Convention. Malaysia supports the noble objective of the convention, that is, to stabilize global warming so as to ensure sustainable development on this planet. Although Malaysia, as a developing country party to the Convention, is not bound by any commitment to stabilize or reduce her greenhouse gas emissions as required of the developed countries, Malaysia has taken several actions towards the achievement of the Convention's objective.

8. Malaysia, in cooperation with Indonesia and Thailand, undertook a project funded by the United Nations Environmental Programme (UNEP) in 1989 to carry out impact assessments on agriculture, water resources and sea level rise due to climate change. The findings were published in 1992 as a UNEP publication titled "The Socio-Economic Impact of Climate Change in South East Asia". UNEP is currently funding Phase II of this project with the objective of reviewing the effectiveness of the publication, its short comings, and identifying future activities.

9. In 1992, Malaysia participated in a project entitled "Regional Environmental Issues" which was supported by the Asian Development Bank. In this project each participating country would carry out country studies on various policy options to be considered in addressing the climate change issues. The ADB will synthesize the inputs from all countries to formulate the regional strategies. The final report will be ready by mid-1994.

10. Malaysia firmly subscribes to the concept of conservation and enhancement of all carbon sinks (forests, oceans and canals as a means of reducing the threat of global warming. It fully recognizes the roles of tropical forests as effective carbon sinks. In line with this, Malaysia practices sustainable forest management. Out

of a total land area of 33 million hectares in the country, 58% is currently covered with forest and another 13% is covered with plantation tree crops. For the forested land, as much as 82% (16 million hectares) are as permanent forest reserves, national parks and wildlife sanctuaries. To continue its efforts in the conservation of carbon sinks; steps are also being taken to reduce logging and increase reforestation. To this end, any project proponent who carries out forest plantation is eligible for a full tax exemption of pioneer status for ten years or a 100% investment tax allowance for five years. Relating to this, an effort has also been made to reduce the emission of carbon dioxide from motor vehicles by abolishing the 35% import tax and 10% sales tax on catalytic converters so as to encourage the usage of more emission control devices.

11. Malaysia, in her effort to reduce green house gases and to address global warming, has also become a party to various other conventions such as the Montreal Protocol on substances that deplete the ozone layer and the Vienna Convention for the protection of the ozone layer.

12. For future actions, Malaysia feels strongly that climate change issues could only be addressed through global partnerships. As such, Malaysia will continue to participate in regional activities related to climate change. As agreed in the convention, developed countries must take the lead in addressing climate change issues and in providing additional financial resources to facilitate the transfer of technology to developing countries. Hence, Malaysia calls upon developed countries to provide the necessary resources to developing countries so that the threat of global warming could be reduced.

BIOLOGICAL DIVERSITY

13. Malaysia is a signatory to the Convention on biological Diversity on 12 June 1992 and is in the final stage of ratifying it. Malaysia is one of 12 countries that has been named a world megadivesity area where it is estimated that 10% of the flora species and 6.5% of the fauna species in the world are found. At this initial stage, Malaysia has taken various steps to ensure that the country's biological diversity is being protected and utilized in a sustainable manner so as to achieve optimum benefits.

14. In accordance with the decision made by the Malaysian Cabinet on the 12th of August, 1992, the Ministry of Science, Technology and Environment has established a National Committee on Biological Diversity to coordinate all national actions taken on biological diversity. Along this direction, a National Policy on Biological Diversity is being formulated and a National Workshop to discuss it has just taken place in early April 1994 where representatives from various sectors such as NGOs, state governments, private agencies and institutes of higher learning attended the workshop.

CONCLUSION

15. Efforts continue to made to sustain Malaysia's growth, inter alia, by ensuring economic stability, competitiveness and resilience. This, in turn, poses challenges for sustainable development in terms of allocating resources for economic growth and environmental management. Despite this, increasing resources are being allocated on the basis of sustainable development principles, within a prudent overall financial management policy. To promote sustainable development, Malaysia has in place various policies and strategies, as well as economic and legal instruments. To carry out these policies and strategies, Malaysia possesses a strong institutional framework relating to sustainable development including private, government, and non-governmental organizations. Lastly, there seems to be an increasing need to focus on enhancing indigenous institutional capacity through skills training and the transfer of technology.

Bahagian Pemuliharaan dan Pengurusan Alam Sekitar
Kementerian Sains, Teknologi dan Alam Sekitar
Kuala Lumpur
April 1994

MEXICO
COUNTRY REPORT

By

MARIA ELENA CHAPA H.

Senadora de la República
Presidenta de la 3a. Comisión de
Relaciones Exteriores de la
Cámara de Senadores

Delegación de parlamentarios de México

Camara de Senadores
María Elena Chapa H. Presidenta.
Gustavo Guerrero Ramos
Jorge A. Vega Camacho

Cámara de diputados
Rafael Sanchez Leyva.
Emilio Becerra González
Jorge Oceguera Galván

20 al 23 de Abril de 1994
Phuket, Tailandia

MEXICO COUNTRY REPORT TO EAPPCED II

PHUKET, TAILANDIA, 21 ABRIL 1994.

MARIA ELENA CHAPA H.

Distinguidos Parlamentarios:

México se inscribe en el contexto mundial en un proceso de globalización e interdependencia. El proyecto económico, político y social del pais se dirige, de manera integral, a aplicar criterios comunes para solucionar problemas derivados del medio ambiente y del desarrollo. Las políticas públicas han dado cuenta de ello.

Los legisladores federales del Congreso de la Unión, hemos contribuído, en el marco constitucional, a generar la reglamentación necesaria para ordenar las tareas con mayor energía a partir de una nueva ley general de equilibrio ecólogico y protección del ambiente, vigente desde 1988.

Todas las acciones legislativas tanto de senadores como de diputados, se realizaron con el sustento del respeto a la soberanía de nuestros pueblos, el resguardo de la seguridad nacional y a los principios de política exterior que nos rigen: no intervención, solución pacífica de las controversias, la igualdad jurídica de los Estados, la lucha por la paz y la cooperación internacional para el desarrollo. Nuestros principios constitucionales son, para nosotros, no negociables.

En los últimos cinco años se han fortalecido las iniciativas de ley vinculadas al medio ambiente y al desarrollo, bajo la conciencia colectiva y la convicción de que a nosotros nos corresponde la responsabilidad de regular y normar acciones que mejoren el medio en que vivimos, siendo un reclamo permanente de la población la atención a estos problemas.

Se han aprobado entre otras, una nueva ley forestal, una ley que regula las aguas nacionales, una nueva ley pesquera, una ley minera, una ley de sanidad vegetal y sanidad animal; se reformó el código penal que incrementa la penalidad de los delitos ecológicos, cuyo objetivo es colocar al aparato productivo nacional en posición de defender el entorno ambiental; en todas ellas, se considera el crecimiento urbano y rural como base de las acciones. El programa de las cien ciudades contempla la atención inmediata a los grandes núcleos de población y es un buen ejemplo de ello.

En sus relaciones bilaterales, el país ha signado diversos acuerdos y convenios, entre otros, se destacan: el acuerdo de cooperación entre México y Estados Unidos sobre contaminación transfronteriza del aire causada por las fundidoras de cobre a lo largo de la frontera (87), el acuerdo de cooperación para la solución de los problemas de saneamiento en San Diego (85), el acuerdo sobre contaminación del ambiente a lo largo de la frontera terrestre por descargas de sustancias peligrosas (85), el convenio Mexico-Belice sobre protección y mejoramiento del medio ambiente y conservación de los recuersos naturales en la zona fronteriza (91); con Guatemala, el convenio sobre protección y mejoramiento del ambiente en la zona fronteriza (88), con Estados Unidos de América el acuerdo sobre la contaminación del medio marino por derrame de hidrocarburos y otras sustancias nocivas (81), con Estados Unidos también, el acuerdo sobre cooperación para la protección y mejoramiento del medio ambiente en la zona metropolitana de la Ciudad de México (90), con este mismo pais, el convenio del medio ambiente en la zona fronteriza (84), con E.U.A., el acuerdo sobre movimientos transfronterizos, desechos y sustancias peligrosas (87), entre muchos otros.

Sin duda alguna, México ha participado en los convenios internacionales de los Estados y organismos gubernamentales y no gubermamentales; la premisa fundamental expresada es no descontarle al crecimiento económico y la expansión industrial, el costo de la salud social y el daño a la naturaleza en que vivimos.

Hay trabajo realizado, pero se reclama mayor esfuerzo, no sólo legislativo, sino de la sociedad civil en las actitudes, en los hábitos y en las decisiones que requieren corresponsabilidad. A nivel internacional, el Presidente Carlos Salinas de Gortari reconoce ante diversos foros, la intensa labor desarrollada por proteger este derecho universal de la humanidad. Ha reiterado que un medio ambiente sano, limpio y seguro, es prioridad nacional.

Con respecto al comercio y medio ambiente, en fecha reciente se aprobó el Tratado de Libre Comercio para América del Norte con Estados Unidos y Canadá; en él se destacan los acuerdos paralelos sobre ecología y medio ambiente y los compromisos conjuntos entre los tres países. Es importante señalar que no ha habido ni habrá relajamiento de la legislación mexicana en materia ambiental bajo el pretexto de atraer inversiones extranjeras.

Son reconocidos los esfuerzos sobre el cambio climático mundial que ha tomado nuestro pais, se destaca por su particular importancia el Valle de México; las medidas de uso racional de la energía y la diversificación energética, el apoyo en la inestingación sobre causas y efectos del cambio climático, son algunas de ellas. La invegstigación se incrementó con la formación del Instituto Nacional de Ecología; entre otros esfuerzos.

En biodiversidad se señala que existen más de 73 zonas protegidas, 24 con carácter de reservas de la biósfera, además de 44 parques nacionales. Hay mas de 52,000 hectáreas de parques marinos, el resguardo a los monumentos naturales, la protección a los mamíferos marinos y la mariposa monarca, entre otras definiciones.

La agenda 21 señala en su politica ecological (40 capítulos y 4 apartados) un plan de acción que nuestro país ha fortalecido; la política social en lucha permanente contra la pobreza, el fomento a la salud, vivienda, educación, y servicios públicos. Se destaca, con particular interés a la población indígena, El manejo de desechos sólidos, el uso de inceoticdas y plaguicidas se ha regulado en forma enérgica; la participación de los organismos no gubernamentales, las acciones de concertación para fortalecer a la mujer, los jóvenes los niños, los grupos étnicos y los débiles sociales, la introducción de la tecnología en los procesos productivos per mejorar las condiciones de vida de los trabajadores, el empleo, el comercio y la industria; han sido igualmente atendidos.

La modernización del pais no admite costos sociales de acciones depredadoras y contaminantes. No queremos ver a nuestor territorio ni a nuestros mares convertidos en basureros propios o ajenos. El criterio ambiental es ya obligatorio para todas las dependendias gubernamentales y las empresas de la iniciativa privada en todos sus proyectos y actividades.

Un modelo de desarrollo congruente con nuestra realidad mundial exige la responsabilidad de todos los paises. La toma de decisiones fundamentales que hoy se ejercen en la economía, la política y la sociedad deben articularse estrechamente con la vida sana de la humanidad. No se debe, en los tiempos actuales adoptar, por ética política elemental, medidas unilaterales. Los retos, las oportunidades, las estrategias y las recomendaciones adquieren dimensiones globales. En la parte de esta tarea que nos toca, los legisladores nos sumamos al desarrollo justo y sustentable de los pueblos.

Se anexa un informe de México sobre la situación general en materia de ecología y medio ambiente.

De este intercambio legislativo con los paises de Asia Oriental y del Pacifico, la delegación pluripartidista de senadores y diputados de México agradece la oportunidad de esta presentación en Tailandia, tierra generosa de la orquidea imperial y, fieles al canto del poeta precolombino Nezahualcoyotl compartimos: "las flores de esta tierra no son nuestras, nos las han prestado para su cuidado y el gozo de los que habrán de venir".

MUCHAS GRACIAS.

Distinguished Legislator:

Global parliamentarians on habitat, is a group in which legislatórs active in the fields of human settlements, environment, and sustainable development participate.

Some of it's principal objectives are:
To provide support to legislators to assist in their performance in the discussion and drafting of laws.

To promote a continuous dialogue among leaders, institutions, and those responsible for socio-economic planning with legislators at a regional and global level.

To seek constant updating of its members in all matters concerning the advances in the global strategies on habitat and environment, carrying out cooperative efforts to achieve the sustainable development of the communities.

Mexico will have the honour of being the venue for the biennial conference of this group and I wish to extend to you a very cordial invitation to participate in this important international event that will take place on October 5-8, 1994, in Cancun Quintana Roo.

I am sure that your participation will enrich, in great measure, the development of our common work.

I hope we can count with your valuable presence.

For any additional information please contact
MR. JACOBO JASQUI, Technical Secretary
Tel. (525) 510-27-63
203-15-88
Fax. 250-02-94


GLOBAL PARLIAMENTARIANS ON HABITAT
HUMAN SETTLEMENTS & SUSTAINABLE DEVELOPMENT

WHAT IS GLOBAL PARLIAMENTARIANS ON HABITAT?

Global Parliamentarians on Habitat is a group of parliamentarians from 84 countries that participate in human settlements, environment and sustainable development matters.

Their main activities consist in:

* Supporting the parliamentarians to optimize the discussion and drafting of laws.

* Supporting a continuous dialogue among the parliamentarians, leaders of institutions and all those responsible for planning the policies on habitat, ecology, and sustainable development at a regional and world level.

* To update members on the advances on the Global strategies on habitat and environment, making cooperative efforts in order to reach the sustainable development of the communities.

The proper handling of the Human Settlements and Sustainable Development issues depends greatly on the professionalism of its agents. The interdependence that actually exists in the world has enriched these activities, and has created new communication channels.

It is precisely Global Parliamentarians on Habitat (GPH) which links legislators of nations around the world in a climate of cooperation.

Mexico, because of its concern for the conservation and care for a better quality of life, will have the pleasure and honour of hosting the 1994 Annual Conference of Global Parliamentarians on Habitat (Human Settlements and Sustainable Development).

GPH feels sure that this congress will be very successful, since there shall be an important exchange of experiences and opinions in an atmosphere of cordiality and support that will give the parliamentarians an updated point of view.

The main goal of this event is to find proper ways to improve the quality of life of the earth's inhabitants.

Global Parliamentarians on Habitat

October 5-9, 1994

Tentative Program

Wednesday, October 5th

09:00-18:00 Registration

Thursday, October 6th

09:00-18:00 Registration
09:00-17:00 Tour to Tulum and Xel-Ha (Optional)
18:00-19:00 Private Reunion of the Global Parliamentarians on Habitat Council
20:00-22:30 Inauguration Dinner

Friday, October 7th

08:00-10:00 Plenary Session

Part I:

A. Introduction of the Presidium
B. Welcoming message by the Governor of the State of Quintana Roo
C. Words by Mr. Wenman
D. Official Inauguration

Part II

A. Conference by Mrs. Elizabeth Dowdeswell
B. Words by Senator Miguel Aleman
C. End of the Session

10:00-10:30 Coffee Break
10:30-12:30 Thematic Sessions

The sessions will be divided in two main areas:

A. Human Settlements and Sustainable Development
B. Environment and Sustainable Development

12:30-16:00 Free
16:00-18:30 Regional Sessions:

I. Asia
II. Africa
III. Europe
IV. Latin America
V. North America

*It is very important for the participants to keep the time allowed for them to speak (5 minutes). For this purpose, once the attendace is confirmed, a participation form for the regional sessions will be sent. The form will specify the need for the participants to expiain their country's situation briefly allowing all the countries to participate.

20:00 Welcome Dinner

Saturday, October 8th

07:00-18:30 Thematic Breakfast
09:00-11:00 Regional Sessions:

I. Asia
II. Africa
III. Europe
IV. Latin America
V. North America

*It is very important for the participants to keep the time allowed for them to speak (5 minutes). For this purpose, once the attendace is confirmed, a participation form for the regional sessions will be sent. The form will specify the need for the participants to expiain their country's situation briefly allowing all the countries to participate.

11:00-16:00 Editorial Committee
17:00-18:30 Plennary Session
18:30-18:45 Closing Ceremony
18:45 Presentation of the final printed document containing the resolutions reached during the Conference
20:00 Closing Dinner

Sunday October 9th

11:30	Arrival to Mexico City
14:30-18:30	Guided Tour to Different Irregular Human Settlements in Mexico City
20:00	Dinner

General Information

Site:

Cancun, Quintana Roo, Mexico
Fiesta Americana Condesa Hotel

INFORMATION OFFICE:

In Mexico City:
Cordoba 17-2 Col. Roma 06700 Mexico D.F.
tel. (5) 208-1647 fax (5) 208-9321

DURING THE CONFERENCE:

Cancun, Quintana Roo
Fiesta Americana Condesa Hotel
Blvd., Kukulcan, Km. 16.5 77500 Cancun Quintana Roo, Mexico
tel. (98) 85-1000 fax (98)85-1650

OPTIONAL HOTEL AND RATES:
FIESTA AMERICANA CONDESA CANCUN:

Single/Double From:	desde US$ 100.00
JR. Suite	US$ 200.00
Suite	US$ 430.00

CAMINO REAL CANCUN

Single/Double From:	desde US$ 120.00
JR. Suite	US$ 250.00
Suite	US$ 450.00

Hotel reservations will be made for participants, upon request through our information office.

HOTEL FACILITIES:

Money Exchange	Doctor
Safety Box	Baby Sitiers
Fax/Telex	Drugstore
Car Rental	Religious Services (Catholic)
Taxi	Florist Shop

TRANSPORTATION:
cancun International Airport is located 20 kilometres from the city centre (20 minute drive)

AIRLINES THAT OFFER DIRECT FLIGHTS TO MEXICO CITY:

Aeromexico	Continental Airlines	LAP
Aerolineas Argentinas	Delta Airlines	Mexicana
Air Panama	Ecuatoriana	Malaysia Airlines
Aero Peru	Iberia	Tan Airlines
Air France	Japan Airlines	Taca
American Airlines	KLM	United Airlines
Aviateca (Guatemala)	Lufthansa	Varig
Avianca (Colombia)	Lacsa	Viasa
British Airways	Ladeco	
Canadian Pacific	Lanchile	

AIRLINES THAT OFFER DIRECT FLIGHTS TO CANCUN:

Aeomexico	American Airlines
Mexicana	Lacsa
Taesa	United Airlines
Continental Airlines	

Local transportation will be provided when established in the programme.
Taxi or bus transportation are available at any time.

OFFICIAL LANGUAGES:

Spanish, English, French, German
(All plenary sessions will be simultaneously translated)

MONEY EXCHANGE:

MEXICAN CURRENCY:	Nuevo Peso
EXCHANGE RATE:	NS 3.25 Per US Dollar

CONSULATES REPRESENTED IN CANCUN:

Canada	Germany	Sweden
Costa Rica	Italy	Untied States
France	Spain	

CLIMATE:
Average temperature 98 Degrees F (27 Degrees C)
Light fabric clothing is suggested

ACTIVITIES FOR SPOUSES:

Guided Visits

COUNTRY REPORT

BY

MR. M. MENDBILG

Chairman, Standing Committee on Protection of Nature and Environment, State great Hurall, Parliament of Mongolia

MR. M. MENDBILG Chairman, Standing Committee on Protection of Nature and Environment, State great Hural/Parliament/of Mongolia

Mr. Chairman, Distinguished Delegates,

First of all, I would like to offer my heartfelt thanks and appreciation to the Thailand National Assembly, in particular to Honourable Tinawat Marukpitak, for inviting the participation of the Mongolian Parliament at this prestigious meeting. I also thank all other sponsors and individuals for their assistance in ensuring the smooth convening of our meeting.

Mr. Chairman, the Mongolian Parliament attaches great importance to this special gathering of parliamentarians to discuss actual environmental issues of our region. In particular, we highly appreciate that the on-going meeting presents a unique opportunity to consider development issues together with the protection of nature and stick to a tenet of "development respecting the environment". For we Mongols, nomads of Central Asia, respect nature, and adaptation to environmental milieu has been and remains a sacred national tradition.

Since long ago, protection of nature has been a part of state policy. Mongolian rulers, Khans, in their famous legislative acts, namely, the "Ikn Zasag", "Oirdyn Tsaaz", "Khalkha Juram", determined two main areas of the state regulation, such as protection of mountains, water and soil, and punishment of offenders who destroy nature and living beings.

Beyond that, along with state legal means, national religious norms have influenced considerably the protection of nature. Any action which might have detrimental effects to nature and living beings, is strictly prohibited according to Buddhist faith.

Nowadays, Mongolia places special attention on balancing its transformation to a market economy and environment. Of great importance is the elaboration of adequate solutions on the basis of selected former traditions and contemporary scientific-technological achievements. The new Constitution of Mongolia, which was adopted in January 1992, clearly attests to our efforts to pursue a right environmental policy in market economy conditions. "The land, its subsoil, forests, water, fauna and flora and other natural resources shall be subject to national sovereignty and state protection" says the Constitution. In line with this statement, the Standing Committee on Protection of Nature and Environment of the State Great Hural of Mongolia is in the process of working out related laws with a view to complete the revision and adoption of new environmental legislation by the end of 1994.

Now let me deliver to you the position of my country's parliament and government with regard to Agenda issues.

Trade and Environment

For more than four years, Mongolia has concentrated its national efforts in pursuing the programme of transformation from a 70 year-old centrally-planned socialist economy to a free-market economy.

Mongolia's transition as never before requires a further expansion of blilateral and multilateral regional cooperation, which we consider as a geo-economic reality and necessity for all countries of our region. Among various cooperative methods, we envisage trade as an extremely important way of cooperation. It is our understanding that foreign trade activities should be handled with great responsibility because they directly or indirectly influence the development and environment of other countries. With this in mind, it is imperative to find possible ways and forms of balancing world trade and global environment. My country's position with regard to this particular issue is given below: "real prices and costs of economic and production activities must be based on "internationalism"; the policy of "whoever causes the pollution must be responsible for that"; and the principle that producer must be responsible for safety of his production before the mankind" are the basic keys for balancing trade and environment. We are for implementing Principle 12 to the Rio Declaration which states: "Trade policy measures for environmental purposes should not constitute a means of an arbitrary or unjustifiable discrimination or a disguised restriction on international trade".

Mongolia is a country with 4,0 thousand diverse plants, 15,0 thousand various insects, 80 species of fish, 415 species of birds, 140 species of mammals. Among this biological diversity there are many plants and animals which are peculiar to Mongolia such as the red wolf, panther, wild horse, black tailed gazelle, etc.

Understanding its responsibility for conservation and sustainable use of its biological diversity, Mongolia has been undertaking a variety of measures including protection of rare species through their inclusion in the Red Book of Mongolia, a ban on their hunting, establishment of protected areas, rehabilitation and restoration of degraded ecosystems, and promotion of recovery of threatened species.

Mongolia, as an active supporter of and participant in international activities for the conservation of biological diversity, signed the Convention on Biological Diversity in June 1992 which became a national law in 1993 after its ratification by the State Great Hural.

Currently, Mongolia is cooperating with the World Nature Foundation within the framework of a joint project to create an information centre on biological diversity, to develop the basis for promoting ecological tourism, and to research and assess the possibility of setting up a system of protected areas.

In order to succeed in conserving our biological diversity, restoring and rehabilitating our forests, plants, and animals, as well as other natural resources we must have access to, and use as much as possible, advanced technology. With this in mind, Mongolia endeavours to cooperate with and welcomes all organizations, and individuals who are really interested in promoting international cooperation in this field.

Agenda 21

Acknowledging the eternal tie between nature and human beings, we realize that reflection and fulfilment of the concept of "development respecting nature" both in the state policy and individual actions of people, is an essential condition for further existence and future prosperity of the Mongolian nation. At the Rio-de-Janeiro Conference, Mongolia declared that it considers balancing socio-economic development and environment as the main principle of state policy, and endeavours to bring it closer to reality by conserving natural surroundings and providing our people with an ecologically safe environment, which can be best ensured through international guarantees. Towards this end, Mongolia has proposed to establish an internationally protected special ecological zone in the territory of Mongolia.

At present, we are in the process of preparing a draft of the "National Programme on Sustainable Development and Protection of Nature". But the absence of a clear coordination of international cooperation, especially regional cooperation, in speeding up the development of developing countries makes us wait for a while.

In this connection, we would like to submit a proposal to establish on a permanent basis a regional organization, "Sustainable Development and Environment", with a view to realize "Agenda-21".

Thank you for your attention.

COUNTRY REPORT

on

Progress Towards Achieving Sustainable Development in New Zealand

by

HON. CHRISTINE FLETCHER

PROGRESS TOWARDS ACHIEVING SUSTAINABLE DEVELOPMENT IN NEW ZEALAND: AN OVERVIEW

Tena Koutou Katoa and warm greetings to you all from the people of New Zealand or Aotearoa as it is known in Maori, the language of our indigenous people.

My name is Chris Fletcher. I am the Chair of the New Zealand House of Representatives' Planning and Development Select Committee. This Committee comprises Government and Opposition Members of Parliament and has responsibility for the public expenditure and policy for environment and conservation and other planning functions. New Zealand has a unicameral parliamentary structure, and therefore places a special importance to the work of select committees.

It is a great honour and pleasure to be invited to speak to you about New Zealand's progress towards achieving sustainable development. In this respect I am reporting not just on my own committee but also the work and wisdom of other New Zealanders. New Zealand is fortunate in that we have been very well served by ministers and advisers in recent years in the key portfolios of environment and conservation. Our current ministers send their sincere best wishes to you as does Alec Neill my fellow member of the New Zealand parliament who attended the inaugural conference last year.

Our principal focus of attention is New Zealand, communicating the background and purpose behind our policies. But we welcome the opportunity to share those views and experiences in an international forum.

To make a judgement on what New Zealand has achieved in sustainable management of its natural and physical resources one needs an understanding of New Zealand and its economic social and political environment.

On the one hand, as a country we are blessed with natural resources. There are only 3.5 million of us to enjoy and potentially despoil them. We are a comparatively young country with the major industrial development coming late, but intensively, over the 30 years after the second world war. The last decade has seen major structural changes–initially to the economy, then socially and more recently politically with electoral reform. New Zealand at the time of the last election in September, 1993 voted to change from the first-past-the-post electoral system, to a mixed-member proportional system that will take effect at the time of the next election, probably in 1996.

During the period of restructuring, there has been minimal real economic growth. Although this has meant there has not been the pressure from industry for major industrial developments, it has not been easy to promote environmental and conservation concerns.

Yet over the last fifteen years, when judged in retrospect, there has been a considerable shift in New Zealand public attitudes to the environment and conservation. There have been major changes in public attitudes towards smoking, waste recycling, and nuclear policy to name just a few. This public enlightenment has been reinforced by progressive laws encouraging public accountability and consistency from everyone in a decision making position.

In the area of sustainable development, the resource management act 1991 integrated all existing laws and set up a resource management system in New Zealand that promotes sustainable management of natural and physical resources. The act is now the principal statute for the management of land subdivision, water, soil resources, the coast, air and pollution control, including noise control. It sets out the rights and responsibilities of individuals, territorial and regional councils, and the central government.

The act sets up a system of policy and plan preparation and administration which allows the balancing of a wide range of interests and values. Its central concept of sustainable management encompasses the themes of use, development and protection.

The definition of environment in the act is very wide to include ecosystems and their constituent parts, including people and communities, all natural and physical resources, amenity values and social, economic, asthetic and cultural conditions which affect these. The definition of "Effect" in the act is all encompassing and all-decisions under the act are made on the basis of a consideration of the effects of an activity on the environment rather than the activity itself. It is enabling legislation and does not attempt to prescribe every policy and rule.

However, all those exercising functions and powers under the provisions of the act are required to ensure that the single clear and overriding purpose of the act is realised, that is, to promote the sustainable management of natural and physical resources.

A New Zealand sustainable land management strategy "caring for our land" is being developed by communities within the framework of the act.

Sustainable management of fisheries is being developed through a quota management system for both commercial and non-commercial harvesting of fish. The fishing rights of the Maori, our indigenous people, as guaranteed under the treaty of Waitangi, are accommodated within the framework. The strategy, consistent with the act, is to promote self-management by stakeholders, and an enabling role for government in the sustainable use of fisheries and the protection of the environment.

In New Zealand, forests cover 7.5 million hectares or 28 percent of the country's land area. Over time, New Zealand has positioned itself in forestry so that today its wood production demand comes almost exclusively from renewable planted forests.

The volume of wood produced in 1993 was 15.6 million cubic metres of which 99 percent was from planted forests. It is estimated that the annual New Zealand wood supply will rise to 19 million cubic metres by the year 2000 and to over 40 million cubic metres after 2020 if current planting levels are maintained.

Those involved in and responsible for tourism in New Zealand have taken some initiatives in promoting sustainable tourism activities. The tourist industry federation in conjunction with the Pacific Asia travel association has introduced a code of environmental principles for tourism in New Zealand.

These critical areas of planning and management of land, fisheries, forestry and tourism, are good examples of our resource management legislation in practice.

This act is delivering on its purpose. Its timing was fortunate in terms of public responsiveness and its implementation and functioning is proceeding smoothly.

To me as a politician, good laws must be enforceable laws. To me as a New Zealander, this is a good law as it has served to reinforce mainstream environmental and conservation concerns.

It has sought to apply consistent and equitable principles across all New Zealand society. Importantly, the act was formulated through a very public and transparent process. It recognized public concerns and sought to objectively address them.

It's a New Zealand law and only a New Zealand law. We do not seek to be judgemental as to its applicability to other countries. We do not as a nation seek actively to judge others. We are perhaps overly sensitive to being misunderstood ourselves in our actions. Perhaps a relevant example of this is our country's nuclear policy. I am especially conscious of this issue as it was within my constituency area that the anti-nuclear view was first expounded and developed.

This view is now mainstream New Zealand. We do not have the will or the temerity to impose this view on others but maintain our right to form and enshrine that view within New Zealand.

On environmental issues, our politicians and policy makers are attempting to maintain a global perspective while enacting appropriate laws to New Zealand. We maintain associations and accept global obligations perhaps out of proportion to our population's size or economic scale in world terms.

New Zealand has signed and ratified the Framework Convention on Climate Change. New Zealand's domestic policy, with its clear carbon dioxide stabilization target, and longer term emission reduction goal, is consistent with, but stronger than, the Framework Convention.

On funding issues, New Zealand recongnizes developing country concerns that they require help to take climate change considerations into account in their domestic sustainable development activities. New Zealand has agreed to make a substantial contribution over and above its 1994 to 1996 assessed payment to the Global Environment Facility, which is the funding mechanism for international assistance on environmental problems.

New Zealand scientists participated in the Intergovernmental Panel on Climate Change-the IPCC-and played an active role in its first assessment report which promted the global convention on climate change.

New Zealand signed and subsequently ratified the Convention on Biological Diversity. The laudable objectives of this treaty are the conservation of the biological diversity, the sustainable use of its components, and the fair and equitable distribution of its benefits to humankind. New Zealand takes its obligations under the convention seriously. We have a long established system of protected areas both on land and at sea.

New Zealand is a member and recognizes the important role of the South Pacific Regional Environment Programme (SPREP), the regional organisation responsible for co-ordinating and promoting environmental protection in the South Pacific region. The areas in the action plan of SPREP include conservator of biological diversity, global climate change, marine pollution, coastal zone management, environmental education and planning and management for sustainable development.

SPREP is playing a significant role in preparations for the global conference on the sustainable development of small island developing states.

New Zealand in addition to its membership of SPREP is financially contributing towards the process and is expecting to play an active role in the conference and the outcomes.

New Zealand's financial resources, in an international context, need to be spread wisely but will of necessity be spread thinly.

The quality of our contribution will often be in the quality of our advocacy.

For example one New Zealander, David McDowell, a former director general of the New Zealand Department of Conservation, and most recently New Zealand's ambassador in Tokyo, has just been appointed director general of the International Union for Conservation of Nature and Natural Resources (IUCN).

The IUCN, know as the World Conservation Union, was heavily involved in the process which led to the Biodiversity Convention and the Convention on International Trade in Endangered Species of Wild Flora and Fauna.

New Zealand as a country is dependent on trade. We are committed to the liberalisation of the multilateral trading. We, perhaps selfishly but believe reasonably, recognise that strong protection of the global environment is necessary to maintain New Zealand's natural resource base in order to ensure its long term economic viability.

New Zealand strongly supports multilateral efforts to make trade and the environment mutually supportive.

New Zealand is participating in the OECD joint session of trade and environment experts and the GATT environmental measure and international trade group. New Zealand played a full role in efforts to identify the trade and environment agenda following the establishment of the world trade organisation in April, 1994 and will maintain and active involvement in this work.

New Zealand was one of the countries instrumental in developing and concluding at the United Nations conference on Environment and Development, a statement of principles for a global consensus on the management, conservation and sustainable development of all types of forests.

The question now challenging the international community is how to expand upon this sound base.

New Zealand is keen to continue its co-operation in the global dialogue on international forestry issues as we are on environmental and development issues generally.

We believe that our country has a contribution to make, we have views to express and experiences we want to share with other countries. Perhaps we may not always get it right the first time but as politicians we are committed (at least on this issue, setting aside our party differences) to the cause.

We draw on our indigenous people, the Maori, for their balance and wisdom. 1994 has been marked in our country by the passing of one of our great leaders, Dame Whina Cooer. In many ways she was representative of New Zealand.

She was small in size but capable of generating debate, and provocative yet thoughtful, especially on issues that she felt passionately about.

Long before it became fashionable to do so, she spoke up for the environment, for Tangata Whenua, for land rights and for the voice of women and the urgent need to bring people of varied cultures together as one voice.

She became a leader for New Zealanders primarily through her work within the New Zealand Maori Women's Welfare League and I would like to conclude today by quoting from the creed of that organsiation from which I draw inspriration on environmental issues.

"My first love is my family but I love my tribe, I know my tribe but I am proud of my race, I am proud of my race but I am not racist, therefore I belong to my race but I would serve my nation, I would serve my nation but I have a reverence for humanity, because I have a reverence for all humanity I would oppose inhumanity anywhere and everywhere, it is because I have this reverence for humanity that I grieve for all who now suffer, and pray for all people, it is because I believe in God that I have this reverence for humanity, this is my destiny, this is my prayer.

Mr. President, I would to thank you again for the opportunity to speak to such a distinguished audience today and to make a small plea on behalf of my fellow countrymen and women.

We would consider it a great honour to be considered as a host country for this most important conference in the near future.

SPEECH

OF

SENATOR HEHERSON T. ALVAREZ

OF

THE PHILIPPINE SENATE
ON BIODIVERSITY
AT THE EAPPCED II
PHUKET THAILAND

Speech of Senator Heherson T. Alvarez of the Philippine Senate, on Biodiversity at the Second East Asia and Pacific Parliamentarians Conference on Environment and Development, Phuket, Kingdom of Thailand, April 20, 1994

Distinguished Delegates, Friends.

The topic I have been assigned to discuss today in this Second East Asia and Pacific Parliamentarians' Conference on Environment and Development is of biodiversity. Allow me, distinguished colleagues, to convey to you the warmest greetings from the Republic of the Philippines, itself a quintessential area of diversity: of life forms, life and death struggles of cultures, tongues and opinions, of thousands of islands, and thousands of species of flora and fauna and more than 65 million Filipinos who cohabit with you in this most economically dynamic region of the world, the Asia Pacific region.

It is fitting that this historic conference on the environment should be held "in this kingdom by the sea", and particularly in Phuket, now famed as one of the most impressive places for eco-tourism in our part of the world.

We have often been told, and now, slowly, we have perhaps begun to realize that the number one problem of the world today is the global problem of human survival arising not from the irrational tendency of people to wage wars against each other but, more urgently, from the growing trend of humankind to be at war with nature and the environment.

I use the phrase guardedly, "global problem" because you and I can easily agree that it is precisely that. Necessary as the efforts are of the environmental movement to focus on purely local problems, and the tremendously beneficial environmental literacy projects which have proliferated in many places, sooner or later there must be a decisive and collective effort among the parliamentarians of the world to address the problems themselves in terms of effective law and public policy.

I, therefore, congratulate the organizers of the conference we are holding here for advancing the solution-effort in the right direction.

Distinguished delegates, on the part of the Philippines, may I inform you that biodiversity conservation is a mandate embodied in the very constitution of our republic, the 1987 constitution. Two years ago, we made part of the law of the land what we call the NIPAS Act (June 1992), referring to the National Integrated Protected Areas System law. We have established a national list of rare (R), endangered (E), threatened (T), vulnerable (V), indeterminate (I), and insufficiently known (K) species of Philippine wild birds, mammals, and reptiles. We do have a full-fledged cabinet-level department on environment and natural resources in the executive branch of government. And we have, at long last, drafted a strategy for biological diversity conservation. We are a signatory to the CITES treaty, the Ramsar Convention and the Bonn Convention. Last year (May 31, 1993), , our Philippine Senate ratified the United Nations Convention on Biological Diversity.

With you all, we are pushing for greater awareness among our people that the unique nature of life is in its diversity. Life is unique precisely because it is diverse. The recognition and respect for every form of life, the diversity of fauna and flora and of nations, ethnic groups and languages included, must be recognized as a decisive condition for the preservation of life on this planet.

There was a time, we know, when earth itself was a bleak place because it was strictly an inorganic pure geosphere. In time, however, by the energy of the sun which relentlessly bombarded the surface of the bleak, inorganic earth, chemical and physical actions produced the first evidence of life and a "zone of life" at the outer layer of our planet which we now call the biosphere.

We also know that through a long course of time, certain life forms like plants developed interrelationships with other plants, and in association with them, developed interrelationships with more complex organisms like animals, and formed biotic or living communities of interdependence with each other, and with the abiotic or non-living environment to form various ecosystems which in turn promote the cycles of nature including the various roles of producers like green plants, consumers like all animals, and decomposers like the various micro-organisms that break down the remains of plants and animals into simpler components for recycling in the biosphere.

Distinguished delegates, it is not my intention here to give an elementary dissertation on the biology of natural systems with which you are most familiar, but merely to point out that biological diversity must be seen as one of the constitutive and defining aspects of biology and life itself. If we do not arrest the present trend towards loss and diminution of biological diversity we ourselves are sure losers for lack of access to the materials we need for food, medicine, industry and environmental health.

Biodiversity is being eroded faster today, perhaps, than at any time during the Jurassic Period and the extinction of dinosaurs millions of years ago. We are told that the tropical rainforest, which is believed to be the center of biodiversity, is being destroyed at the rate of close to 10 millions of hectares every year in tropical countries with all that this entails in terms of habitat destruction. Scientists tell us that about 60,000 of the world's innumerable plant species, including a large number of vertebrates and insects, are candidates for extinction the next couple of decades unless deforestation is decisively arrested.

A tropical country, the Philippines is one of the richest centers of biodiversity in southeast Asia. Its forests are among the world's richest with some 15,000 species of plants, of which 3,800 are endemic to the country. Who has not heard at one time or another of some of the hardwoods for which the Philippines used to be quite famous: apitong (dipterocarpus grandiflorus), tanguile (shorea polysperina), red lawa-an (pentacme contorta), yakal (shorea astylosa) and a whole host of others?

Sadly, though, a great percentage of our endemic plants may already have become extinct by now because our virgin forests which harbored a lot of these endemic species are now down to 900,000 hectares, from a high of 12 million hectares some 25 years ago.

As to fish species, some 2,000 different kinds still thrive in Philippine waters. Likewise, 488 coral species in 78 genera are found in my country out of the 500 known coral species worldwide.

There are only about 40 species of seagrasses in the world. At least 16 of these are found in Philippine waters, and of the 16 species, 11 occur in Philippine Reefs.

Regarding the country's faunal diversity, distinguished delegates, may we inform you that we have 556 species of birds, some 240 species of mammals, 186 species of reptiles, and 16,704 species of insects.

Again, very sad to admit, 25 bird and animal species are already considered threatened and we have classified 18 as endangered.

Likewise, all five species of marine turtles in my country are endangered due to indiscriminate hunting, excessive harvesting of eggs, and disruption of nesting sites. And, two of our crocodilian species (dylus and c. porosus) are also endangered at this time.

We now have, however, a total of 61 national parks, 2 marine parks, 8 game refuges and bird sanctuaries, and 10 wilderness areas covering an area of 1.5 million hectares. That is equivalent to 4% of the country's total land area.

Our master plan or "The Philippine strategy for biological diversity conservation" (PSBDC) lists down 18 broad objectives intended to tackle the issues and concerns on biodiversity policy, sustainable use, sustainable agriculture, biotechnology and property rights, community based management, participation of local and private sectors, on-site and off-site conservation measures, biodiversity inventory and research, recognition of ancestral domain and traditional wisdom, public education and awareness, and institutional capacity-building.

In the Philippines, we have ventured on a modest start towards implementing our country strategy for biological diversity conservation. The Philippine Senate is now deliberating on a bill which seeks to protect and conserve wildlife species in the Philippines and to enhance their biological diversity through the regulation of collection and trade of wildlife in the country.

With this bill, the secretary of the Department of Environment and Natural Resources will be in control of several types of permits for regulatory purposes: 1) wildlife farm permit; 2) wildlife collector's permit; 3) gratuitous permit for foreign and local collectors; 4) Transport permit; and 5) export permit.

This prospective law will also prohibit the introduction, reintroduction or restocking of wildlife species except for scientific or educational purposes in which case a gratuitous permit shall be required.

It will also mandate the regulation of the use of economically important species. A regular census of the population of such species will be conducted and on that basis an allowable level of harvestable volume will be determined.

Designated critical habitats will be protected from any exploitation including, naturally, the endangered species within those habitats.

Henceforth, biodiversity conservation efforts will be the subject of more legislative measures.

Distinguished delegates, I need not belabor the fact any further that biodiversity of species has become more vital for food and medical needs of the human race. Animals provide some 55% of protein requirements in developed countries and some 20% in developing nations. In addition, almost 50% of prescription drugs come from plant and animal species. All prescription and nonprescription drugs derived form plants are valued at some $40 billion annually. Traditional medicine forms the basis of primary health care for about 3 billion people, or roughly 80% of the populace in developing countries.

Distinguished delegates, most decision-makers do not fully appreciate the values of biodiversity. It is, therefore, not surprising, that they fail to incorporate these values in the development of public policy, Moreover, the majority of the general public still remains reluctant to adopt policies which seek to reduce excessive resource utilization and exploitation. Furthermore, and needless to say, we have yet to promulgate a single positive human law that is truly self implementing. There simply is none.

But nothing can stop us, the parliamentarians of East Asia and The Pacific, from proclaiming loudly and clearly in this conference that the highest value we seek now is the value of human life itself.

In the Bible story, before the proverbial deluge, Noah was required to gather two each of the wide variety of species for salvation. Thus, it was already very clear, even then, that the saving of human life from any deluge or disaster requires the prior saving of biological diversity to ensure the continuity of life itself.

Whatever our faith or ideology, distinguished delegates of this conference, I am confident we can all agree that the highest value is reverence for life itself. We must apply this attitude not to some or a few, but to all life forms.

No life form is an island. None stands alone. Only when we know this can we be sure of the continuity and salvation of our very own life on this planet because we would have then learned to care not only for ourselves but for all the life there is.

THANK YOU VERY MUCH AND GOOD DAY!

RESOLUTION

Recommending a ministerial level conference, to be held in Manila in February 1995, of Asia-Pacific leaders to draft a regional climate change action Agenda 21, in preparation for the April 1995 conference of parties to the climate change convention in Berlin

WHEREAS, global warming is expected to cause changes in climate, altering rainfall patterns and the world's weather system;

WHEREAS, the rise in temperatures will cause sea level to rise, rendering island nations virtually uninhabitable, and will flood many of the world's highly productive deltaic areas, drastically diminishing availability of food and water;

WHEREAS, these risks posed by global warming and climate change have been the subject of a series of international conferences and scientific studies;

WHEREAS, in 1974, the World Meteorological Organization (WMO) established an executive council of experts to look into the issue of climate change;

WHEREAS, in June 1980, the Philippines held an organizational meeting for the Technical Conference on Climate Program for Asia and the Pacific;

WHEREAS, in 1985, in Villach, Austria, a conference on Greenhouse Gases (GHG) and Climate Change categorically stated that indeed, climate was changing as a result of increased emission of carbon dioxide and other GHG;

WHEREAS, in November 1988, the WMO, in cooperation with the United Nations Environment Program (UNEP) set up the Intergovernmental Panel on Climate Change (IPCC);

WHEREAS, the Philippines hosted the First Asia-Pacific Climate Change conference on November 20-24 1991 which assessed the impacts of climate change to the various ecosystems in the Philippines;

WHEREAS, also in 1991, the Asian Development Bank (ADB) designed a regional study on global environmental issues to develop country studies and national response options to climate change in eight Asian nations-Bangladesh, India, Indonesia, Malaysia, Pakistan, Philippines, Sri Lanka and Vietnam;

WHEREAS, the study, entitled "Climate Change in Asia" described the possible effects of climate change in the Asia-Pacific Region by the year 2070;

WHEREAS, in Bangladesh, for example, a 45 cm sea level rise will cause about 11% of the area and 5% of the present population to be under threat of inundation;

WHEREAS, in Indonesia, the total area expected to be lost to sea level rise is estimated to reach 3.4 million hectares, costing the Indonesian community $11.3 billion annually in sacrificed socio-economic activity;

WHEREAS, in the Philippines, climate change is expected to effect changes in the pattern of El Nino and in the frequency, intensity and storm path of tropical cyclones, aside from its agricultural impacts;

WHEREAS, these findings that calculate the damage to agriculture, marine and other ecosystems with the expected occurrence of the rise in seawater level substantiate the serious danger that climate change poses to the world and the human race;

WHEREAS, climate change is a global problem that requires an international and coordinated approach;

Now, therefore, be it resolved, as it is hereby resolved, to recommend a ministerial level conference, to be held in Manila in February 1995, of Asia-Pacific leaders to draft a regional Climate Change Action Agenda 21, in preparation for the April 1995 Conference of Parties to the Climate Change Convention in Berlin.

Adopted

Heherson T. Alvarez
SENATOR
Republic of the Philippines

Sponsorship Speech of Senator Heherson T. Alvarez of the Philippine Senate on the resolution Recommending A Ministerial Level Conference of Asia Pacific Leaders To Draft A Regional Climate Change Action Agenda 21, Phuket, Kingdom of Thailand, April 20, 1994

Distinguished Delegates, Friends:

Anticipating the imminence of the Framework Convention on Climate Change, The Asian Development Bank in 1991 conceived the idea of organizing a region-wide effort to enhance the capacity of participating developing countries to build effective national strategies that respond to climate change. With financial support from the governments of Australia, Japan and Norway, the ADB designed a regional study on global environmental issues to develop country studies and national response options to climate change in eight Asian Nations: Bangladesh, India, Indonesia, Malaysia, Pakistan, Philippines, Sri Lanka and Vietnam. Collectively these eight nations contain about a fourth of the earth's population, and perhaps an even larger proportion of those most vulnerable to climate change and associated sea level rise. The Climate Institute of Washington, D.C. and its 12-nation team, with the climate change scenario developed by the atmospheric research division of the Australian Commonwealth Scientific and Industrial Research Organization (CSIRO), developed detailed analyses of their country's Vulnerability to climatic or weather related events, the potential impacts of climate change in 2010 and 2070, and estimates of national experts evaluating the technical and economic feasibility of options to adapt to climate change and to limit greenhouse emissions or enhance their sinks.

These options analyses culminated in national response strategies that were presented to national workshops or intergovernmental committees in each country. In each case, the respective governments have endorsed the study results or signified their intent to do so, making the study "climate change in Asia" a step forward in the region's efforts to respond to climatic change.

In the next century, climate change resulting from a build-up of concentrations of greenhouse gases in the atmosphere may profoundly affect both human activity and natural ecosystems. This anticipated change in climate is an especially important concern in Asia and The Pacific where such climatic phenomena as the monsoons, the El Nino-Southern Oscillation Phenomenon (ENSO) and tropical cyclones (called in some countries typhoons) play such a large role. Storms, floods and droughts are ongoing concerns for many Asian Pacific nations whose human settlements and agriculture are already greatly affected by climatic variability.

From a global perspective, climate change is also an important concern for Asia. Although the industrialized nations of the north have up to this point been largely responsible for the build-up of greenhouse gases, Asia is likely to be an increasingly important contributor to worldwide anthropogenic greenhouse gas emissions. The nations of the Asia Region are understandably unwilling to sacrifice their development goals for a problem largely caused elsewhere. The use of more efficient energy technologies, up-to-date transportation systems, and sustainable forestry and land-use techniques, among other. Strategies, may however provide a way whereby these countries can develop and yet avoid contributing to this critical global problem.

(Please refer to Annex "A"-Table 1. emissions inventory summary)

Among the countries studied, fossil fuel combustion is currently the largest source, although agriculture emissions are largest for three of the eight countries. Energy-related emissions are also expected to grow most rapidly, with significant increases expected in the next 20 years.

These emission inventories were part of the basis for assessing options to mitigate climate change.

The increased rainfall in the future is expected to lead to increased surface run-off with severe consequences for flooding in Bangladesh. In general, a 10% rise in total rainfall will increase the run-off depth by 18-22% depending on the region. Drainage congestion and flooding, therefore, are expected to intensify in terms of area affected, duration and depth. On the other hand, sea level rise will be less than that expected so far. About 11% of the area of the country and 5% of the present population are under threat of inundation and loss of land if a 45 cm sea level rise occurs by the year 2070. For a 1 meter rise, respective figures are estimated to be 21 and 141%.

(Please refer to Annex "B"-Figure 5. Sea level rise in Bangladesh, 2070 D).

The Indonesian country study assessed the socio-economic impacts of sea level rise on populations, Land use, agriculture, physical infrastructure and communication, human health, coastal zones, and identified forestry and a number of resources, geographic areas, and human populations as particularly vulnerable. This assessment assumes that no special efforts to adapt to climate will be taken during the time period covered in the study. However, estimates of impacts and damages are deliberately conservative.

(Please refer to Annex "C", Figure 7. Areas where climate change is expected to have significant socio economic impacts)

In 1990, there were just over 2 million people living within a 2-meter elevation of the sea in settlements along the shore. Altogether, demographic projections suggest that 3.3 million people may be displaced by flooding and inundation of these low-lying settlements by the year 2070. The cost of replacing or rehabilitating approximately 800,000 homes and resettling them is estimated at US$ 8 billion.

Given a 60 cm rise in sea level, 800,000 hectares (ha) of irrigated rice fields, and an estimated 20% of the 5.5 million hectares of marshlands currently used for tidal rice fields and other economic activity are expected to be lost, including all of the 300,000 of coastal fish ponds. Fully 25% of both the country's 4 million ha of mangrove forests and 800,000 hectares of urban housing and office property are expected to be lost. The estimated total area lost totals 3.4 million hectares, costing the Indonesian community $11.3 billion annually in sacrificed socioeconomic activity.

The Philippines is most vulnerable to the projected increase in the frequency of severe weather events such as typhoons, floods, storm surges, and droughts, and the expected rise in sea level.

(Please refer to Annex "D", Figure 3.1.2-Flood and storm surge prone areas-Philippines)

The impacts of sea level rise by 2070 include the probable submergence of small islands, some reclaimed areas in Metro Manila and Metro CEBU, some foreshore districts in Manila, and bay shoreline area outside Metro Manila. Some portions of the Laguna De Bay Lake Shore, where agricultural and aquaculture activities are dominant, are expected to be adversely affected. These will be compounded by frequent seasonal flooding due to heavy rains brought about by typhoons and the intensified southwestern monsoons.

The impacts on agriculture are expected to be more serious in areas vulnerable to typhoons and floods, areas frequently visited by droughts. Those near coastal areas most vulnerable to storm surge and salt intrusion. The projected net effects on plant productivity of increased CO2 and temperature are found to be limited. Higher rainfall scenarios for 2010 and 2070 may affect wetland crops due to floods and typhoons. High temperatures may affect animal and livestock production due to increased magnitude and frequency of extreme temperatures.

It is expected that extreme seasonal flooding brought about by higher rainfall and more intense typhoons could occur in 2070 during the wet season, while extreme dry conditions could prevail during the dry season, especially during El Nino Southern Oscillation (ENSO) episodes. Increased sedimentation will increase the cost of hydroelectric and irrigation dam management.

The initial socioeconomic assessment of climate change impacts indicates that about 16 million people will be affected (about 27% of the total 1922 population). However, the number of people that are really at risk is estimated to be over 5 million (30% of the projected number of people affected). If mitigation and adaptation measures are put in place, people at risk will be reduced to about 3.3 million or 20% of the number of people affected.

The preceding horror scenarios of climate change impact on Asia-Pacific is a virtual declaration of war by nature against human society. But the global warming which results in climate change was a declaration of war against nature by industrializing societies 250 years ago.

Those industrialized societies and others trying to catch up by using the earth-unfriendly technologies of industrialization have also waged war against nature by threatening and endangering floral and faunal species and their habitats and eco-systems, including the indigenous peoples who have continued to live in harmony with nature.

Global warming and extinction of biodiversity by industrialization threatens the very essence of development in nature: the co-evolution of floral and faunal species, including man, with each other.

There must be a decisive and collective effort among world parliamentarians to address, in terms of effective law and public policy, the global problem of the growing trend of humankind at war with nature and with those who live in harmony with nature primarily the indigenous peoples.

The time is now.

Let us declare peace with nature and learn to live in harmony with the nature caring ways of the indigenous peoples.

I vigorously propose that a public policy action be taken by this historical conference.

Let us all adopt a resolution recommending a ministerial level conference in Manila in February 1995 of Asia-Pacific leaders to draft a regional climate change action agenda 21 in preparation for the April 1995 conference of parties to the climate change convention in Berlin.

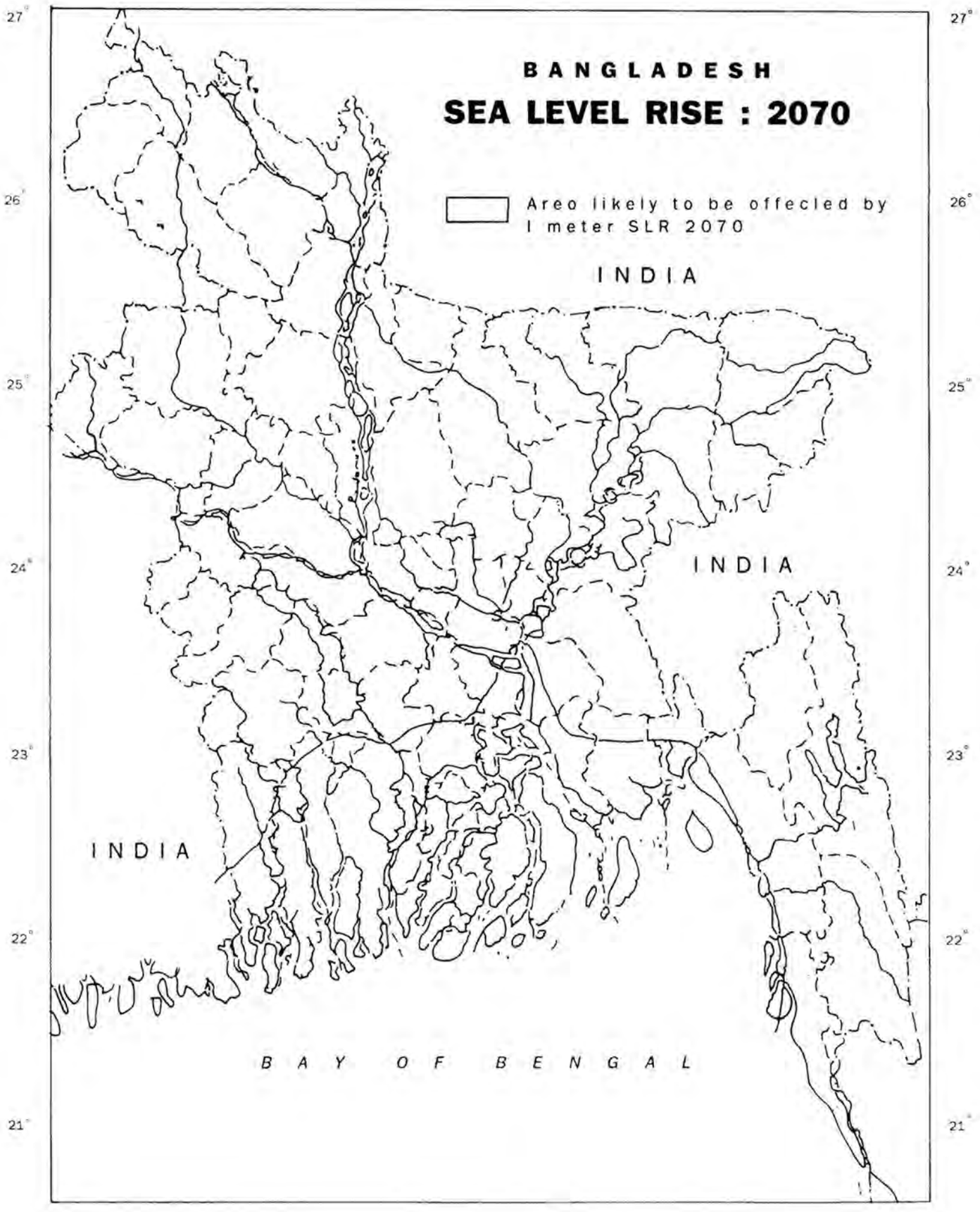
Thank you very much and good day!

Table 1 Emissions Inventory Summary

Annex A

Country	Current Emissions (Gg CO2- Equivalent)	Per Capita Emissions (tons-person-yr)	Comments
Bangladesh	51,389-88,048	0.46-0.78	Agriculture accounts for about 76% of emissions.
India	817,115	0.94	Fossil fuel combustion accounts for about 78% of emissions.
Indonesia	659,587	0.7	Land use accounts for 70% of emissions.
Malaysia	121,367	7.1	Emissions from fossil fuel combustion only.
Pakistan	114,557-128,637	0.95-1.1	Fossil fuel combustion accounts for about 55% of emissions.
Philippines	75,196-88,638	1.3-1.5	Fossil fuel combustion accounts for about 45% of emissions.
Sri Lanka	17,677	1.0	Agriculture accounts for about 38% of emissions.
Viet Nam	84,938-112,438	1.3-1.7	Agriculture accounts for about 44% of emissions.
Total	**1,941,823-2,033,504**	**1.1-1.2**	**Fossil fuel combustion accounts for about 65% of emissions.**

SOURCE: Gibbs, 1995/COUNTRY STUDIES.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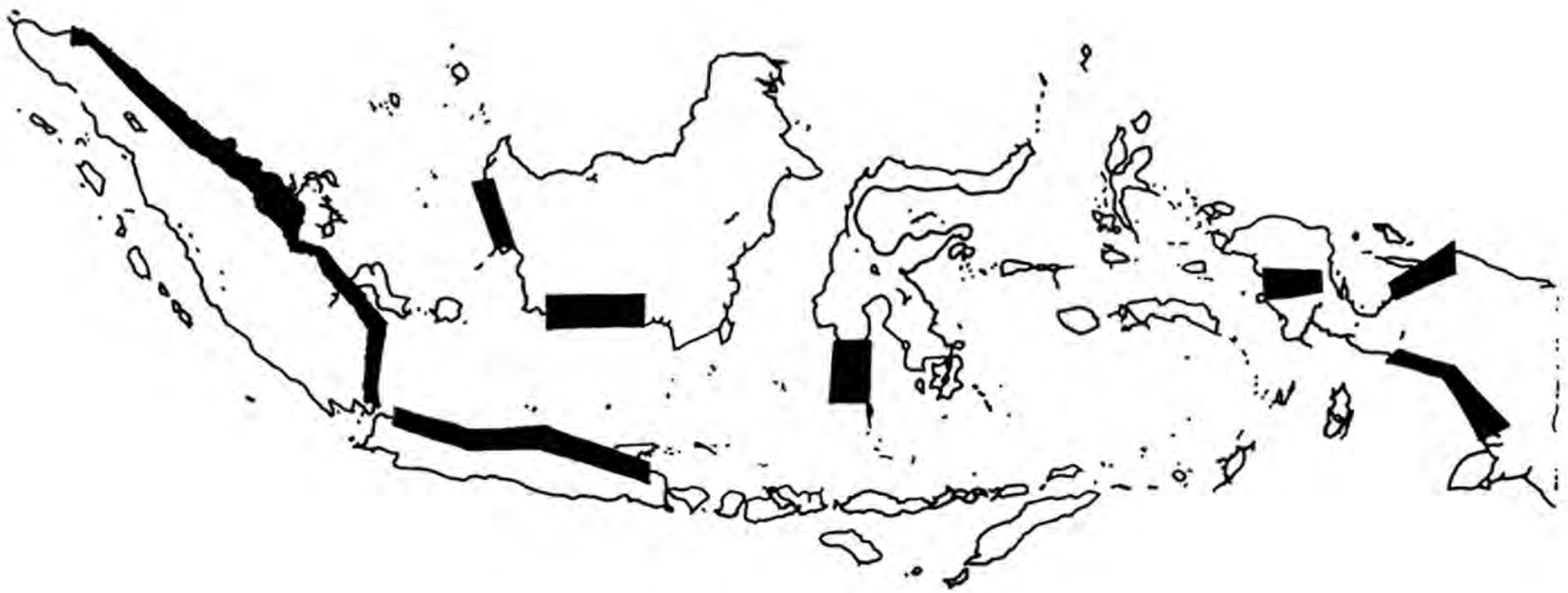

Figure 7

Areas where climate change is expected
to have significant socioeconomic impacts

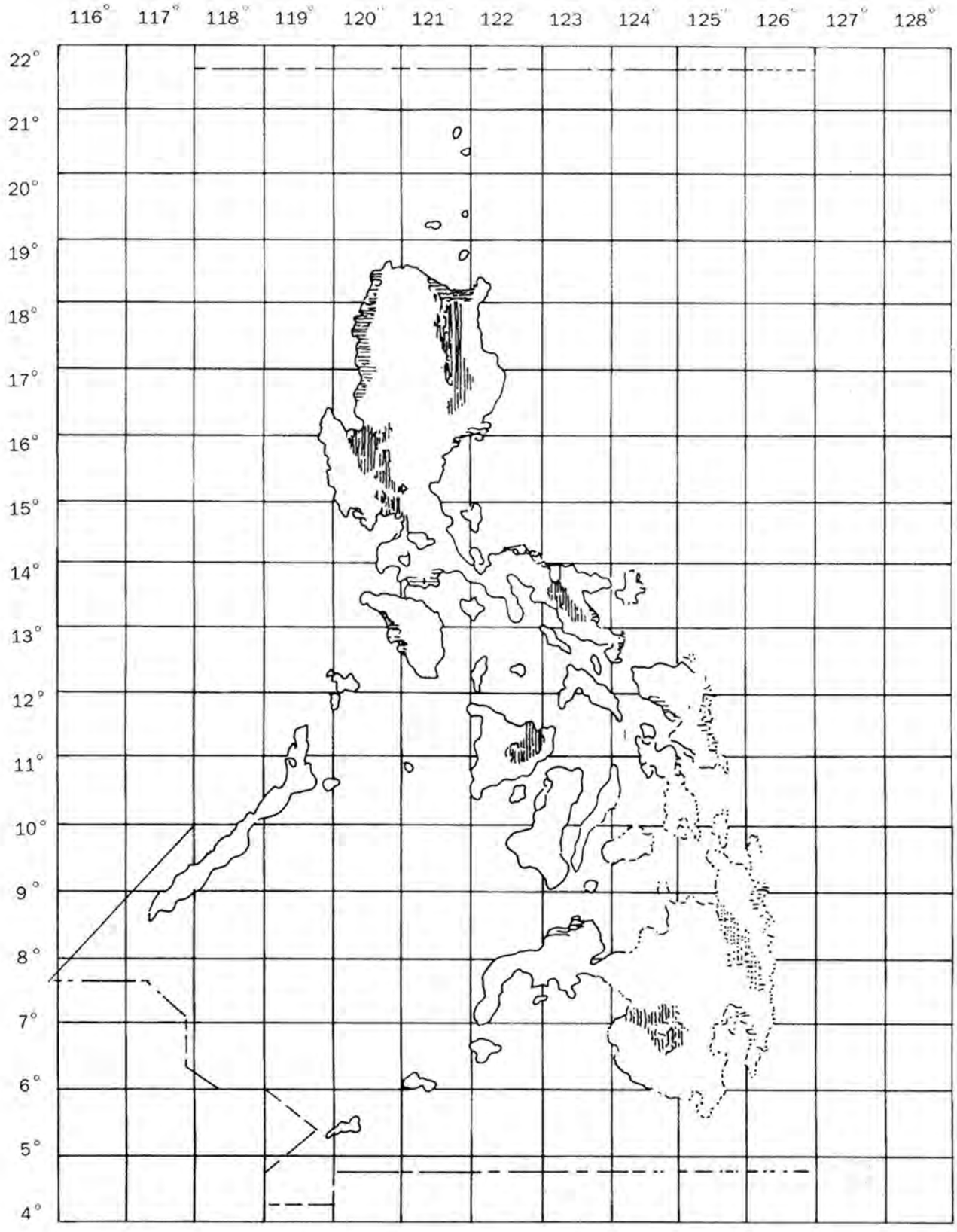

FIG.3.1.2 Flood and Storm surge prone ares.

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0 100 200 300 400 Km.

LEGEND:

Actual Problems of Environmental Protection in the Pacific Region

by

Dr. Michael Lemeshev, Professor, and Member of Russian Federation

Russia, as all the world, is giving special attention to the problem of stopping the storage of radioactive waste in the marine environment.

Russia will be consistently following a course for the strict observance of the London Convention's regulations on the prevention of sea contamination by such wastes or other materials (1972) and also on the IAAE demands and other international legal commitments. The starting-point of this course was the Governmental Committee on the question of, burial in the sea of radioactive wastes, and its report, on which basis was built and promulgated the White Book.

Attaching principal importance to honesty and sincerity in this sphere of international collaboration, the Russian Federation has presented to the Secretariat of the London Convention and to the IAAE the information about all burial of radioactive materials in the seas within its territory.

Russia is actively participating in constructive discussions about announcing a moratorium and in the end a ban on the storage of radioactive wastes, about revising the London Convention with the purpose of consecutive movement to this ban. And, Russia is working out a similar programme for reduction and in the end an exception for storage of wastes with the lowest level of radioactivity. It is the basis for the cardinal decision of the whole set of questions connected with the storage of radioactive wastes in the sea. With the realisation of this programme, Russia will develop its position on the questions of a moratorium and on a ban of storage of radioactive wastes in the sea.

Russia is open for financial and technical participation by foreign partners in the liquidation of the burial's consequences of radioactive wastes in the seas, and also for the joint creation of the technology and means for the treatment and storage of radioactive wastes.

Russia is ready for constructive participation in the world association's efforts (on the nongovernmental and intergovernmental levels) to reach a decision on the problem of safe burial of radioactive wastes in the sea, and monitoring for this would be a positive moment, to which could be added coordinated measures of confidence and verification. Russia will conduct a practice inspection of submerged areas with Russian ships and with the participation of home and foreign specialists. In 1993, joint research was conducted by Russian and Norwegian experts with IAAE participation at burial places in the Kara sea.

We are now finishing preparations for a Russian-South Korean-Japanese expedition to the burial places of radioactive wastes in the Japanese Sea.

Russia, like the 179 state participants in the United Nations Conference on Environment and Development (in Rio, July 1992), has approved of the programme of world environmental cooperation, Agenda 21, taking on itself political responsibility for its execution. Agenda 21, in particular, outlined ways and methods for reaching decisions on the problems of waste disposal. Efforts of Russia in this regard must be an organic part of the common efforts of the world association.

PROF. VALERY N. RASTORGUEV

DEPUTY OF UPPER CHAMBER (COUNCIL OF FEDERATION)
OF THE RUSSIAN PARLIAMENT

GLOBAL ENVIRONMENTAL PROBLEMS AND NEW HORIZONS OF SOCIAL REGIONAL POLITICS

In light of the United Nations Conference on Environment and Development (UNCED 92), new problems are under development in Russia related to interactions between urgent environmental problems and socio-economic problems of particular regions. The delegation of the Russian Parliament is glad to participate at the meeting in Thailand where real progress is seen in regional development.

Our delegation is aware of the great activity in Thailand concerning the United Nations Environmental Programme (UNEP), the International Geosphere-Biosphere Programme (IGBP) under the International Council of Scientific Unions (ICSU), the World Climate Research Programme (WCRP) under the World Meteorological Organization (WMO), the Human Dimensions of Global Environmental Change (HDGEC) under the International Social Science Council (ISSC), etc.

New advancements are obvious here in Thailand, where your Government and citizens do understand their responsibility for surviving future generations. All this gives the hope that Thailand will be known not only as one of the greatest regions of tropical forests and a famous area of international tourism, but as an example of the region where the concept of sustainable development is under way.

The Russian delegation represents here the country which is often named as being at a natural and historical crossroads. The quality of life and its preservation throughout the world are to a great extent dependent on the environmental state and development of the Russian EuroAsian continent. As an example of relations between local environmental problems and their global consequences, the watershed systems in the Russian terrain may be indicated: should their arteries not be fed naturally or be contaminated by chemicals in their sources, an overall catastrophy will inevitably take place since a deficiency of water supply will lead to a larger scale of the phenomena than only within a particular region.

Therefore, water sources are to some extent painful points of the planet Earth. Conducting the diagnosis of the points by their monitoring and modelling, an opportunity appears to understand possible dangerous tendencies in the ecosystem dynamics and to avert or at least to minimize their consequences. This is a milestone of the Russian Federal Programme, to secure sources of pure water by Geoinformation Systems (GIS) integrating data bases of remote sensing and ground measurements.

Given the nature of the problems which now confront us as a community of nations, we are now more than ever bound together by a common destiny. This means that international institutions and national governments must become more accountable and responsive to the views and expectations of the world's people as a whole. It means at the same time that we must move further in the direction of a global democracy. Thus, problems of land use and cover change are closely related not only to the problems of global climate and environmental changes, but also to the problems of global democracy as well.

The Russian Federal Programme of saving the Great Watershed (the great area where Volga, Dnieper, Western Dvina/Daugava have originated from), covering the area between three seas (the Caspian Sea, the Black Sea and the Baltic Sea), is one of the most important Federal Programmes that was adopted by the Russian Parliament. The territory of the Great Watershed is almost completely coincident with the administrative borders of Tver region, the largest in the European terrain of Russia. We understand in Russia that the security of this unique region is far from being a narrow regional problem. The problem is wider and is connected with the roots of the people living in the territory.

The security of the area, where the main sources of pure water in the European terrain of Russia are stored, is directly related to general and professional culture of local population, called the way or style of life. The nature protection of the area is adjusted by the unique boreal forests of this zone and natural purification ability of mosses and lichens there. That is why urbanization of the area should be considered as a negative interference into natural processes and must be forbidden by laws.

A road map to sustainable development is now taking shape in accordance with the Agenda 21 of the 1992 UNCED Earth Summit in Rio de Janeiro, Brazil, as a guide for business and government policies and for personal choices into the next century. The Agenda 21 explains that population, consumption and technology are the primary driving forces of environmental change. But the problem is not only in reducing wasteful and inefficient consumption patterns. It is also in human dimensions, i.e. social, cultural and ethnic development that implies sustainable development without additional threats to traditions and habits. The complexity of possible environmental change and the human dimensions leads to the urgent necessity to understand the relevant problems and to switch to a high life-supporting capacity that is a natural aspiration of the world's community for high standards of life, but sometimes contradictory to nature protection.

Agenda 21 provides options for combating degradation of the land, air and water, and conserving forests and the diversity of species of life. There are roles for everyone: governments, business people, trade unions, scientists, teachers, indigenous people, women, youth and children. We are striving in our Federal Programmes to have in mind these very complicated problems touching different layers of our society.

Principles of sustainable development and the responsibility for social politics not only for a region, but for the whole country as well, are overlapping. The most important among the principles is, to our mind, the confirmation that existing natural, ethnic and cultural variety is of the greatest value. Other principles and politics are needed to follow them. The assertion of the environmental problems and relevant regional and Federal politics in the context of miscellaneous regional problems enables us to put a particular person in the centre of sustainable development. Actually, political, institutional and other groups and parties would have their own interests, but the primary unit is the indigenous people and their interests in consumption, health and education, cities and farmers.

In fact, the preservation of natural, ethnic and cultural variety is understood as the most important criteria to estimate any activity within the politics, economics, and social fields. The criteria are necessary to be taken into account: otherwise, social shocks among different population groups might be anticipated. Unfortunately, they were not often utilized earlier in our country because of former stereotypes when political pressure was prevailing before the healthy sense.

The protection of natural, ethnic and cultural heritage is an overall problem that requires all healthy forces of the world to be united in spite of the particular variety as well as natural diversity that are local as a rule. Besides that, the variety would be as a unity: ethnic groups that have lived on a particular ground for hundreds of years serve as the only guarantee to preserve existing variety; and the unity of natural and professional culture, habits, traditions, knowledge would guarantee the preservation of ethnic variety.

Developing the concept of socio-economic and environmental politics in Russia under the existing press of economic crisis and political instability, we understand that only the general and overall social orientation may result in mitigating the current difficult situation and in fostering new international rules without global withstanding and separatism. It is thought that our respectable hosts from Thailand do share this our opinion.

The history of people in Thailand and their progress in current political and economic situations give an excellent example of the wise politics. We do hope that the humanistic culture of Russian and many other multiethnic populations in Russia along with proper oriented governmental politics will lead to success in on-going Russian reforms.

THAILAND COUNTRY REPORT

By

DR. ART-ONG JUMSAI

Member of Parliament
Member of the House Committee on Energy
Secretary to the Minister of Foreign Affairs

Thailand Country Report

by

Dr. Art-ong Jumsai, Member of Parliament
Member of the House Committee on Energy
Secretary to the Minister of Foreign Affairs
Presented to EAPPCED II in Phuket
April 23, 1994

Population

The main cause of most of the problems in our environment is over-population. Ten thousand years ago, we had an estimated world population of 5 million. Thirty three years from now, we will have a population of around 10,000 million as shown in the following table:

Year	World Population (Estimated)
8000 B.C	5 Million
0	130 Million
1850 A.D.	1,000 Million
1930 A.D.	2,000 Million
1987 A.D.	5,000 Million
2027 A.D.	10,000 Million

Thailand has been very conscious that the biggest factor in environment problem is the increase in population and has set up very effective programmes in family planning and population control with the help of very active non-governmental organisations. In the 1960's, the growth rate of the population was over 3%. The present situation as computed on the Population Card from the United Nations Population Fund is as shown:

Thailand's Population	11.40 pm 20th April'94	58,626,456
	4.40 pm 21st April' 94	58,627,941
During these 17 hours, the population increased by		1,485

This represents a growth rate of 1.3%.

With more people on this planet, there will be a greater demand on food and energy. More energy means more pollution. The present consumption of electricity requires a generation capacity of 10,000 MW of electricity and every year, an increase of 1,000 MW is required. Since most of this electricity generation uses fossil fuels, our country faces serious problems in environmental pollution. Carbon dioxide emission contributes further to the Green House effect. Sulphur dioxide, Nox creates acid rain and health problems to the people living near the power plants and the present government has decided to spend a lot of money to install S02 scrubbers. With an increase in population, more agricultural land is required and forests are destroyed. 50 years age, 60% of the land area had forests. Now, forests fill up only 20% of the land area in Thailand. In late 1988, the Parliament approved a government bill to stop all logging concessions. This has been effective in stopping further forest destruction.

Economic Development in Thailand

Year	Growth of Real GDP	
60-65	7.2	
66-70	8.6	
71-75	5.6	(First oil shock)
76-80	7.9	
81-85	5.6	(Second oil shock)
86-90	9.8	

This year it is expected that the growth would be 8.6.

From the above figures, we can see that the economic growth in Thailand has been one of the highest and steadiest of the developing nations. With such growth, environmental problems have been accelerating. But at the same time, this economic growth has generated financial resources which can be invested in projects to improve and protect the environment, and ultimately to establish the policies and incentives to achieve sustainable development.

Biological Diversity in Thailand

The country's biological diversity is regarded as one of the nation's–and the world's–most important assets. Over-harvesting, illegal trading of wild species, and damage to habitats are causing both the size and the variety of biodiversity in Thailand to decline. Loss of the rain forests, conversion of mangrove forests to shrimp farms, water resource development, and damage to coral reefs are threatening Thailand's indigenous biological resources.

More than 10% of the world's known animal species–4,253 out of a total of 41,600 species–are found in Thailand. But there are 111 endangered species listed. Since many species of animals and plants are endemic to Thailand, their loss is a loss to the global community. In recognition of the global importance of biological diversity in Thailand, two wild life sanctuaries, Huay Kha Kheng and Thung Yai, have been nominated as a World Heritage Reserve to UNESCO. The first National Park, Khao Yai, and the Tarutao Marine Park are also designated as ASEAN Heritage sites.

Climatic Change in Thailand

An analysis of the meteorological statistics for Thailand for the last 40 years showed indications of a rise in average maximum and minimum temperatures particularly in coastal areas in eastern and southern Thailand and an apparent reduction in mean annual rainfall–again concentrated in coastal areas. There was no indication of a change in relative humidity. We expect in the next 50 years to see many changes in the climate. Due to the changes in the pattern of El Nino Southern Oscillation (which determines the yearly variation in weather in South East Asia) and increases in convective activity, it is expected that there will be fewer but more intense rainfall events as well as increased intensity of cyclone conditions (eg. typhoons). Because of more intense rainfalls, there will be an increase in flooding. The sea level is expected to rise between 10 cms. and 30 cms.

Thailand's Commitment on Environment Protection

The 7th National Economic and Social Development Plan (1991-1996) focuses on 5 major areas of environment management policy:

1. Natural resources management
2. Environment quality
3. Energy and environment
4. Industry and environment
5. Urbanization and environment

The above plan is aimed at a more sustainable development.

In 1992, the National Assembly passed a bill to change the name of the Ministry of Science, Technology and Energy to the Ministry of Science, Technology and Environment and at the same time passed another bill on the Environmental Protection. The Bill sets up a National Committee on Environment. It also sets up an Environment Fund for use by both the private and public sectors to improve the environment. US$ 20 million

was initially alloted to this Environmental Fund and it was supplemented by a contribution of 0.4 cents/litre of oil consumption. The Bill also sets up environment protection standards and specifies areas that require special protection such as reserved forests, wild animal sanctuaries, water sources etc. A committee for pollution control was set up and a very comprehensive set of penalties for various violations of environment laws was also introduced in the Bill.

In order to protect biological diversity, the Wildlife Conservation Act of 1991 was passed by the Parliament. Apart from the prohibition of hunting, trading and ownership of specified endangered animals already in force in the previous legislation, the new law prohibits the import, export and ownership of endangered species of foreign origin. This act also promotes captive breeding of selected species of birds and mammals to help increase the population size, conserve the species and to reduce the pressure on wild species.

In 1992, yet another bill was passed by the National Assembly. The bill was for the Promotion of the Conservation of Energy. It outlines energy conservation in factories, in buildings, machinery and equipment as well as materials used in energy conservation. A fund for the promotion of Energy Conservation was set up to be used by both the public and private sectors.

Previously, in the Thai National Assembly, there was only a House Committee on Science, Technology and Energy which included environment as a part of the work of this committee. But since 1992, the House Committee has been split into three House Committees–House Committee on Environment, House Committee on Science and Technology, and House Committee on Energy. Thus, greater emphasis has been given to the work on the environmental by the lawmakers of Thailand.

Thailand's Support of International Conventions

Thailand signed and ratified the Convention on International Trade in Endangered Species of Wild Flora and Fauna (CITES).

Thailand becomes a signatory to the 1985 Vienna Convention for the Protection of the Ozone Layer and the 1987 Montreal Protocol on Substances that Deplete the Ozone Layer.

Thailand is a signatory to the Basel Convention on controlling transboundary movements of hazardous waste.

At the Earth Summit in Rio, Thailand was signatory to both the Conventions on Climate Change and on Biological Diversity.

By supporting these International Conventions, Thailand confirms its commitment to protect the environment both locally and globally.

NGOs-Partners in Sustainable Development

The task of achieving sustainable environmental management is too formidable too be left to Government alone. It is recognized that the non-government sector including student organizations has a crucial role to play if Thailand is to be successful. NGOs can mobilize public opinion rapidly and effectively. They can act as brokers between government and local communities and independently manage environmental projects. The government and NGOs can be genuine partners for progress in sustainable development.

Country Report
United States of America

by

Karen Fraser

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Washington State Legislature

Presented to

The Second East Asia and Pacific Parliamentarians Conference on Environment and Development

Phuket, Thailand, April 20-23 1994

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President Tinawat, Distinguished Delegates, and Conference Participants. I appreciate the opportunity to address you today. I regret that members of the U.S. Congress cannot be here. The Congress is currently in session, and is debating some very significant issues, which makes it impossible for its members to leave.

My remarks will be addressed to three topics:
-U.S. actions following the Rio Earth Summit
-Some trends in the United States
-Some governmental structure issues in the United States

I. U.S. ACTIONS FOLLOWING THE RIO "EARTH SUMMIT"

The Rio Conference served as an excellent stimulus in the U.S., among both government officials and the general public, to become more aware of global environmental issues and our mutual obligation to cooperate with each other in addressing those issues. Activities in the U.S. have included:

1. Creation of President's Council on Sustainability

On the anniversary of the Earth Summit, President Clinton created the 25-member President's Council on Sustainable Development, to explore and develop policies that encourage economic growth, job creation, and effective use of our natural and cultural resources.
The goals of the Council are to:

- Develop specific policy recommendations for a national strategy for sustainable development that can be implemented by public and private sectors.
- Respond to the recommendations in Agenda 21, the comprehensive international policy declaration nations of the world agreed to as a pledge to gobal environmental action.
- Sponsor projects that demonstrate and test the viability of the Council's recommendations.
- Establish links with other non-governmental organizations within and outside the U.S.
- Recognize outstanding sustainable development achievements through an annual Presidential award.
- Educate the public about the far-reaching opportunities in sustainable development.

"The Council's membership and mandate reflect the belief that is growing among business and environmental leaders that good economic policy protects the environment and good environmental policy strengthens the economy", said Jonatan Lash, Co-chair of the Council.

The Council is holding meetings throughout the country, and has developed nine draft principles which are now being circulated for public comment. They suggest ways to integrate economic progress and environmental decisions. The following are among the proposed guidelines:

- Development should respect the finite nature of many of the nation's resources.
- The elimination of poverty is essential to economic progress and environmental quality.
- Economic and environmental policy-making must be equitable, and thus ensure that all segments of society share similar environmental benefits and burdens.
- When environmental damage may be large or irreversible, prudent action is required even in the face of scientific uncertainty.
- National security depends on environmental and economic security as much as on military defense.

As part of the process set in motion by the Council, many actions have taken place throughout the country. There have been sustainability conferences in many states and communities. Many of the conferences are sponsored by governmental agencies, but many also by NGO's. There have also been many follow-up actions in terms of specific projects to improve the environment, additional efforts to incorporate environmental considerations into the curriculum of educational programs, and improved public policy.

2. Climate Convention Ratification.

The United States has ratified the Climate Convention and has developed a Climate Action Plan which includes the following:

- Returning U.S. greenhouse gas emissions to 1990 levels by the year 2000 with cost-effective domestic actions.
- Including measures in all sectors of the economy that emit greenhouse gases: carbon dioxide, methane, nitrous oxide, hydroflourocarbons, and other gases.
- Stimulating investments in the global environmental technology marketplace.
- Promoting a variety of energy conservation strategies, including tax incentives, investment in environmental technologies, and better energy program coordination and regulation.

3. The Biodiversity Convention

President Clinton has signed the Convention on Biodiversity, and it is expected to be ratified by the U.S. Senate sometime soon.

4. Global Environmental Facility Support

The United States has pledged $430 million over the next three years to help developing nations keep promises made at the 1992 Rio Earth Summit, including commitments to curb global warming and protect biodiversity. The funds will replenish a new and restructured Global Environment Facility, set up in 1991 by the U.N. Development Program, the U.N. Environmental Program, and the World Bank, to encourage sustainable development.

5. The Cairo Population Conference

The U.S. is supporting the International Conference on Population and Development, to be held in Cairo in September, and has been actively involved in preparations leading up to it.

II. TRENDS IN THE UNITED STATES

I would like to outline a few trends in the United States that involve sustainability efforts.

1. Ecosystem Management

We have a history in the United States of a very segmented approach to natural resource management. We have tended to have separate approaches by separate land management agencies and private landowners, by separate levels of government, separate professional disciplines, etc. In short, to use an old American saying, there has been a tendency for "everybody to do his or her own thing". But that fragmented approach is in the process of great change now. Through a wide variety of mechanisms, we are moving to an ecosystem approach, trying to manage large areas in a manner that takes into account their relationships with other areas and to the overall natural resource system. For example, we have many comprehensive watershed planning efforts taking place, such as river basin planning, lake management planning, and cooperative planning around inland salt water seas, including planning for their fresh water tributaries. We are beginning to reexamine the quality of our special conservation areas. Some, we have discovered, have only limited biological diversity and should perhaps be expanded through methods which promote greater biological diversity. Habitat protection is becoming a higher priority as we experience more threatened and endangered species.

2. Pollution Prevention

We are increasingly making pollution prevention a top priority. In addition to preventing all the direct problems of pollution, it is also cheaper for governments. We are working hard to develop objective and easily measurable indicators of environmental quality, and to develop monitoring programs by which we can judge the status of our resources.

Some high priorities here include: air quality, drinking water quality, fresh water quality in rivers and lakes, marine water quality, the health of our forests, and habitat protection for fish and wildlife.

Following two decades of end-of-the-pipe pollution control strategies, policy makers have begun moving the focus upstream, to changes in industrial processes to reduce the amount of pollution that must be treated after having been created. For the most part, this is not the result of new governmental mandates, but the result of several other factors:

(a) Greater cost of treatment and proper waste disposal;
(b) Current emphasis on changing industries to make them more efficient in terms of environmental and energy concerns;
(c) Greater public support of companies that emphasize pollution prevention;
(d) Increased governmental technical assistance.

Energy efficiency programs also have a direct pollution prevention benefit. The USEPA's Green Lights program works with companies nationwide to help them convert to longer lasting, lower-energy lighting fixtures, which not only have a rapid playback, but reduce electricity demand, with obvious environmental benefits.

3. Waste

We are making great efforts to reduce, reuse, and recycle waste. Disposal is a last priority. We have made major strides in reducing waste.

The role of the federal government–the national level under our system–with respect to ordinary garbage from homes and businesses is quite limited. On that level, the principal action has been to enact strong landfill construction standards, in order to prevent leaching which would pollute the groundwater. Because of the cost and other difficulties in meeting those standards and finding suitable locations, we are experiencing in Washington State a new trend of long haul garbage disposal. That is, garbage is increasingly being disposed of, not in local landfills, but in large regional landfills, to which it is hauled over hundreds of miles by truck or train. This trend has been reinforced by the fact that our Supreme Court has ruled that under our federal constitution states, which exercise primary control over these large landfills, may not refuse to accept garbage just because it is from another state. The courts have held that garbage is a commodity.

There is great public support for recycling. So much so, in fact, that the amount of material accumulated through recycling sometimes has exceeded the market demand for its use, with the result of low prices for such materials. We are, however, making significant efforts to develop new markets for such materials.

Public support for recycled materials, on the other hand, has in some cases caused a consumer preference for products labeled as recycled. We are in the process of developing clearer standards for what qualifies for a recycled label, so as to prevent false labeling.

I was recently asked by a member of the Thai news media if the U.S. ships much toxic waste to Asian countries. I am advised by our research staff that the United States does not export any nuclear waste to any country. Regarding hazardous waste, the majority is handled within the U.S., with some being shipped to Canada pursuant to a treaty between the two countries. Only a very small amount is shipped to Asia.

4. Water Resources

We are in the process of reviewing our policies and laws on water resources, i.e., the allocation of quantities of water to various uses. We are becoming increasingly aware that water is a finite resource, even in the very wet parts of my own state. If you add up all the uses people wish to make of water, and compare the amounts needed for all those uses to the amount available, you find you cannot do it all. We are thus going to have to find better ways to prioritize water uses. In the U.S., especially in the West, we have a very complicated set of laws on this subject which protect older water uses and users, and discourage conservation of water. These state laws–and in the U.S., water law is primarily state law–are also insensitive in many respects to our growing need to have sustainable environmental policies. This is a very difficult and controversial topic.

We are also learning more about the relationship between water quality and water quantity, and between surface water and ground water. We are beginning to use this new knowledge in our water policies, although again implemention is full of difficulties.

5. Resource Depletion

This is a problem of increasing importance. Probably the most dramatic example is one occurring in the Pacific Northwest, where we are famous for our salmon. Sadly, for many reasons which we are actively studying, some runs of salmon have become extinct and others are threatened with extinction. Over the years, the salmon runs have steadily declined.

Two weeks ago, the Pacific Fisheries Management Council voted, for the first time, to close salmon fishing. Almost the only exception is for indigenous peoples who are allowed a special catch, under treaties between them and the U.S. Government. There will also be closures in Washington State's inland salt-water bodies.

These closures will have severe economic impacts in our state. Commercial and recreational fishing is an important economic activity in our part of the United States. These closures provide a dramatic example of how resource depletion can cause people to lose their jobs, their businesses, their investments–indeed, their way of life.

There are numerous theories offered as to why the salmon runs are declining so severely: blockage by dams; converting rivers into lakes by those same dams, and thus changing the habitat; over-harvesting; river pollution from urban and agricultural run-off; propagation of hatchery fish; and many other factors.

6. The Economy and the Environment

There is a growing recognition that a quality environment and a quality economy go together. High wage, high tech businesses, for example, prefer to locate in quality environments that their managers and employees will enjoy.

Further, environmental enhancement can provide great economic stimuli. Thus, we are trying to create jobs in environmental restoration. Such restoration and protection programs can involve significant public works construction. We also have a growing environmental technologies business sector, which exports both hardware and services. In my own region, we have created a Pacific Northwest Economic Region, composed of several U.S. States and two Canadian Provinces, which use this regional organization to work together on economic development, including development of environmental technology, markets for this technology, and markets for recycled materials.

7. Negotiations with Indigenous Peoples

We are improving relations between the state and federal governments on the one hand and indigenous peoples on the other in negotiating and managing sustainable natural resource policies. These involve treaty rights to water and other resources. Major negotiated settlements generally must be approved by Congress.

In my own state, we have in place a process for joint management of the salmon fisheries by the state government and tribal governments.

III GOVERNMENT STRUCTURE: ISSUES AND TRENDS

Changing roles of federal, state and local governments

In the United States, we have basically three levels of government: (1) national; (2) state; and (3) local (city, county, and special district). Each level and unit has its own separately elected set of executives and legislators. During the last century, the essential structure has changed very little. However, during the last 25 years, significant additional functions have been taken on by all levels of government. This has been the most dramatic at the state and local government levels, with regard to environmental policy and growth management policy. This has made their roles more complex, difficult, and controversial. It has also made intergovernmental relations more complex, since environment and growth problems generally involve multiple units and levels of government.

For example, during the 1970's, we found that it worked best for the federal government to set strong standards for control of "point" sources of pollution, such as an identifiable smokestack or an effluent discharge pipe.

We now have such "point" sources fairly well under control. Our top priority now is "nonpoint" sources. These are sources of pollution that are individually small, have innumerable initial sources that are hard to identify, and which cumulatively may have a huge negative impact on health and environment. We are learning that these sources are often best controlled at the state and local levels of government.

In a related development, we have found that an approach of "one size fits all" at the national level often does not work. This means that states and local governments must be given considerable flexibility to design and implement their own strategies. We are doing a considerable amount of this.

It is not unusual to see states having stronger environmental safeguards and policies than the federal government. For example, my state of Washington has stronger laws for oil spill prevention and response than does the federal government. Indeed, we are actively trying to persuade the federal government to take some stronger actions to assist us at the state level. Because our lives are depenent on sustaining our quality marine resources, we care intensely about them.

In the United States, state governments often have principal or exclusive responsibility for much environmental policy. A key example of this is land use regulation: planning, zoning, and development standards. This function is becoming increasingly important as growth continues.

Subnational governments involved in international relations along borders

Similarly, coordination and cooperation between subnational governments is taking place across international boundaries. For example, the State of Washington (USA) and the Province of British Columbia (Canada) have entered into an Environmental Cooperation Agreement, which covers areas of mutual concern that are not covered by treaties between our respective national governments.

This Agreement was signed in 1992, to share information and pursue more specific agreements for cooperation on specific subjects. It was a recognition that we share many common natural resources, such as a large, beautiful, and bountiful inland salt water sea, an arm of the Pacific Ocean. The Agreement includes the creation of an Environmental Cooperation Council, which had periodic meetings and has several technical advisory groups that address such issues as oil spill prevention and response, oil transport, water basin issues, ground water issues, border area mining proposals, and pollution discharges into a major river we share, the Columbia River.

Although elections have changed the leadership of the governments in both the state and the province, the Agreement and its working functions have survived and are becoming deeply institutionalized as the normal method for handling cross-border issues.

Other cooperative cross-border state government relationships have developed along the US-Mexico border.

Regulatory reform

We have a strong movement in the US called "regulatory reform". As mentioned, the US has many complex laws regarding the environment, at all three levels of government. This is a dynamic area of law, where both policies and administrative practices continue to evolve. Too often, new laws have been enacted by one level of government with insufficient coordination with other levels of government. Similarly, one unit or branch at one level might enact a new policy with insufficient coordination with other units or branches of that same level of government. This has resulted in practical complications for the people and business subject to such laws and regulations. Their complaints have resulted in the "regulatory reform" movement, where we are trying to improve coordination and integration of policies and administration, to simplify, or make more "user friendly"e the requirements, increase technical assistance to reduce compliance problems, and to better prioritize policies. Parliamentarians in the US are deeply involved in this effort.

I hope this gives you some insight into a few of the dynamics which parliamentarians in the United States are dealing with at our nation, state, and local levels of government. I hope to have a chance to discuss these issues with your further.

SPEECH

of the Vietnamese National Assembly Delegation
at the Second East Asia & Pacific Parliamentarians' Conference
on Environment and Development-EAPPCED II

Mr. Vu Minh Mao

MP, National Assembly of SR Vietnam

Ladies and gentlemen,
Distinguished guests,

It is a pleasure for me to attend this important conference, which takes place at a decisive moment for the future of the East Asia-Pacific economy and environment in general and of Thailand's and Vietnam's in particular.

Taking this opportunity, on behalf of Vietnam's National Assembly delegation, I express our thanks to the Organizing Committee for the invitation and giving us a chance to speak at this meeting.

As in other countries, the environment problems in Vietnam have become more and more concerning. The environment of Vietnam has been degraded to a great extent while the country is not industrialized. The challenge to Vietnam now, as it is to vitually every other nation, is how to effectively identify present and potential impacts of environment to development process and then to enact appropriate policies and legislation, which will ensure sustainable development while eliminating the adverse impacts.

For sustainable development, Vietnam has no choice but to bring into full play its natural resources, conserve the environment, and broaden its cooperative relations with foreign countries. And in the development process, the country has to cope with numerous environment and other problems. Apart form the typical characteristics of a developing country, Vietnam is facing special difficulties because the country has experienced many years of war. Its infrastructure has been badly damaged, 2 million ha of forests were destroyed.

Vietnam is an agricultural country. Many experts predict that degradation of the environment is inevitable as the growing population shifts from agricultural to industrial activities. The investigations have shown that the environment of Vietnam has been degraded in many respects.

At present, Vietnam has about 9 million ha actually remaining under forest cover. The forests of Vietnam have suffered severe damage. Clearing occurred first in coastal and lowland areas and then progressively extended into the hills and mountains. This process has been accelerated as a result of war damages to both agricultural and forest areas, and rapid population growth. The current reforestation efforts are not keeping pace with the rate of deforestation.

In order to improve this situation, a variety of measures are utilized, comprising:

- Reforestation and afforestation;
- Development of alternative energy sources;
- Discouragement of large-scale commercial logging in remaining areas of natural forests.

In Vietnam, land availability per capita is one of the lowest in the world. Vietnam's watersheds are degraded because of a high degree of deforestation, erosion of hillslopes and exhaustion of soils by unsustainable agricultural practicies such as shifting cultivation. In Vietnam now, there are about 700,000 nomads who are still practicing slash-and-burn farming methods. The use of harmful agrochemicals in lowland areas poses a considerable risk to fresh water and coastal fisheries and to aquaculture. The by-products of herbicides have also resulted in very severe impacts.

Vietnam has rather rich water resources. However, water is unequally distributed. In some coastal or estuary areas, the salinity of water has increased, water in areas close to urban or industrial centers is polluted due to wastes or chemicals. The demand for water will increase considerably in the process of industrialization and urbanization. Both surface and ground water have been polluted from sewage, and industrial and agrochemical use. Water pollution from biological wastes is a very serious problem in some areas such as Hanoi and Ho Chi Minh City.

For a more rational use of water resources, the Vietnamese Government implemented following measures:

- Ensuring a high priority on watershed management;
- Promoting the prevention of water pollution via standards and controls on industrial effluents, and proper systems of sewage treatment;
- Adopting water quality standards in relation to particular uses, e.g. drinking, recreation and fishing, etc.

Industrial plants are also major sources of pollution. The plants are polluting the surrounding countryside to the extent that agriculture is suffering.

Environmental impacts of transportation are related to air pollution by exhaust emissions, noise pollution, impacts on land, effects on water quality, soil contamination, deterioration of the built environment, and visual intrusions, which affect human health, feelings of comfort, natural ecosystems, and quality of life.

Global climate change might affect Vietnam in the far future. Initial observations in Vietnam showed that over the last two decades, the number of typhoons that hit Vietnam has been on the increase, with half a typhoon per decade. Rainfall during the rainy season has increased while annual rainfall and rainfall during the dry season has been reduced. Over the last ten years, the average temperature has increased by 0.08-0.1° C.

In terms of causes of environment problems, one can point out many, but the major ones are the following:

- Lack of environment and natural resource planning;
- Lack of integration between conservation and development;
- Lack of environment legislation;
- Lack of reliable information;
- Lack of conservation awareness;
- Shortage of experienced manpower and investment;
- Population growth;
- Lack of cultural taboos.

The importance of environment problems is more and more recognized. Over the last decades, Vietnam has paid much attention to environment problems. With regard to legislation, the National Assembly enacted following environment related laws and ordinances:

- Ordinance on Protection of Aquatic Resources (1989);
- Ordinance on Dyke Protection (1989);
- Ordinance on Mineral Resources (1989);
- Maritime Code of Vietnam (1990);
- Law on Forest Development and Protection (1991);
- Ordinance on Vegetation Protection (1993);
- Ordinance on Veterinary Activities (1993);
- Law on Oil and Gas (1993);
- Environment Protection Law (1993);

Among them, the most basic and important on environment is the Environment Protection Law. The ethos of this law is the fact, that from now on, all production units must conduct Environment Impacts Assessment (EIA) and introduce environmental protection measures. After a certain time, their environment pollution indicators must comply with the standards. Otherwise, the factory must be closed. The Polluter Pays Principle (PPP) is also introduced in the Law.

The Vietnamese Government launched a National Plan for Environment and Sustainable Development (NPSD). NPSD set out concrete objectives as follows:

- To maintain essential ecological processes and systems ensuring people's lives;
- To maintain the biodiversity of domestic as well as wild plants and animals to serve short-term and long-term interests;
- To ensure a sustainable use of natural resources;
- To maintain the quality of the environment as a whole, which is necessary to peopleûs lives.

Now this Plan is developed and has achieved primary results. However, many difficulties are still remaining. Vietnam needs to make a great effort to solve environment problems.

Ladies and gentlemen,
Distinguished guests,
Environment issues have a close relationship to development.

Environmental factors constitute a part of life quality. Environmental policies are also aiming at sustainable development. Recognition of the potential mutual support between environmental policies should facilitate earlier and smoother achievement of development goals.

Environmental protection is the duty not only of a nation, but also of the whole world. Every country could be a victim of environment aftermaths derived from other countries, for example acid rain, overexploitation of upstream water, sea water pollution, etc. That's why Vietnam advocates broadening international cooperation on environment with all countries, especially regional countries, in order to exchange opinions and experiences, cooperate on studies, and coordinate activities. At this meeting I would like to repeat that "the Earth is our common house". Only with extensive cooperation we can conserve and improve our regional environment.

Thank you very much for your attention.

SPEECH

of Prof. Vu Dinh Cu AT THE SECOND EAST ASIA & PACIFIC PARLIAMENTARIANS' CONFERENCE ON ENVIRONMENT AND DEVELOPMENT

His Excellency, Mr. Chairman,
Dear Sirs and Colleagues,
Ladies and Gentlemen,

Our Vietnamese delegation from the National Assembly express our great thanks to:

His Excellency, Mr. Tinawat Marukpitak, Chairman of the House Standing Committee on Environment of Thailand, for the invitation to participate to this important EAPPCED II.

We express our great thanks to His Excellency, Mr. Chairman of the session for giving us time for this speech.

As you know, Vietnam is a developing country with a mostly agricultural economy. Although the country is not yet industrialized, the environment was seriously damaged, not only by the well known reasons for all developing countries (pressure of a high population growth rate, deforestation, pollution of water, erosion and degradation of soil...) but also by a long time of war which caused a long-term degradation of the environment.

To address this situation, we organized a national program with international cooperation (UNDP, UNEP etc...), to assess and evaluate our environment, ecological degradation, to gather and process information with the purpose of elaboraing a package of legislative, economic, educative, etc. instruments for policy in environmental management which will be an essential condition for sustainable development in the future.

Some priority topics were specially examined:

1. The legislative instruments

In recent years, the National Assembly of Vietnam has aproved many necessary laws and ordinances oriented to the reservation and prevention against the spoillage of natural resources and the pollution of the environment (see separate sheet 1). In the last session of the National Assembly (December 1993), the Law on Environment Protection was approved.

The implementation of these legislative instruments always needs the efforts and commitment of the local authorities and responsible organisations with a corresponding budget.

2. Biodiversity

For the conservation of the biodiversity, we consider that in our country the most important measure now is the ending of deforestation and the enhancement of reforestation. In agriculture, the IPM system is used fruitfully in many rice field regions. Some accidents caused by ecological disbalance were observed (separate sheet 2). A Red Book for species in danger was published as an official document. Vietnam participated in the Biodiversity Convention (Rio de Janeiro).

3. Climate change and natural catastrophes

Every year Vietnam is impacted by about 7 typhoons from the sea, which cause big losses for the national economy. Vietnam is a country with more than 3000 km of sea coast; thus, we are concerned about global warming of our planet. Up to now the total emission of greenhouse gases in our country is still not so much and the carbon tax is still not applied. Nevertheless, some big power stations were constructed during the last years. Meteorologists have observed the rise of the frequency of climate irregularities in some localities in the country.

4. Sustainable Industrialization

In the future, the industrialization process of our country will increase. We must learn many expensive lessons from other industrialized countries to make a choice in industrialization policy for a sustainable development (separate sheet 3). As indicated in many studies, choices must be made regarding an acceptable growth rate of GDP, green technologies and a low population growth rate.

Ladies and gentlemen,

Environment and development problems are not only national, but regional and global problems. We consider that regional and international cooperation in environment management for sustainable development is important for all our countries in the region. The National Assembly of Vietnam will participate in discussing all possible cooperation between parliamentarians on environmental and development in our East Asia-Pacific Region.

THANK YOU VERY MUCH FOR YOUR ATTENTION.


CANADA
John BRADFORD


EAPPCEDII

SEPARATE SHEET 1

The laws and ordinances related to environment management enacted from 1987 to 1993:

1. The Ordinance on the Protection of Aquatic Product Resources (1989).
2. The Law on Foreign Investment in Vietnam (1987).
3. The Ordinance on Transfer of Foreign Technology to Vietnam (1988).
4. The Ordinance on Mineral Resources (1989).
5. The Law on Protection and Development of Forests (1990).
6. The Ordinance on Veterinary (1993).
7. The Ordinance on Vegetation Protection (1993).
8. The Ordinance on Prevention and Protection Against Damages Caused by Floods and Typhoons (1993).
9. The Petroleum Law (1993).
10. The Land Law (1993).
11. The Tax Law in using Agricultural Land (1993).
12. The Law on Environment Protection (1993).

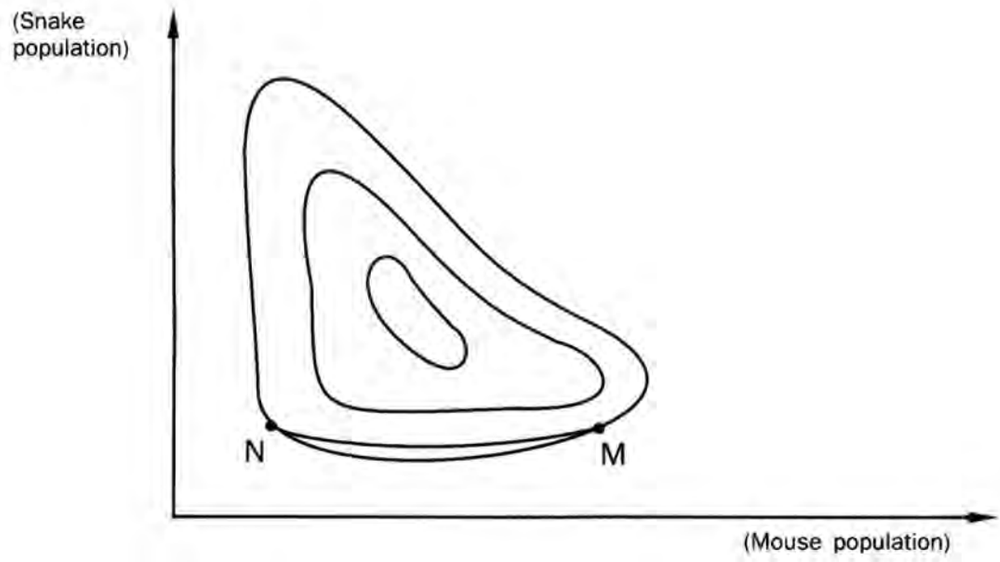
SEPARATE SHEET 2

Using the wild beast-victim equation Lotka-Volterra

$$\frac{dX}{dt} = X - XY \quad (1)$$

$$\frac{dY}{dt} = XY - Y$$

Where X, Y are the population of snakes and mice. The solutions by computer of equation (1) is displayed on the following figure:



In 1992-1993, at some places in the Mekong River Delta occured the situation of the M point, which is an accident, that is, a high mouse population. They caused big losses in rice fields. We must stop exporting snakes to return to the point N.

SEPARATE SHEET 3

According to Ehrlich's formula:

$$D_e = PxGxT \quad (1)$$

Where D_e = Environment degradation

P = Population

G = GNP/per capita

T = Environment impact per unit of GNP.

From (1) we can have

$$\frac{d}{dt} \ln D_e = \frac{d}{dt} \ln P + \frac{d}{dt} \ln G + \frac{d}{dt} \ln T \quad (2)$$

or

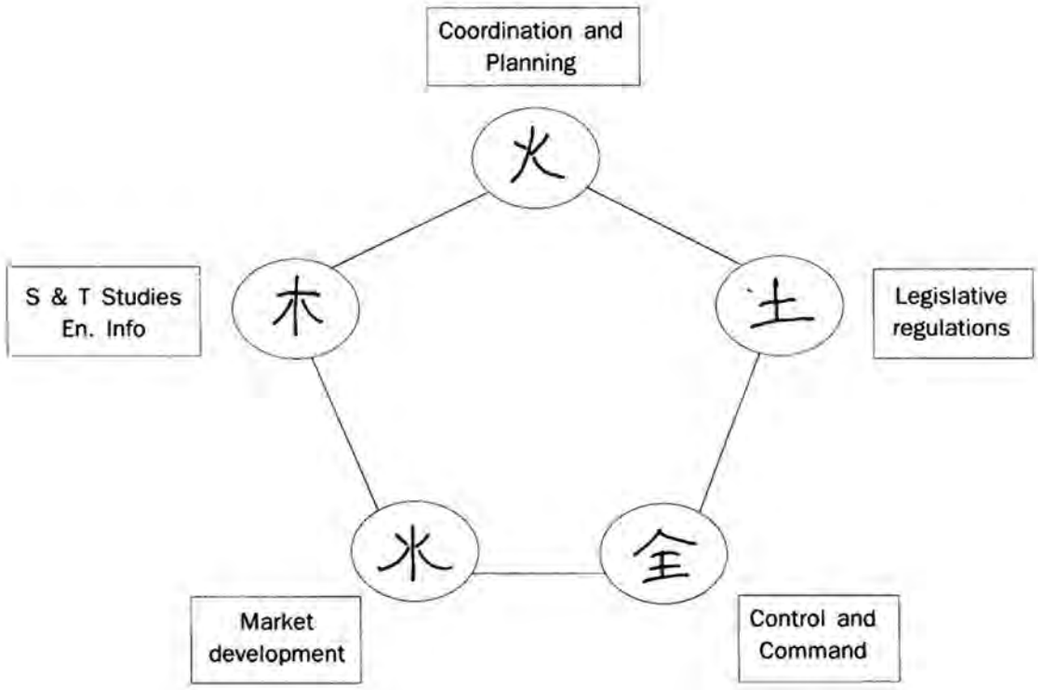
$$\frac{1}{De} \frac{dD_e}{dt} = \frac{1}{P} \frac{dP}{dt} + \frac{1}{G} \frac{dG}{dt} + \frac{1}{T} \frac{dT}{dt} \quad (3)$$

To minimize the left hand side of (3) there are 3 possibilities:

- Low growth rate of population,
- Acceptable growth rate of GNP,
- Low environmental impact technologies.

SEPARATE SHEET 4

The Environment and Development Management according to the East Thinking (Green Thinking)



[SECTION VI]

Summaries Of General Sessions

Summary of General Session April 21, 1994

Presiding at the opening of the session was Mr. PARK Jun Byung, President of EAPPCED I, Member of the Korean National Assembly.

Delegates were introduced from fourteen countries : Australia, Canada, People's Republic of China, Japan, Republic of Korea, Malaysia, Mexico, Mongolia, New Zealand, Philippines, Russian Federation, Thailand, United States of America, and Vietnam.

A total of 95 delegates and observers were registered. A complete list is contained in Appendix 1.

Appreciation was expressed to conference co-sponsors: United Nations Environment Programme, Asia Foundation, GLOBE International and Phuket Province; to corporate sponsors; and to the conference Organizing Committee. See Appendix 2 for lists.

Motion was passed unanimously to approve the conference Timetable (agenda and schedule) as prepared by the Organizing Committee.

The following officers of EAPPCED II were elected unanimously:

- President, MP Mr. Tinawat Marukpitak, Thailand
- Vice President, MP Ms. Christine Fletcher, New Zealand
- Vice President, Senator Ms. Maria Elena Chapa Hernandez, Mexico.

Mr. Tinawat Marukpitak then assumed the position of President of EAPPCED II. He thanked delegates for their confidence in him and expressed his desire to continue to work cooperatively with all to advance the purposes of EAPPCED.

He announced he would be appointing a committee to draft a "Phuket Declaration" and invited each delegation to submit one nomination for membership.

The General Session then adjourned until Saturday, April 23. There was no General Session held on April 22.

Summary of General Session April 23, 1994

PHUKET DECLARATION

The first order of business was consideration of the proposed "Phuket Declaration" developed by the Drafting Committee. Senator Heherson Alvarez, Philippines, who was elected chairman of the committee by its members, reported on the recommended declaration and moved that it be adopted. It was approved unanimously. A signing ceremony followed. A copy is on the following pages and in Appendix 5.

FUTURE OF EAPPCED—DISCUSSION

Delegates then engaged in a discussion of the future of EAPPCED. Topics included :

1) Need for a standing committee to facilitate efforts between conferences;
2) Need for a permanent secretariat;
3) Need to improve information sharing between countries;
4) Need to develop financial assistance to enable some countries to attend and/or to be host countries;
5) Need to develop a permanent organization with a permanent charter, which would facilitate participation by some countries;
6) Need for a drafting committee to be appointed to develop a permanent charter;
7) Suggestion that appropriate parliamentarians from states and provinces bordering on the Pacific Ocean, particularly those from larger countries where they have substantial policymaking roles that are independent of the national government, be included in the permanent organization design;
8) Suggestion that annual meetings be held at least for the next five or six years;
9) Need for development of clear linkages from EAPPCED to specific standing committees in each parliament as a means of facilitating coordination;
10) A permanent secretariat would help with coordination with the United Nations Environment Programme, who provided excellent speakers for the conference;
11) A strong desire to include active participation by all countries in the region.

DISCUSSION OF FUTURE CONFERENCES

A discussion of possible formats and subjects for future conferences included the following topics;

1) Numerous suggestions that future conferences be focused on specific subjects, such as ocean resources, technical cooperation concerning nuclear safety and nuclear waste disposal, oil spill prevention and response, assistance from developed countries to developing countries, technology transfer, role of international organizations regarding the environment, improving channels of communication regarding the environment, information exchange regarding biodiversity of oceans, relationship between preservation of ethnic and cultural diversity and preservation of biological diversity, river management, coastal management;

2) Major papers could be presented on a specific topic, and each country prepare a country report on the same topic;

3) More time for discussion of country reports;

4) Papers and country reports could be prepared and distributed ahead of the annual conference to facilitate discussion at the conference;

5) Conference days could be organized with half-days for plenary sessions, interspersed with field trips and focus groups on specific topics.

6) Simultaneous translation could be made available;

7) Publication and distribution of all conference papers is requested.

MOTIONS REGARDING THE FUTURE OF EAPPCED

A motion passed unanimously asking the President of EAPPCED II to appoint a committee to establish a permanent secretariat in Seoul, Korea, and to instruct the secretariat to (1) explore ongoing funding sources and (2) communicate with all parliaments in the region to solicit participation of all environment committees in EAPPCED. Motion made by Philippines and seconded by Malaysia.

A motion passed unanimously to ask the President of EAPPCED II to appoint a committee to develop a draft charter for a permanent organization to be submitted to EAPPCED III delegates for their action. Motion by Philippines and seconded by Korea.

Nominations were made and a motion passed unanimously to elect the following persons to an Executive Committee of EAPPCED and to also serve as members of the EAPPCED III Organizing Committee:

- Mr. Tinawat Marukpitak, Thailand, President of EAPPCED II
- Ms. Christine Fletcher, New Zealand, Vice President of EAPPCED II
- Ms. Maria Elena Chapa Hernandez, Mexico, Vice President of EAPPCED II
- Mr. YANG Ji Ke, Peoples Republic of China
- Mr. KOSUGI Takashi, Japan
- Mr. PARK Jun Byung
- Mr. Ibrahim Ali
- Mr. Heherson Alvarez, Philippines
- Ms. Karen Fraser, United States of America

Motion by New Zealand, seconded, and passed unanimously establishing a quorum of three for action by the Executive Committee.

1995 EAPPCED III CONFERENCE

A motion was passed unanimously to accept the invitation of Malaysia to become the host country for 1995. The invitation was conveyed through Mr. Ibrahim Ali, Member of the House of Representatives of Malaysia.

By unanimous vote, Mr. Ali was selected as Chair of the Organizing committee for EAPPCED III. He said they would need assistance from the same co-sponsoring organizations. They would prefer to have the conference in April or May, following their elections. They will seek additional countries' participation. He indicated he will be establishing subcommittees and welcomed volunteers.

The General Session then adjourned.

PHUKET DECLARATION

On the occasion of the Second East Asia and Pacific Parliamentarians' Conference on Environment and Development, the Members of the Conference reaffirm their commitment to the Seoul Statement, and notably:

"..reaffirm the establishment of the EAPPCED as a means to materialise the spirit of environmentalism commonly shared by the parliamentarians in the region and to encourage common environmental standards, agree to meet annually to evaluate progress by individual member countries on environmental issues and problems, and to promote the objectives of UNCED and EAPPCED."

Further, we parliamentarians of the East Asia and Pacific region, in recognising the positive value of the cultural and ethnic diversity in our region and the ethnic diversity in our region and the complexity of the issues under discussion, accept the challenges of leadership in our roles as parliamentarians, and agree to make EAPPCED an effective regional environmental parliamentary organisation.

We, therefore, invite and encourage the participation of all nations in the East Asia and Pacific region in subsequent EAPPCED meetings and urge parliaments of this region to institute parliamentary committees to link up with EAPPCED.

Thus saying, the EAPPCED II, With respect to

GLOBAL CLIMATE CHANGE

Notes that the East Asia and Pacific region contains many areas that are particularly vulnerable to changes in the global climate;

Recommends support of national and regional legislation and policy measures that will translate the Framework Convention on Climate Change's objectives into action; and

In preparation for the First Conference of Parties to the Climate Change Convention in Berlin, 1995, *resolves* to recommend a ministerial level, or representation thereto of parliamentarians, conference to draft a regional Climate Change Action Plan; and concerning

BIOLOGICAL DIVERSITY

Recognises that the East Asia and Pacific region contains many centres of global biological diversity;

Reaffirms that the conservation of biological diversity is a common concern of humankind;

Reaffirms that States have sovereign rights over their own biological resources, but stresses that States should exercise those rights in consideration of regional and global ecological concerns, and in consultation and cooperation with other affected countries; and, in that spirit,

Calls for monitoring of biological diversity in the region; and

Supports national and regional legislation and policy measures that will translate the Convention on Biological Diversity's objectives into action; and on

AGENDA 21

Acknowledges that economic development and environmental quality are not mutually exclusive, and that policies for environmental protection may support economic development;

Demands that the principles and objectives of the Basel Convention on Transboundary Movement of Hazardous Wastes be upheld;

Agrees to work towards implementation of policy instruments that will support environmental protection through economic development;

Recognises the important role of non-Government organisations (NGOs) in the implementation of environmental programmes and determines to encourage mutual collaboration between NGOs and governments in the futherance of the common goal of sustainable development;

Determines to support the research, design and implementation of national plans for sustainable economic development, including but not limited to adoption of country population programmes, according to the principles of Agenda 21; and

Calls for trade and environment to be mutually supportive in pursuit of sustainable development.

Approved on 23rd April 1994
Phuket , Thailand

Australia

Republic of Korea

Mongolia

Thailand

Canada

Malaysia

New Zealand

United States of America

China

Mexico

Philippines

Vietnam

Japan

Russian Federation

EAPPCED II

[SECTION VII]

Earth Day Activity April 22

EARTH DAY

April 22, 1994

photo

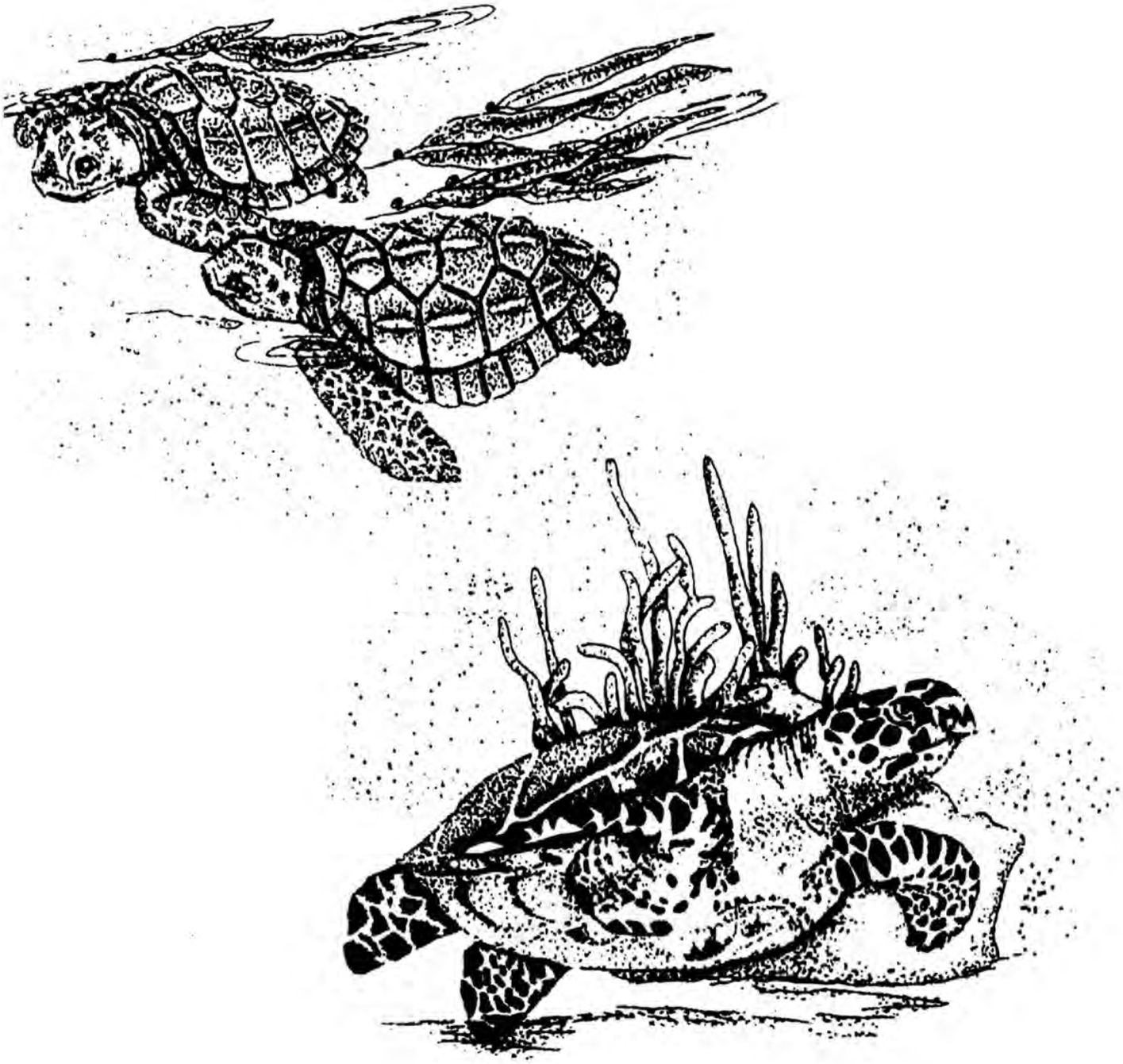
Earth Day, 1994 occurred on April 22, during the conference.

A special commemorative activity took place–the releasing of young turtles into the Andaman Sea.

This activity was selected because it is part of an ongoing effort on Phuket Island to protect the turtle population. The number of turtles is declining because of growth impacts negatively affectring their habitat, and because of harvesting of turtle eggs for food. The Marine Science Research Center of Thailand, operated by the National Department of Fisheries, is leading the effort to protect the turtles. It collects eggs and hatches them in a hatchery. The turtles released at the conference came from this source. Conference participants also donated funds to assist the Center.

The turtle has symbolic significance for this conference. It lives a long life in a marine environment which the entire region shares and which connects this region with the entire world. It is hoped that at a future EAPPCED conference, when walking along a beach, a delegate will encounter one of these special turtles and will remember this preservation effort.

In conjunction with Earth Day, commemorative T-shirts were distributed, along with a traditional Thai belt, the "Pha-Kao-Ma" Also, State Senator Karen Fraser, of Washington State, United States of America addressed the conference on the significance of Earth Day. She referred to it as a day that unites all peoples and all nations and reminds us of our common dependence on the earth's resources and on each other.

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EAPPCED II

[SECTION VIII]

Appendices

LIST OF DELEGATES AND OBSERVERS ATTENDING EAPPCED II

Australia

1. Mr. John Bradford	Member of Parliament, National Assembly
2. Mrs. Judy Bradford	Spouse

Canada

1. Mr. Peter Marriott	Canadian Embassy, Bangkok
2. Ms. Pimpatai Marriott	Spouse of Mr. Marriott

Peoples Republic of China

1. Mr. Yang Ji Ke	Head of the Delegation, Member of Standing Committee of the National People's Congress, Vice-Chairman of NPC Environmental and Resources Protection Committee
2. Mr. Wang Shu	Deputy to the National People's Congress
3. Mr. Zhong Rong Lai	Deputy Division Chief, Foreign Affairs Department, General Office of the NPC Standing Committee
4. Mme. Zhang Ying Bo	Secretary to the Delegation
5. Mr. Shi Ji Cheng	Counsellor of the Embassy

Japan

1. Mr. Kosugi Takashi	Member of House of Representatiues, Japanese Diet, and President GLOBE International
2. Ms. Lena Lindahl	Assistant to the President of GLOBE International

Republic of Korea

1. Mr. Park Jun Byung	Leader of Delegation, Member of National Assembly, President of the Korean Parliamentary League on Children, Population and Environment, and President of EAPPCED I
2. Mr. Park Sil	Member of the National Assembly, and Chairman of the Special Committee on Environment
3. Mr. Lee Kyung Jae	Member of the National Assembly
4. Mr. Shin Kyung Shik	Member of the National Assembly
5. Mr. Chung Pil Keun	Member of the National Assembly
6. Mr. Ku Chang Rim	Member of the National Assembly Executive Director, Korean Parliamentary League on Children, Population and Environment.
7. Mr. Koo Cheon Seo	Member of the National Assembly
8. Mr. Koo Heek Won	Advisor
9. Mr. Kim Young IL	Staff
10. Mr. Choi Dong Chul	Staff
11. Mr. Kang Duk Young	Staff

Malaysia

1. Mr. Ibrahim Ali	Member, Malaysia House of Representatives, and Chairman of Parliamentary Forum on Population and Development
2. Mr. Datin Paduka HJH. Rahmah Osman	Executive Director of AFPPD
3. Ms. Siti Zainab Abu Baicar	Member of Parliament
4. Mr. Dr. Yen Yen	Member of Parliament
5. Ms. Farah Aziz	Observer
6. Mr. Liza Yong	Observer
7. Ms. Jaafav	Observer

Mexico

1. Mrs. Maria Elena Chapa Hernander	Senator, Mexico Congress, Chairman of The Fifth Foreign Affairs Committee
2. Mr. Gustavo Guerrero Ramos	Senator, Mexico Congress, Co-Chairman of the Environment and Human Settlements Committee

3.	Mr. Jorge A. Vega Comacho	Senator, Mexico Congress, Chairman of the Marine Committee
4.	Mr. Emilio Becerra Gonzalez	Federal Deputy, Mexico Congress, House of Deputies, Member of Commission on Environment and Ecology
5.	Mr. Jorge Oceguera Galvan	Federal Deputy, Mexico Congress, House of Deputies, Member of Health Commission
6.	Dr. Rafael Sanchez Leyva	Federal Deputy, Mexico Congress, House of Deputies
7.	Mrs. Bertha Rodriguez De Vega	Accompanying Senator Vega Camacho
8.	Mrs. Graciela Castanos De Guerrero	Accompanying Senator Guerrero Ramos
9.	Hilda Esther Ruiz Marin	Observer

Mongolia

1.	Mr. Mendbileg Mondoon	Chairman, Standing Committee on Environment, State Great Hural of Mongolia
2.	Ms. Tsedeviin Hulan	Adviser, Foreign Relations Department

New Zealand

1.	Ms. Christine Fletcher	Member of Parliament, Chairman of the Planning & Development Select Committee
2.	Mr. Angus Fletcher	Spouse of Ms. Fletcher

Philippines

1.	Mr. Heherson T. Alvarez	Senator
2.	Ms. Aurora A. Henson	Congresswoman
3.	Ms. Luwalhati Antonino	Congresswoman

Russian Federation

1.	Mr. Rastorguev Valeri	Senator
2.	Mr. Demichev Alexei	Senator
3.	Mr. Zhambalov Namdak	Senator
4.	Mr. Alexander Kozyrev	Deputy, Member of the Committee for the Affairs of the Federation and Regional Politics of the State Duma of the Federal Assembly of the Russian Federation
5.	Mr. Mikhail Lemeshev	Chairman, Committee for Ecology of the State Duma of the Federal Assembly of the Russian Federation
6.	Mr. Anatoly Voronin	Parliamentary Staff
7.	Mr. Alexadre Kartchava	Head of Division of S.E.A. MFA of Russia

Thailand

1.	Prof. Murut Bunnag	Speaker of the House and President, the National Assembly of the Kingdom of Thailand
2.	Mr. Boonchu Rojanastien	Deputy Prime Minister of Thailand
3.	Mr. Anand Panyarachun	Former Prime Minister of Thailand
4.	Mr. Tinawat Marukpitak	Chairman of the Committee on Environment, the House of Representatives
5.	Mr. Prasat Tanprasert	Member of the House of Representatives
6.	Mr. Art-Ong Jumsai Na Ayudhya	Member of the House of Representatives
7.	Mr. Sarit Santimataneedol	Member of the House of Representatives
8.	Mrs. Ladawan Wongsriwong	Member of the House of Representatives
9.	Mr. Tongchai Pimsakul	Member of the House of Representatives
10.	Miss Poonsook Lohajoti	Member of the House of Representatives
11.	Mr. Muk Sulaiman	Member of the House of Representatives
12.	Mr. Somboon Thongburan	Member of the House of Representatives
13.	Mr. Amnaj Chanawongse	Member of the House of Representatives
14.	Mr. Pha Agsonsua	Member of the House of Representatives
15.	Mrs. Anchalee Vanich Tepabutra	Member of the House of Representatives
16.	Mr. Surachad Masadit	Member of the House of Representatives

17. Admiral Hun Sakulpanich	Member of the Senate
18. Mr. Pairoj Piempongsant	Member of the Senate
19. Vice Admiral Pravidaya Palasri	Member of the Senate
20. Mr. Uthai Sudsukh	Member of the Senate
21. Air Marshal Sirmyuth Boonsiriya	Member of the Senate
22. Prof. Phaisith Phipatanakul	Member of the Senate, Secretary General, the Secretariat of the House of Representatives

United States of America

1. Ms. Karen Fraser	State Senator, State of Washington
2. Mr. Timothy R. Malone	Spouse of Senator Fraser
3. Mr. Kerry Mc Kenna	Managing Director , Waste Management Thailand
4. Ms. Diane Mc Kenna	Spouse of Mr. McKenna
5. Mr. Richard Martin	Marketing Director, Waste Management Thailand
6. Ms. Susan Martin	Spouse of Mr. Martin

Vietnam

1. Prof. Dr. Vu Dinh Cu	Member of Parliament Chairman of the Committee on Science, Technology and Environment, Head of Delegation.
2. Mr. Vu Minh Mao	Member of Parliament Member of the Committee on Science, Technology and Environment
3. Mr. Eng. Nguyen Chi Toa	Expert, Office of the National Assembly.

International Organizations and Observers

Asia Foundation

1. Mr. Kim De Ridder	Representative, Bangkok office

Globe International

1. Mr. Takashi Kosugi	President of GLOBE International
2. Ms. Lena Lindahl	Assistant to the President

World Conservation Union (IUCN)

1. Mr. Jeffrey Mc Neely	Chief Biodiversity Officer, World Conservation Union (IUCN)

United Nations Environment Programme (UNEP)

1. Mr. Richard A. Meganck, Ph.D.	Director, Regional Office for Asia and the Pacific United Nations Environment Programme, Bangkok
2. Mr. Scott Vaughan	Program Officer, Environment and Economics, Gevena
3. Dr. Alexandre Timoshenko	Chief, International Legal Instruments Unit, United Nations Environment Programme, Nairobi

Business Council for Sustainable Development (BCSD)

Mr. Anand Panyarachun	Chairman

Observers

1. Mr. Kiang Webster, PhD
2. Mr. King Y. Yu
3. Mr. Huang I-Shao

EAPPCED II SPONSORS AND ORGANIZERS

The Thailand National Assembly
The Standing Committee on Environment, House of Representatives Thailand National Assembly

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Phuket Province

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Waste Management International Corporation
The Bangchak Petroleum Public Co., Limited
Shell Companies in Thailand
The Aromatics (Thailand) Co., Limited
Thai Military Bank Public Co.

WORKING COMMITTEE AND ADVISORS

1. Hon. Mr. Tinawat Marukpitak — Chairman of the Committee on Environment, the House of Representatives
2. Dr. Chirapol Sintunawa — General Secretary
3. Mr. Sudjit Nimitkul
4. Dr. Chienchuang Kalayanamitr
5. Prof. Dr. Vichit Boonyahotra
6. Dr. Dhira Phantumvanit
7. Hon. Mr. Prasart Tanprasert
8. Hon. Mr. Tongchai Pimsakul
9. Hon. Mrs. Ladawan Wongsriwong
10. Hon. Dr. Art-Ong Jumsai Na Ayudhya
11. Hon. Dr. Sarit Santimataneedol
12. Hon. Mr. Somboon Thongburan
13. Hon. Miss Poonsook Lohajoti
14. Hon. Mrs. Anchalee Vanich Tepabutra
15. Hon. Mr. Muk Sulaiman
16. Hon. Mr. Surachad Masadit
17. Dr. Monthip Sriratana Tabookanon
18. Mr. Satit Wecharangsi
19. Mr. Vichien Singhaprecha
20. Mr. Sompol Vanigbandhu
21. Mr. Prachot Krainet
22. Mr. Sayam Eampichairit
23. Mr. Voravit Chantarasiri
24. Ms. Orn-Anong Tansatit
25. Mr. Bandit Marukpitak
26. Hon. Ms. Nantawan Kalayanamitr
27. Hon. Ms. Karen Fraser
28. Miss Jindarak Sangkanjanavanich
29. Miss Wongwara Mooymee
30. Mrs. Veena Chatien

CHARTER OF THE EAST ASIA & PACIFIC PARLIAMENTARIANS' CONFERENCE ON ENVIRONMENT AND DEVELOPMENT (EAPPCED)

We parliamentarians,

Conjoined in our aspiration to achieve harmony between the environment and development amidst the rapid pace of change in East Asia and the Pacific;

Supporting the efforts of our governments to converge the complex and diverse positions of the countries of the region into a common policy for sustainable development, and acknowledging the challenges that lie therewithin;

Stressing the importance to the inter-parliamentary dimension in facilitating region-wide dialogue and understanding; and

Guided by the "Brasilia Plan of Action" adopted at the Inter-parliamentary Conference on Environment and Development in November 1992, in particular its recommendation that follow-up meetings be held at the regional level to promote information exchange, to keep abreast of developments in the field, and to assist in enlightened policy-making;

Agreed to create the East Asia & Pacific Parliamentarians' Conference on Environment and Development (EAPPCED), hereinafter referred to as "the Conference," in accordance with the following terms.

1. The Conference shall be a regular forum where parliamentarians of East Asian and Pacific nations
   1) discuss and produce workable solutions to common environmental problems, and
   2) obtain consensus around ideas for sustainable development in the region.

2. The membership of the Conference is open to parliamentarians of East Asian and Pacific countries, who support the spirit and activities of the Conference.

3. The conference meets once every year, unless agreed upon otherwise, the host, venue, date and agenda of the annual Conference shall be decided at the preceding Conference.

4. The host country shall provide the preparations and administrative services for the Conference. Expenses for attending the meeting, including travel and lodging, shall be borne by the participants.

5. Decisions of the Conference shall be taken by the principle of consensus.

6. The working language of the Conference is English. The host of the Conference, however, can designate one other language as the second working language, provided that simultaneous interpretation is made available.

7. The President of the Conference shall be elected at the annual Conference. The candidate for the President shall be nominated by the host country from among its parliamentarians. The Conference shall nominate two Vice-Presidents. The recommended composition of each delegation is delegates assisted by as many advisors/staff as deemed necessary.

8. The Charter is subject to amendments by consensus of the Conference, and each delegation is entitled to one vote only. The amendment to the Charter shall be proposed at least two months prior to the Conference to the preparatory secretariat of the host country. The secretariat shall then distribute the amendments to the member parliamentarians for review.

We parliamentarians gathered in Seoul to create the East Asia and Pacific Parliamentarians' Conference on Environment and Development (EAPPCED);

Fully committed to the Rio declaration by the UNCED;

Reaffirming our commitment to the Brasilia Action Plan by the Inter-Parliamentary Conference on Environmental and Development;

Fully supporting the rules and actions taken by the Commission on Sustainable Development;

Alerting the participants of the UNCED to observe and implement their commitments; and

Stressing the significance of the conservation and worldwide diffusion of environmentally sound culture which respects the necessity of human and natural ecosystems;

Agree to prepare strong grassroots commitments at the parliamentary dimension for the betterment of the region's environmental quality, emphasizing "environmentally sound and sustainable management and development" as the responsibility of every individual and appreciating the efforts so far made by the individual governments and NGOs concerned, and to encourage interchange of research and technology;

Now, reaffirm the establishment of the EAPPCED as a means to materialize the above mentioned spirit of environmentalism commonly shared by the parliamentarians in the region and to encourage common environmental standards agree to meet annually to evaluate progress by individual member countries on environmental issues and problems and to promote the objectives of UNCED and EAPPCED.

We hereby witnessed and signed on June 8, 1993 in Seoul, Korea;

(YANG JIKE)
China

(Takashi Kosugi)
Japan

(KU CHANG RIM)
Korea

(M. Mendbileeg.)
Mongolia

(IBRAHIM ALI)
Malaysia

(CHRIS FLETCHER)
New Zealand

)
Russian Federation

(TINAWAT MARLEPITAK)
Thailand

A service of the United Nations Environment Programme with the support of the Inter-Parliamentary Union, designed to provide parliamentarians with brief but regular references to current developments in environmental policy

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With regard to information on the national level the Editors wish to stress that they are dependent on the information flow from parliamentarians in the individual countries.

February 1994

Biological Diversity

The convention on Biological Diversity became international law on 29 December 1993.

Elizabeth Dowdeswell, Executive Director of the United Nations Environment Programme (UNEP), hailed the occasion as "one of the most significant recent developments in international law and in international relations relating to environment and development".

In the face of the greatest extinction of species for 60 million years as a result of human activities, the treaty commits nations to protect biological diversity-ecosystems and genetic resources as well as species. The treaty pledges them to use sustainably the world's plants, animals and all other organisms, and seeks to ensure the fair and equitable sharing of the benefits that result from the use of genetic resources, particularly for developing countries.

By mid-December 167 States had signed the Convention, including the 37 ratifiers. Many Governments that have signed are in process of securing ratification, including the United States and countries of the European Union.

The first meeting of Governments that have ratified the Convention (the first Conference of Parties) is tentatively scheduled for 28 November-9 December, 1994 to take some of the fundamental decisions for advancing the Convention's provision.

Under the treaty, countries promise to develop national plans for the conservation and sustainable use of biodiversity, through making inventories of resources and integrating such plans into development strategies. They are also required to enact laws to protect threatened species and habitats and expand natural protected areas.

Developed countries are to assist poorer nations in carrying out their conservation programmes through the use of appropriate technologies. The treaty also says that developed countries shall "provide new and additional financial resources" to developing countries so that they can carry out their treaty obligations.

GEF Restructuring

The Sixth Participants Meeting on the restructuring and replenishing of the Global Environment Facility (GEF) ended in failure on 10 December in Cartagena.

Negotiations broke down on two major issues:

a) The appropriate ratio of seats between industrialised countries, Eastern European economies in transition and the developing countries within the GEF Executive Council; and
b) Whether the Council would be chaired by an individual elected from among its members or by the Chief Executive Office of the Secretariat, as nominated by the implementing agencies-UNEP, UNDP and the World Bank.

A decision was also postponed on whether the industrialised countries' pledge to donate $2 billion for the first three years of a newly shaped, permanent GEF would be accepted.

Germany: Cleanup Techniques

The German Ministry for Reasearch and Technology has approved funds totalling 25 million deutsche marks (US$ 15.7 million) for three projects to test cleanup techniques for polluted industrial sites in eastern Germany. The projects will examine advanced methods for locating and analysing polluted soil and water as well as assessing damage done to buildings and equipment. They will also test environmentally safe chemical and thermal-based techniques for destroying contaminated buildings and equipment.

Argentina:

- Racing Circuit

The announcement of an International Grand Prix to be held in March 1994 in one of Buenos Aires' largest parks has generated criticism because of the site chosen. The race site under consideration within Palermo Forest is one of the few remaining green zones inside this sprawling metropolis of 12 million inhabitants. The preparation of the circuit would mean cutting down many of the park's pine and eucalyptus trees and would irreversibly damage its fauna.

- Marine Oil Spill

The judicial investigation into a marine oil spill two years ago linked to the deaths of at least 17,000 penguins has been closed for lack of evidence on which ship dumped the petroleum. Federal prosecutor Gustavo Gomez complained of "the lack to specific legislation in this area" and said a new environmental standard was "an absolute necessity to have the penal code made adequate to deal with those who commit ecological crimes." Attempts to pass a new environmental law have ended up sitting on the desk of President Carlos Menem, who wants certain amendments rewritten or taken out altogether.

Egypt/Denmark: Cooperation on Projects

The Egyptian Minister of Administrative Development and the Danish Minister of Environment met recently in Cairo to underscore a previous agreement between the two countries that assists Egypt on environmental projects.

Denmark has agreed to give Egypt grants to combat pollution to the amount of US$ 48 million. Some of the projects specified under the agreement include developing guidelines for making environmental impact assessments, creating centres that monitor pollution in the air and along coasts, and managing waste and incinerators at hospitals. The grants will also help fund work to prevent industrial and municipal waste from being dumped in the Nile River.

Egypt: Public Transport

The government plans to begin installing motors in 100 buses that will run on compressed natural gas. The buses equipped with the natural gas-powered engines are expected to emit fewer pollutants than diesel-powered vehicles and will signify the first step toward converting all Cairo's public transportation buses form diesel to natural gas engines.

To convince the public that the new engines are safe the buses will be used by oil companies and the Ministry of Petroleum to shuttle their employees to and from work.

Amoco plans to fund the conversion of the 100 buses.

Hong Kong: Market-based Approach

At a meeting of the *World Economic Forum*, Gautam S.Kaji, a Vice President of the World Bank responsible for East Asia and the Pacific, warned top Asian business leaders and policy-makers that urban congestion, industrial pollution, water resource degradation, soil erosion and land degradation, deforestation, and loss of natural habitat were leading to "increased health costs and mortality, loss of competitiveness, and reduced output." He outlined a number of synergistic groups of policy response on protection of the environment. Market-based action for resource conservation was the "most important," he said, advocating full cost pricing as a "fundamental" reform. This entailed both the removal of subsidies on fuel, pesticides, and timber, and charges for damages done to society in the form of taxes and permits on pollution. According to Kaji, and "essential complement" to addressing resource conservation was the regulatory environment. Regulatory measures should include emissions and technology standards, aggressive vehicle inspection, traffic management, and tighter zoning.

Colombia: Water Pollution

The Colombian environmental prosecutor has ordered the state environmental agency *Inderena* and the Ministry of Health to fine or close 29 state companies and private-sector firms in the Caribbean coastal city of Cartagena for contaminating the city's bay and adjoining water.

The contamination is highly polluting to the environment, resulting in impermissibly high levels of nitrogen, phosphorus, phenols, sediments, mercury, and hydrocarbons in Cartagena Bay and nearby lakes and swamps.

The situation has been aggravated by the dumping of 40 percent of the untreated sewage, generated by the city's 600,000 inhabitants into Cartagena Bay. The remaining 60 percent, most of which is untreated as well, goes into the nearby Cienaga de La Virgen marsh, which also receives several thousand tons of sediment daily form the nearby Dique canal.

As a result, fish species are dying out in the waters around the city, as well as the coral reefs contained in the Rosario Islands's national park.

Japan: Environment Law

The Diet has passed a new law the primary purpose of which is to make the enforcement of Japan's environmental protection measures more organized.

TRADE AND THE ENVIRONMENT
AN OVERVIEW PAPER
PRESENTED TO:
THE JOINT ASEAN MEETING OF PARLIAMENTARIANS,
AT PHUKET, APRIL 1994

BY

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At an environmental conference for Thai CEO's in November 1992, Dr. Phaichitr Uathavikul, Minister for Science, Technology and Environment, under the Anand II Government, warned industry leaders:
"If you can't export you simply will not survive. If you do not adjust on the environment you're dead."

The following paper examines issues raised by Dr. Phaichitr's statement and recent developments in the Trade and Environment debate.

A close look at recent environmental-trade initiatives adopted by the European Community, and their potential impact on Thai exporters, concludes the paper.

Environmental Trade Conflicts

Trade conflicts arising from environmental pressures possess an explosive potential to seriously undermine the export performance of newly industrialising countries.

Leading legal specialists in trade and environment from Asia-Pacific countries and the US met in Hong Kong in 1993 to discuss the complex issues, including the implications of developing product and process standards in markets around the world.

Many participants at the conference, co-sponsored by the American Bar Association, the Inter-Pacific Bar Association and the US-Asian Environmental Partnership, believe countries like Thailand, will come under increasing pressure during the mid to late 1990s from environmentally motivated unilateral trade sanctions.

Issues causing concern include:

*Non-tariff barriers to trade will be imposed by western industrialised economies determined to protect their industries from the loss of international competitiveness caused by cost inflating, domestic environmental compliance standards.

*Environmental trade sanctions will also be used as an excuse to protect uncompetitive industries and for pressure and consumer groups.

*The emergence of NAFTA and the Single European Market also holds the prospect of harmonized standards in major markets. Rising safety and environmental requirements for goods imported into these trading blocs could also act to freeze out developing world manufacturers who fail to adjust to match new, tougher standards.

The limited number of unilateral trade sanctions stemming from environmental issues to date are set to increase dramatically.

Following the conclusion of the Uruguay Round of the General Agreement on Tariffs and Trade (GATT) some observers, including retired GATT Secretary General Arthur Dunkel, believe environment will be a dominant and highly contentious issue in subsequent trade negotiations.

At the Hong Kong conference, Thai delegate Kriangsak Kittichaisaree, of the Ministry of Foreign Affairs, presented a paper stating his personal viewpoint, saying: "The Asia-Pacific nations have been increasingly faced with trade sanctions and embargoes unilaterally imposed by a country to enforce its own national environmental objectives and to induce the targeted countries to adopt comparable environmental policies or standards."

To date, environment related trade disputes have been dominated by a few high profile cases.

*The August 1990 US Tuna-Dolphin ban was imposed against five countries which fished for yellowfin tuna in the Eastern Tropical Pacific and against tuna and tuna products from intermediary countries, including Thailand. The ban was a unilateral action by the US.

"It was noted that the US embargo...was the twenty-third time that the US had embargoed imports of tuna. There was widespread suspicion that the United States was using an ecological-environmental-conservation excuse to protect its own tuna industry," commented Kriangsak.

Although a GATT panel ruled against the US ban, for political reasons no country moved to enforce the ruling or take retaliatory trade actions.

* A US law, International Dolphin Conservation Act, which came into force in October 1992, provides the basis for a series of compromise agreements between the US and affected nations. A five-year moratorium on catching yellowfin tuna is scheduled to take effect from March 1, 1994 and during the moratorium period "parties to the agreements are to participate in an international research programme on dolphin-safe fishing techniques."

Some view this as a compromise which lies heavily in the US's favour.

"The requirement of the 1994 moratorium as a prerequisite for the lifting of the currently imposed embargo is tantamount to compelling other countries to accept the United States unilaterally defined standard on the conservation of dolphins," explained Kriangsak."

Threatening other nations with trade sanctions, unless they enter into international agreements to save dolphins, is not the option envisaged by the GATT Panel or by UNCED (United Nations Conference on Environment and Development, June 1992)."

*A second area of dispute, causing international tension, is the tropical timber law introduced by Austria in September 1992. The law requires that all tropical timber, products from tropical timber and those containing tropical timber, be labelled to distinguish them from wood derived from sustainable forest management.

In November 1992, Malaysia submitted a protest to the GATT Council on behalf of Thailand and the other ASEAN nations, which claimed that the Austrian legislation was "a highly discriminatory and arbitrary restrictive trade measure in the name of environmental protection which could create a dangerous precedent for other countries.

Observers have accused Austria of "unilaterally deciding what constitutes sustainably managed forests when there is no international consensus on the criteria and determination of sustainably managed forests." Malaysia, likely to be the country worst affected by the law, argues that it practises sustainable forest management. The GATT case is continuing.

Policy makers worldwide vouch that unilateral environmental trade measures will be detrimental and the overwhelming number of states at the June 1992 UNCED meeting in Rio agreed with Principle 12 of the Rio Declaration on Environment and Development. Principle 12 states:" States should co-operate to promote a supportive and open international economic system...Trade policy measures for environmental purposes should not constitute a means of arbitrary or unjustifiable discrimination or a disguised restriction on international trade."

In reality, however, there are increasing signs that western governments will come under pressure from domestic industry, increasingly aware of the cost implications of environmental clean up and control, and powerful green lobbyists, to act against imports from industries in countries perceived not to have adequate environmental protection.

Product and Process Standards

The question of harmonized or minimum product and process standards for manufactured goods has increasingly fallen under the international spotlight in recent years and is of particular relevance to Thailand.

Mr. Kasem Snidvongs, Permanent Secretary to the Ministry of Science, Technology and Environment, speaking at the Hong Kong conference, stressed the point: "The timing of the establishment of an effective environmental management system has become critical in developing countries depending on export such as Thailand."

Commenting on the "growing threat" of environmental issues being introduced into international trade, he added: "There are now vehicles which the environmentalists can utilize such as the common single standards of the European Community."

"The introduction of environmental barriers to international trade at this juncture is premature and could derail the efforts of many developing countries including Thailand on the introduction of effective environmental management systems," warned Mr. Snidvongs.

US attorney Paul Bousquet, of the Washington law firm, Winthrop, Stimson, Putnam & Roberts, addressed the question of product and process standards in a detailed presentation in Hong Kong.

"The specific question that has raised the most controversy in the area of trade and the environment is whether product and process standards should be harmonized," explained Mr. Bousquet.

"The dispute over harmonization is intense because not only do environmentalists and trade practitioners disagree about harmonization, they tend to take the opposite view. While environmentalists generally support minimum process standards, they almost always oppose harmonizing product standards because they believe that harmonized standards would in many cases lower hard-fought for domestic standards."

Mr. Bousquet believers environmentalists have succeeded in convincing the parties to NAFTA that their views on product harmonization are correct since "that agreement does not provide an effective basis to challenge environmental standards as too strict."

"In contrast, environmentalists support minimum and in some cases even harmonized process standards. Here, they argue the impacts of pollution and species destruction are so pervasive that they should be considered to have a global impact and should be regulated by the international community."

He added: "Moreover, they are unwilling to see domestic environmental standards undercut domestic manufacturers because imported goods, produced without regard to environmental standards, are cheaper than domestic goods."

Warning of the impact that harmonized process standards could have, he said: "Unilateral imposition of process standards could create a nightmare of trade restrictions. If the stricter pollution standards for an industry could be used to justify a trade restriction, then each industry in every country would have to be compared to see which had the stricter pollution control level.

"For example, if the Japanese semi-conductor industry had stricter standards than the US industry, Japan could apply restrictions on the import of semi-conductors. If a U.S. speciality chemical industry had stricter standards than its counterpart in Japan, then the United States could apply restrictions. There would be no end to such comparisons."

Thai manufacturers with high levels of exposure in European and North American markets, observers stress, should track the environmental threat to trade and act early to avoid being frozen out of their lucrative export markets.

A Green Ticket to Sell in Europe-Beating Down the Barriers

EUROPE, a region in which environmental legislation is developing rapidly, could eventually comprise a market of more than 500 million people bound by uniform trade, product and process standards.

It's a market that no exporting Thai company can afford to ignore. In 1992, Thailand traded 20 percent of its overall exports with the European Community. Figures for 1990 reveal the country achieved a Baht 30 billion (US$ 1.2 billion) trade surplus with the EC.

The EC's importance as an export market for Thai products is set to grow further.

At present, 343 million people living in 12 countries are part of the European Single Market introduced in 1992. An additional 8 countries, with a joint population of 75 million, have applied for membership and 10 other countries have expressed an interest in joining.

New national and European Community (EC) promoted regulations mean products which do not match up to tough environmental and safety requirements could be frozen out of the lucrative European market.

Two European eco-initiatives could, if adopted by Thai producers, assist them in overcoming environmentally inspired trade barriers and place their companies ahead of other producers targeting wealthy European consumers and business purchasers.

In March 1992, the EC introduced a community-wide Eco-Labelling Scheme and has followed this with an Eco Management and Audit Regulation (EMAR), which came into force in March 1993.

British environmental consultants, Andy Wells, and Bob Kenyon, gave detailed presentations on the EC initiatives to the Federation of Thai (FTI) industries in June 1993.

Mr. Wells explained the background to the EC's EMAR initiative, saying: "The objective of the Eco Management and Audit Regulation is to promote continuous improvements in the environmental performance of industrial activities."

The scheme will achieve this in three ways:

*by encouraging companies to establish environmental protection systems;

*by periodic evaluation of those systems;

*and by ensuring companies inform the public about their environmental performance.

The impact of the regulation on Thai companies will come in a number of ways. European firms operating under EMAR will demand higher environmental product and process standards from Thai and ASEAN supplier firms.

"It would be beneficial for these ASEAN companies to have an environmental policy as a likely minimum requirement in a supplier/contractor chain for business-to-business customers.

"Additionally, the Regulation refers to consideration being given to the "environmental performance and practises" of contractors, sub-contractors and suppliers. In this case it is likely that more practical information than that contained in an environmental policy may be requested by a business customer, as those EC companies working towards the regulation are required to ensure that suppliers also comply with the company's environmental policy," said wells.

Wells said that ASEAN companies could use the principles of EMAR "to help them establish an environmental management system for their own company." Any Thai company implementing an environmental management system on that basis would be in a strong position to deal with European firms demanding higher product and process standards, he added.

Initially the scheme is voluntary for European companies but will be reviewed after five-years. "It is widely thought that if the scheme is not seen to have been enthusiastically accepted by industry, changes may well be made to make it more mandatory in nature," the consultant said.

The earlier initiative introduced by the EC, the Eco-Labelling Scheme, also has implications for Thai consumer product exporters. A Thai company capable of achieving the Eco-Label standard would be in a strong marketing position when dealing with European distributors and outlets.

"The EC Eco-labelling scheme will introduce a standardised environmental label recognised throughout all EC countries. It will give consumers official guidance to distinguish between manufacturers' environmentally friendly claims," explained Mr. Kenyon.

Goods which are produced and distributed in line with exacting standards, based on a "cradle to grave analysis" of environmental factors associated with the products, will be able to use the EC Eco-label.

A group of experts in each European country, called the Competent Body, will judge whether products submitted for an Eco-label fulfill the necessary criteria.

"ASEAN exporting companies—including Thai firms—will be able to apply to member state "Competent Bodies" either to suggest a new product category or to apply for a product label. The member state you should apply to is the country to which you first export to a list of products awarded and an Eco-label will be published in the Official Journal of the European Communities," the consultant added.

To date, assessment criteria have been laid down for washing machines and dishwashers, and those for hairsprays, light bulbs, toilet paper and kitchen tissues, will follow very shortly.

However, this is the tip of the "Eco-label Iceberg" and, in time, many hundreds of products, not including food, drink or pharmaceuticals, will be covered by the Eco-labelling scheme.

CURRENT STATUS OF ENVIRONMENTAL POLLUTION IN THAILAND

By

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At present, Thailand has 58 million population where 31% live in urban areas. The population data are shown in Table 1. In the past 15 years, Thailand has experienced rapid industrialization and urbanization. In 1992, Thailand has over 120,000 factories with internal migration of 7.5 million people or 12.9% of the total population. Man has used the natural resources for economic development and at the same time created environmental pollution (Fig. 1). The important environmental pollution problems in Thailand are summarized as follows:

1. Destruction and Pollution of Natural Resources

From satellite pictures in 1992, forestry area was reduced to only 26.6% of the total land. The trend of deforestation is increasing mostly from illegal logging practices. The mangrove forest along the sea coast also was reduced drastically from 2.3 million rais (1 acre = 2.5 rais) in 1967 to 1.1 million rais in 1989 due to shrimp farming, resort establishment, factories etc.

2. Air and Noise Pollution

This type of environmental pollution occurs in urban cities and towns due to automobiles and factories. Bangkok with the population of 8.5 million, 2.4 million cars, 2.5 million motorcycles has also experienced air pollution especially with dust (SPM) and carbon monoxide (Table 2). A large number of factories produce hazardous wastes, and air and water pollution (Table 3). Various types of factories which give polluted emissions are shown in Table 4. Bangkok experienced the bad effect of air pollution with respiratory ailments heading the list of illness among Bangkok people. The recent data in 1990 on the health examination of traffic policemen in Bangkok (Table 5) revealed hearing defects (22.5%), pulmonary diseases and sinusitis including allergy (14%). Besides dust and CO, the study by Mahidol University and Hawaii University in 1989-90 concerning hydrocarbon compounds in the air from automobiles in Bangkok showed over 10 carcinogen compounds in the air (Table 6). The consumption of CFC and Hanlons are still high (Table 7) in Thailand. The consumption of CFCs by various types of industry in Thailand is demonstrated in Table 8. It can by seen that solvents, refrigeration, and air condition amount to 77% of the total CFC's consumption. Attempts have been made to reduce the problem. The trend of air pollution in Bangkok and other big cities is increasing.

Results of study in 10 major roads in Bangkok by the National Environmental Board in 1991 showed that the noise level measured at the foot path near these roads was between 76.2-81.3 decibels which exceeds the 70 decibel standard. The noise pollution came mainly from motorcycles and automobiles. Many motorcycles had sawed off their silencers. In the canals, most long-tailed boats also produced above the 70 decibel noise limit. Loud noise was also found in several public and privately-owned factories eventhough there is law to control it.

3. Water Pollution

Due to rapid industrialization, urbanization, and tourism, water pollution problems occur all over Thailand. Most of the 25 major rivers were found to be polluted. Data in Table 9 showed the problem in 3 out of 4 rivers. Strict law enforcement is still a big problem here. Extensive use of insecticides, fungicides, and herbicides in farms and golf courses futher deteriorates the water condition. The quality of sea water near several resorts was also found to be below international standards. In terms of safe drinking water, 75% of total households have clean water supplies but the target is 95%. Tap water in Bangkok is still not safe to drink due to corroded water pipes and Bangkok is only 1 meter above sea level.

4. Hazardous Wastes

Thailand produces about 2 million tons of hazardous wastes yearly (Table 10). Hazardous wastes from factories are the biggest threat. At present there is only one government-owned detoxifying place which can handle only 50,000 tons/year. Although the Ministry of Industry plans to establish 4 more detoxifying factories, it is still not adequate. Infectious wastes in Thailand are the second major threat because of AIDS, Hepatitis B, Malaria parasites, etc. Large numbers of hospitals and clinics in Thailand still do not sterilize these infectious wastes at the time of disposal. Used batteries with several kinds of heavy metals are still thrown away at all places. Last year, Thailand produced 390 million flashlight batteries, they were thrown away with ordinary garbage. Illegal entrance of hazardous wastes from foreign countries is still an important problem in Thailand.

5. Toxic Chemicals in Food

The agriculture sector has used a lot of chemicals to produce more crops. Data in Table 11 show that in 1988 24,251 tons of toxic chemicals were imported for farming practices with an increasing trend. In 1989, there were 5,348 patients who got sick after being exposed to insecticides with the mortality rate of 10/100,000. The morbidity trend was increasing. The ratio of affected men to women was 2:1. The largest group of patients was farmers with the highest morbidity in the age group of 25-34 years old. Almost 60% of insecticide poisonings were in the organophosphate group with the largest group in the northern provinces of Thailand followed by the central provinces. Besides the insecticide poisoning among farmers, various insecticide residues were also detected in various agricultural crops although most were below the minimal standard of safety (Table 12). The list of important toxic chemicals (in decreasing order of importance) used in agriculture and public health in Thailand and caused public problems are as follows:

1. Parathion
2. Paraquat
3. Methyl parathion
4. Methonyl
5. Propoxuo
6. DDT
7. Arsenic
8. Carbofuran
9. Mevinphos
10. Zinc phosphide

Thus, all of the above environmental pollution still goes on in Thailand although the Thai Government has definite plans to prevent and solve the existing problems.

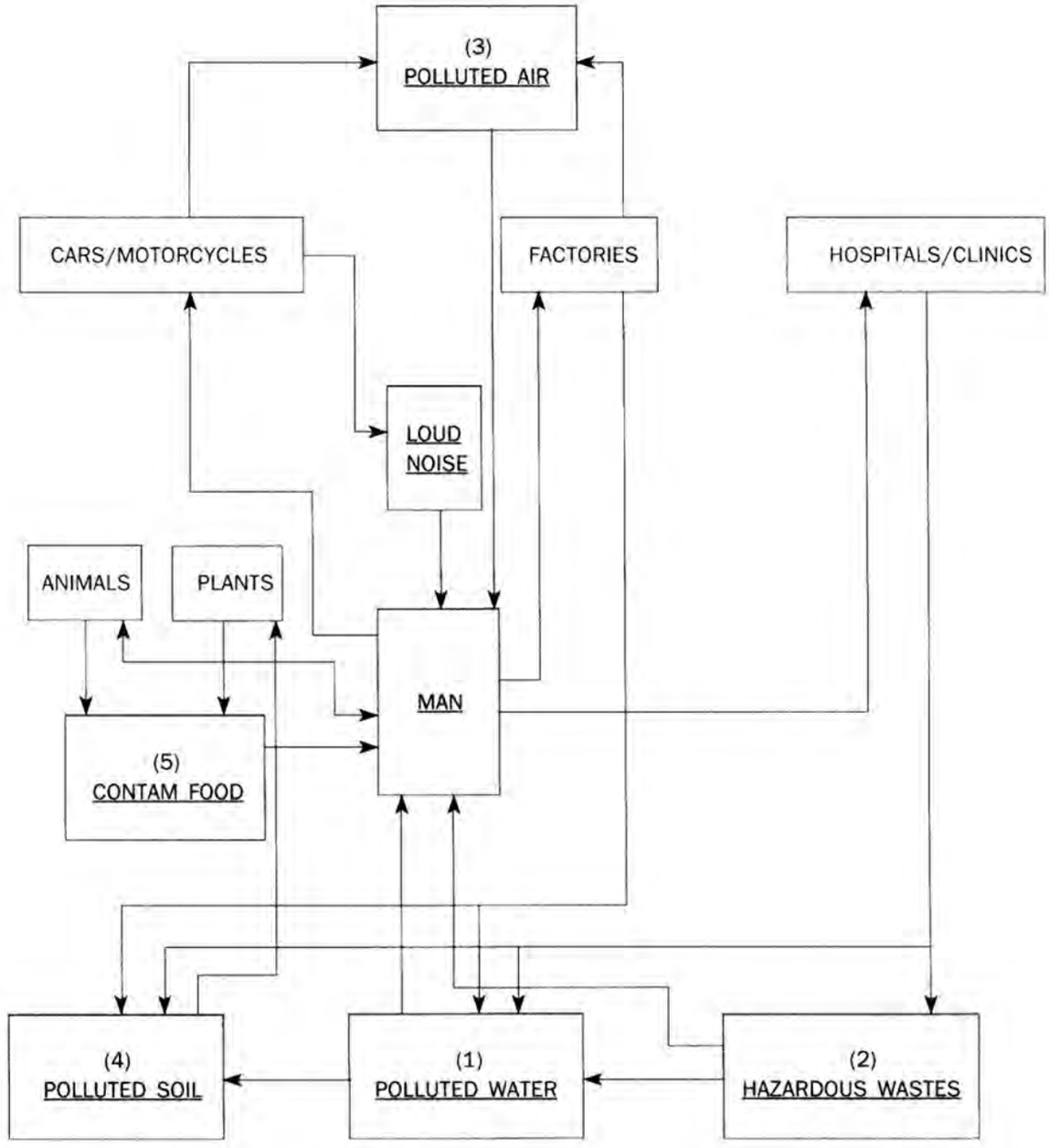
(3)
POLLUTED AIR
CARS/MOTORCYCLES
FACTORIES
HOSPITALS/CLINICS
LOUD
NOISE
ANIMALS
PLANTS
MAN
(5)
CONTAM FOOD
(4)
POLLUTED SOIL
(1)
POLLUTED WATER
(2)
HAZARDOUS WASTES

TABLE 1. POPULATION STATISTICS IN THAILAND (JULY 1, 1993)

1. Total Population (in thousands)	58,120
2. Population by Sex (in thousands)	
Male	29,043
Female	29,077
3. Urban Population (in thousands) (30.7%)	17,855
4. Rural Population (in thousands) (69.3%)	40,265
5. Population by Region (in thousands)	
Northeastern (33.7%)	19,592
Central (exclude Bangkok) (25%)	14,518
Northern (16.3%)	9,445
Southern (12.2%)	7,108
Bangkok Metropolis (12.8%)	7,457
6. Population by Age Group (in thousands)	
Under 15 (28.8%)	16,738
15-59 (63.9%)	37,139
60 and over (7.3%)	4,243
7. Crude Birth Rate (per 1,000 pop.)	17.4
8. Crude Death Rate (per 1,000 pop.)	5.9
9. Natural Growth Rate (percent)	1.2
10. Infant Mortality Rate (per 1,000 live births)	35.5
11. Life Expectancy at Birth (years)	
Male	66.4
Female	71.8
12. Total Fertility Rate (per woman)	2.2
13. Contraceptive Prevalence Rate (percent)	75.0
14. Population in year 2,000 A.D. (in millions)	71.0
15. Migration within Thailand (1992) (12.9%)	7,500,000

Source of Data: Institute for Population and Social Research, Mahidol University, 1993

TABLE 2. AIR QUALITY NEAR MAJOR STREETS IN BANGKOK

Pollutants	**Measured Range (ug/m^3)**	**Thai Standard (ug/m^3)**
1. Suspended Particulate Matter (24 hrs.)	90-200	100
2. Carbon Monoxide* (8 hrs.)	10-22	20
3. Lead (ambient air)	0.2-0.7	10
4. SO_2	7-15	100
5. NO_2	16-34	320
6. Ozone	up to 150	200

Source : Office of the National Environmental Board, Thailand, 1992
Remark : *mg/m^3

TABLE 3. NUMBER OF POLLUTING INDUSTRIES IN THAILAND

Year	(1) Water Polluting	(2) Air Polluting	Total (1+2)	Hazardous Waste
1969	159	68	211	248
1979	5,393	2,241	7,030	7,183
1989	20,221	8,120	26,235,	17,056

Source : Department of Industrial Works, Ministry of Industry, 1992

Remarks : 1. The total air and water polluting industries excludes those which come in both categories, to avoid double-counting

2. Only factories producing large and moderate quantities of hazardous waste are reported

TABLE 4. EMISSIONS OF POLLUTANTS FROM MAJOR INDUSTRIES IN THAILAND

Industry	CO_2	SO_2	NO_x	SPM
1. Non-Metal	25.11	40.77	47.16	51.62
2. Food	50.32	16.66	21.36	36.24
3. Pulp and Paper	3.94	8.21	7.73	8.05
4. Textile	6.14	14.51	5.42	1.08

Units : percentage share of total industrial emissions

Source : Thailand Development Research Institute, 1992

Remark : The non-metal industry includes cement manufacture, glass, ceramics etc.

TABLE 5. RESULT OF HEALTH EXAMINATION OF 1,742 TRAFFIC POLICEOFFICERS IN BANGKOK

Disease Condition	Percentage
1. Hearing defect	22.5
2. Pulmonary diseases	9.5
3. High blood pressure	5.6
4. Chronic Sinusitis	3.7
5. Allergy	0.9
6. Anemia	0.8
Total	41.0

Data : Police Department, Ministry of Interior, 1990

TABLE 6. OUTDOOR CONCENTRATIONS (UG/M³) OF VOLATILE ORGANIC COMPOUNDS BY TENEX GRAB SAMPLING AT ON-NOOCH DUMP AND NEARBY COMMUNITY IN BANGKOK

Compound	Site	
	Garbage Dump	Nearby Community
Isopentane	6	1
n-Pentane	5	1
2-Methylpentane	11	2
3- Methylpentane	8	2
n-Hexane	25	4
Methylcyclopentane	9	1
Benzene	13	14
2-Methylhexane	12	2
3-Methylhexane	14	2
n-Heptane	25	3
C7 hydrocarbon	20	3
Toluene	700	31
N-Octane	23	2
Ethylbenzene	120	6
M&p-Xylene	330	12
o-Xylene	110	4
Ethyltoluene	46	10
1, 2, 4-Trimethylbenzene	54	3
Methylene Chloride	26	-
Methyl Chloroform	61	-

Data : Study on Air Pollution in Bangkok 1989-90 by Faculty of Public Health, Mahidol University, Thailand and East West Center

TABLE 7. CONSUMPTION OF CFCS AND HANLONS IN THAILAND

ODS*	1986	1989	1990	1991**
1) CFC-11	500	1,070	1,520	3,090
2) CFC-12	1,000	1,925	2,730	4,140
3) CFC-113	1,000	2,000	3,030	3,270
4) Hanlon-1211	20	40	90	108
Total	2,520	5,030	7,370	10,608

Units : Tons

Source : Department of Industrial Works, Ministry of Industry, Thailand, 1992
Remarks : *Ozone depleting substances
**The 1991 figures are estimates based on import data from January to April

TABLE 8. CONSUMPTION OF CFCS BY INDUSTRY IN THAILAND IN 1990

	Tons	Percentage
1. Solvents	2,960	40
2. Refrigeration	1,450	20
3. Air conditioning	1,250	17
4. Plastic foam products	1,130	15
5. Aerosols	490	7
6. Fire fighting equipment	90	1
Total	7,370	100

Source : Department of Industrial Works, Ministry of Industry, 1991

TABLE 9. WATER QUALITY IN THAILAND'S MAJOR RIVERS

River	Standard	1987	1988	1989
1. Chao Phraya River				
Upper	1.5	1.6	1.7	1.0
Middle	2.0	1.8	1.8	2.4
Lower	4.0	4.0	3.8	2.8
2. Tachin River				
Upper	1.5	2.7	2.0	2.9
Middle	2.0	2.4	2.8	2.6
Lower	4.0	4.0	3.6	2.7
3. Mae Klong River	2.0	2.2	1.8	2.0
4. Bang Pakong River	2.0	1.3	1.7	1.2

Units : mg/L of BOD

Source : Office of the National Environmental Board, Thailand, 1992
Remark : Figures are annual average readings of the ambient BOD concentration in the river water

TABLE 10. TYPES AND VOLUMES OF HAZARDOUS WASTES IN THAILAND

Waste Type	1986 (Tons)	1991 (Tons)
1. Heavy metal sludge	823,869	1,447,590
2. Oil residues	124,194	219,467
3. Acid Waste	81,054	125,428
4. Infectious Waste	46,674	76,078
5. Solvent	19,783	36,163
6. Alkaline Waste	21,952	34,235
7. Inorganic sludge	11,698	19,254
8. Photographic waste	8,820	16,348
9. Municipal waste	7,231	11,787
10. Organic sludge	3,737	6,674
11. Liquid organic waste	187	311
12. Aqueous organic waste	116	242
13. Off-spec products	12	25
Total	1,151,729	1,993,602

Source : Engineering Science Inc., Thailand, 1992

Table 11. Quantity and Cost of Imported Toxic Chemicals Used in Agriculture Sector in Thailand, 1985, 1988

Type		1985	1986	1987	1988
1. Insecticides (68 types)					
	Q	6,250	6,206	6,673	8,034
	C	773	778	765	1,137
2. Fungicides (66 types)					
	Q	3,717	3,669	6,524	6,382
	C	198	214	288	350
3. Herbicides (39 types)					
	Q	6,378	4,081	5,864	8,273
	C	519	388	570	822
4. Fumigation Chemicals					
	Q	584	813	457	777
	C	40	65	41	43
5. Chemicals for Ectoparasites					
	Q	450	331	936	423
	C	42	33	83	48
6. Rodenticides					
	Q	26	34	86	362
	C	2	3	5	19
Total	Q	17,405	15,134	20,270	24,251
	C	1,574	1,481	1,752	2,410

Source : Ministry of Agriculture, 1989
Remark : Q = tons
C = cost in million bahts (US $ 1 = 25.6 bahts)

TABLE 12. REPORT ON SURVEY OF INSECTICIDE RESIDUES IN VARIOUS AGRICULTURE PRODUCTS, 1982-1985

Type	No. of Specimens tested	No. Detected	Insecticide types	Above safety standard
1. Vegetables	66	63	OC, OP	1
2. Fruits	85	50	OC, OP, CA	0
3. Rice	606	548	OC	2
4. Palm oil	225	184	OC	1
5. Other crops	253	219	OC, OP, CA	3
6. Meat products	90	63	OC	0
7. Chicken eggs	112	110	OC	0

Source : Ministry of Agriculture, Thailand, 1986
Remark : OC = Organochlorine insecticide
OP = Organophosphate insecticide
CA = Carbamate insecticide

BIOTIC CARBON OFFSET PROGRAMS: SPONSORS OF OR IMPEDIMENT TO ECONOMIC DEVELOPMENT?

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ABSTRACT: The effects of a changing climate could fundamentally disrupt critical economic progress in many developing countries. Accelerated economic development activities are often discussed as a means to mitigate long-term climate change by altering energy and environmental infrastructures to promote improved energy efficiency and reduced greenhouse gas emissions. Efforts intended to mitigate climate change could spur economic development in many sectors. However, the link between potential climate change mitigation and economic development around the world is complex. Serious consideration must be given to assess the compatibility of climate change mitigation with economic development objectives. Biotic global warming mitigation measures (e.g. forest protection, reforestation, and biomass energy utilization) present a mixed picture from an economic development perspective. It has long been recognized that there is a great need for increases in investment to improve forest and resource management in developing nations; existing national and international funding does not adequately address the basic objective of sustainable productivity. Climate change mitigation is being increasingly perceived as a source of new funding for such programs. For example, if biotic mitigation mechanisms were employed to reduce or offset net global carbon emissions by 1 billion metric tons per yr^1 (about 15% of the current global total) estimated US$5 to 10 billion could be spent annually, a significant increase in the context of current land-use and forest management expenditures in developing countries. Depending on how this money is spent, economic development prospects could be promoted or hindered.

INTRODUCTION

The potential consequences of global climate change due to increased atmospheric concentrations of several greenhouse gases are generating higher pressure for immediate implementation of technical and policy initiatives. Ultimately, existing energy production and consumption patterns in industrialized countries must be modified radically if CO_2 emissions are to be significantly reduced. For developing nations, projected increases in energy consumption as well as high deforestation rates need to be reduced if global CO_2 emissions are to be capped at or below current levels (IPCC 1990).

Over the long term, there is little question that the world economy will have to move away from its reliance on fossil fuels. Even with aggressive policies, however, this transition will take time. Based on economic investment in the existing energy infrastructure and on historical experience with the penetration of new technologies into the marketplace, this transition is likely to require 50 to 75 yr. During this period, preserving biotic carbon levels and enhancing biotic carbon sinks is one means to slow the accumulation of CO_2 in the atmosphere.

Scientists have been evaluating the use of forestry as a means by which to respond to the threat of global warming for some time (Dyson 1977, Marland 1988, Trexler 1991, Sampson & Hair 1992). The Noordwijk Declaration of December 1988, by establishing global targets for reversing the decline in global forest cover as a means of mitigating global warming, formalized the linkage between forestry and global warming at the political level (Ministerial Conference 1988). Since then, evaluation of forestry as a mitigation option has proceeded at all levels (NAS 1991, IPCC 1991).

The increased attention being given to forestry activities as a means to reduce net anthropogenic CO_2 emissions and to enhance global carbon sinks will likely result in availability of funding for projects designed to offset carbon released in the energy sector. These offset projects will be located in regions where carbon can be cost-effectively sequestered or prevented from being emitted in the first place, including many developing nations. This includes countries where deforestation rates could be reduced, as well as those where land availability and climatic conditions create reforestation and other biomass accumulation opportunities. This leads to an important consideration: how will CO_2 mitigation projects affect the economic development of these countries? At first glance, it is tempting to conclude that the influx of billions of dollars into the natural resource management sectors of developing nations should benefit their long-term economic development. However, the lack of experience with such projects suggests that this conclusion should be examined more closely.

This paper conceptually explores the possible link between biotic carbon offset funding and the long-term economic development objectives of developing nations. It is intended to raise issues and questions that should form the focus of a dialogue to address policy development in this area. As a conceptual think-piece, the paper does not seek to predict the future, nor does it explore all the possible variations in the mentioned scenarios. The paper first provides background information on the rationale for and the mechanisms of biotic carbon offsets in developing nations. An examination of the components that make up a "successful" carbon offset project versus a "successful" economic development project provides a general framework from which to analyse the overlap or divergence between the two objectives. As part of this discussion, existing carbon offset projects are briefly described and reviewed. Finally, several carbon offset funding scenarios and their dramatically different impacts on economic development are presented to emphasize why these issues require near-term policy attention.

CARBON OFFSET APPROACHES

Climate change mitigation can be accomplished using one or a combination of the following forestry options:

- slowing the loss or degradation of existing forests, thus preserving current carbon reservoirs (forest protection management and agricultural advances);
- increasing forest and tree cover on existing lands, thus enlarging living terrestrial carbon reservoirs (natural regeneration, reforestation, agroforestry);
- increasing the carbon stored in nonliving carbon reservoirs such as soils;
- displacing fossil fuel consumption with sustainable biomass energy sources, thus reducing net energy related carbon emissions.

Although all of these options are conceptually valid, each can have distinct advantages and disadvantages under different circumstances (Trexler & Haugen 1993). Each can also have different implications for economic development goals and objectives. Because of high deforestation rates, high rates of land availability, low relative costs, and high rates of potential biomass accumulation, it is often suggested that these options can be pursued effectively in the tropics (Grainger 1988, Houghton et al. 1991, Trexler & Haugen 1993). Slowing CO_2 emissions related to land-use change, for example, is perhaps the most direct and immediate means by which to influence global warming, since forest loss and degradation combined are probably leading to the emission of between 1 and 2 Gt C yr^{-1} (Dale et al. 1991).

In principle, forestry efforts and other land-use practices in developing nations that would help mitigate global climate change offer an opportunity to advance two objectives: (1) provide offenders (national governments and/or emitters of CO_2) with an array of carbon offset projects and options, thus increasing the cost-effectiveness of an overall mitigation portfolio (Dudek & LeBlanc 1990); and (2) provide developing nations with new funding to promote their own objectives of sustainable economic development and natural resource base maintenance and restoration. Global climate change mitigation projects can assist countries in preserving or managing their existing forest resources; restoring productive uses to degraded or abandoned lands; developing local and national supplies of wood, energy, and other economic products; and meeting the needs of poor or rural populations for a sustainable resource base and for economic growth.

FUNDING CARBON OFFSETS

Globally, climate change mitigation efforts are portrayed as a potential source of massive new funding programs for forestry and land-use management. The source of this funding will either be governmental (bilateral or multilateral) or non-governmental (private for-profit or not-for-profit firms). In today's budget-constrained world, however, governmental funding may result more from a reallocation of spending rather than a significant net funding increase. Funding previously intended for economic development of sustainable forest management might be reassigned, for example, to a climate change mitigation budget line, even if the ultimate project being funded remains similar. It is likely, therefore, that private-sector funding presents the greatest short- to medium-term opportunity for large-scale increases in funding for resource management and energy sector programs intended to mitigate future climate change. This has implications for the impact of such funding on economic development, since private-sector funding is likely to be more narrowly focused on carbon sequestration objectives than public funding would be.

Large energy-producing or energy-consuming corporations in the industrialized countries are actively interested in forestry as a climate change mitigation measure both in reaction to the evolution of scientific thought regarding climate change and the growing consideration of mitigation objectives by legislative bodies. The energy sector is responsible for roughly 70 to 80% of anthropogenic CO_2 emissions (Houghton et al. 1991). Without changes in current trends, the Intergovernmental Panel on Climate Change (IPCC) estimates that energy-related carbon emissions in industrialized countries alone will increase by almost a billion metric tons within 10 yr (IPCC 1990). Most policymakers therefore perceive energy-related companies, and utilities in particular, as primary targets for greenhouse gas emission control strategies. Several kinds of emission reduction strategies are now being considered, and it appears likely that a regulatory regime to control CO^2 emissions will be established relatively soon (Dornbusch & Poterba 1992, Dower & Zimmerman 1992). Thus, large CO^2 emitting industries such as electric utilities have a significant stake in finding viable cost-saving ways to meet future emissions restrictions or avoid emission-based fees. Forestry measures and forestry-based carbon offsets can offer these emitters an alternative that is potentially cheaper than paying a carbon tax or directly reducing their emissions.

In 1988, the AES Corporation, an independent power producer in the United States, became the first entity to initiate a voluntary CO_2 offset policy based on tropical forestry. AES committed US$ 2 million to an agroforestry and forest conservation project in Guatemala to help offset the emissions associated with a new coal-fired power plant to be built in Connecticut (Trexler et al. 1989.) Today, more utilities have implemented or are investigating similar CO_2 offset projects in the forestry sector (Kinsman & Trexler 1993).

If biotic mitigation projects were to grow to the point of offsetting 1 Gt of global carbon emissions per year (some 15% of current global fossil fuel emission), US$5 to 10 billion probably would have to be spent annually. Combined with potential new governmental funding for global warming mitigation, this spending could dramatically increase the total resources available for forestry and land-use management efforts in developing countries.

GLOBAL WARMING MITIGATION VS ECONOMIC DEVELOPMENT GOALS IN CARBON OFFSET PROJECT DESIGN

Several variables influence how and whether a proposed carbon offset project serves the objectives of reducing the probability or magnitude of climate change. Another set of variables influences a given project's role in encouraging economic development. Under a mandated system of CO_2 emissions reductions or offsets, CO_2 emitters likely will be held responsible in some way for the success of projects they choose to pursue. Notwithstanding limited experience with the carbon offset concept, extrapolation from other regulatory programs can suggest criteria that ultimately will be applied to climate change mitigation projects. Criteria likely to become increasingly important to the evaluation, selection, and regulatory accreditation of projects include:

- project credibility as reflected by the conceptual ability of the project's components to actually result in incremental carbon storage from a baseline over a given period;
- long-term project reliability as evaluated by global experience with similar concepts, the background and expertise of project proponents, and relevant physical, social, economic, and political variables in the country of implementation;
- verifiability of the land-use intervention or management change claimed;
- measurability of the carbon offset credit claimed;
- cost-effectiveness as compared to alternative mechanisms for controlling greenhouse gas emissions.

DESIGNING SUCCESSFUL CARBON OFFSET PROJECTS

Projects specifically designed for carbon sequestration purposes should prove better able to respond to regulatory and funding concerns pertaining to conceptual validity, verifiability, and monitoring feasibility than projects designed to meet other objectives such as conservation of biological diversity or agricultural development. Several techniques can be used to maximize these desirable characteristics in a project:

- focusing on projects likely to result in new (and measurable) biomass or in measurable fossil fuel displacement;
- focusing on regions that have high biomass production and/or accumulation potentials based on climate and soils;

- focusing on project types that "multiply" the area effect of a particular forestry intervention (e.g. agroforestry-based firebreaks that encourage natural regeneration in adjacent blocks of fire-climax grasslands);
- focusing on projects that can explicitly and credibly link biomass production through agroforestry or regeneration with the protection of existing forest biomass;
- focusing on project types for which related successful experience exists in the country's forestry or resource management sector;
- focusing on project concepts that will be expendable and replicable once developed and successfully implemented;
- structuring projects to include progress milestones that allow preliminary evaluation prior to full commitment of project funding, utilize endowments to ensure long-term funding, and provide for sufficiently long implementation periods (e.g. 10 yr or more) to assure project sustainability and carbon sequestration reliability.

Ideally such projects will be located in moist regions with good soils, low population densities, established property rights, and stable social and political systems. In reality, projects will be adapted to actual project opportunities varying in one or more respects from the ideal. Generally speaking, however, reforestation projects are less likely to be successful in the long-term sequestration of carbon when located in arid or climatologically unpredictable areas, areas with high population densities and land pressures, areas of uncertain land tenure, or areas with unstable social and political systems.

DESIGNING SUCCESSFUL ECONOMIC DEVELOPMENT PROJECTS

Much of the need for economic development in the tropics occurs in areas characterized by aridity, climatological instability, high population densities resulting in unprecedented land pressures, uncertain land tenure, and unstable social or political systems. Economic development projects are often implemented in areas with resource bases that are seriously degraded and under tremendous pressure. Given the projected regulatory credit criteria for carbon offset projects, it will be difficult to site projects in these areas.

Furthermore, development projects are often process–rather than outcome–oriented. The process of encouraging community involvement and alleviation of suffering can be as important to project success as quantifiable deliverables. There may be little emphasis on short-term deliverables because the social attributes being promoted–education, health, income–are long-term objectives. Potential carbon offset regulatory criteria require verifiability and measurability of a project's carbon offset benefits can therefore conflict with the design of many economic development projects. Indeed, some organizations known for their economic development work are questioning whether to become involved with carbon offset projects precisely because they fear losing the flexibility to pursue their social and economic development objectives.

Without needing to broach the issues surrounding the concept of sustainable economic development, a significant question emerges from this discussion: to what degree can and should climate change mitigation through biotic carbon offsets be expected to advance economic development objectives in light of the potential regulatory need to provide for a credible, verifiable, reliable, and cost-effective carbon offset? This question becomes increasingly significant as the likelihood increases that large-scale funding for global warming mitigation will become available.

ONGOING CARBON OFFSET PROJECTS

Projects being considered for global climate change mitigation funding, including the few already in existence, were in most cases originally proposed as sustainable agriculture, economic development, conservation of biological diversity, or even anti-desertification projects. They have been "recast" as carbon offset projects in an attempt to take advantage of funding now becoming available for mitigation of climate change. As a consequence many of these projects utilize approaches that are different than might have been chosen to maximize the magnitude and reliability of long-term carbon benefits. The carbon benefits of the previously mentioned AES project, for example, are very hard to quantify precisely because the project emphasizes economic development objectives. Other ongoing projects also illustrate some of the problems of conflicting objectives in project design and implementation. Nevertheless, the very existence of these pilot carbon offset projects serves the goal of long-term reductions in atmospheric CO_2. It is only through the development and implementation of a range of project types under a variety of circumstances that a thorough understanding will emerge of what really is and is not feasible in terms of long-term carbon sequestration.

Projects currently being funded for carbon offset purposes include:

- community-based afforestation in Guatemala, in which small farmers are being trained and supported in planting trees to halt erosion, increase agricultural productivity, and provide income through fuelwood, fruit, and lumber production. The carbon benefit results primarily from the protection of nearby forest associated with these measures;
- nature reserve establishment in Paraguay, in which a forest parcel targeted for sale to timber interests and containing endangered species has been purchased and is being managed for long-term conservation;
- support of indigenous peoples in the Amazon to aid in their efforts to obtain and protect ownership rights to customary lands, and thus contribute to the long-term conservation of forests located on those lands;
- implementation of "biomass friendly" harvesting practices in Malaysia to reduce damage to the forest associated with timber extraction, including better road design and directional tree felling;
- establishment of tropical hardwood plantations on agricultural land in Ecuador; and
- planting of Douglas fir on private pasture land in the Pacific Northwest of the United States.

These projects cover carbon offset possibilities ranging from social forestry to commercial plantations. Although none of these projects has been subject to regulatory accreditation, the experience of the companies undertaking these projects illustrates the difficulty of identifying credible carbon offset projects from within the economic development project portfolio. Pertinent evaluative issues include:

- the analytical challenge that can be involved in quantifying the link, if any, between sustainable agriculture projects and forest protection (with its associated long-term carbon preservation);
- the practical difficulties involved in attributing a given amount of carbon protection or sequestration to a specific policy or financial intervention, when in fact numerous interventions of various types are occurring on an ongoing basis in order to promote project success;
- the analytical means for identifying the appropriate "carbon baseline" against which to compare carbon offset project impacts, particularly in the environment, posed by complex economic development projects;
- the conceptual difficulties involved in deciding whether to assign carbon offset credit for the implementation of land-use management practices that should already have been established with or without project funding;
- the difficulties in attempting to maximize social welfare during implementation of an economic development project while always having to worry whether the carbon offset goals under which the project was funded are being advanced or impeded; and
- the modeling requirements involved in estimating the degree to which economic projects such as plantation establishment actually add to global biomass production, as opposed to simply displacing biomass production away from somewhere else.

Overall, few of the carbon offset projects currently being funded correspond particularly well to several of the regulatory objectives previously mentioned, namely carbon offset credibility, reliability, verifiability and measurability. The next generation of offset projects, designed with variables such as these in mind, will likely be more representative of what projects will look like in the future.

ALTERNATIVE OUTCOMES OF LARGE-SCALE CARBON OFFSET FUNDING

Billions of dollars may soon become available for CO_2 emissions reduction and offset efforts from industrialized countries and corporations. Based on the factors discussed above and on the perspective of the interest groups that will play a role in shaping national and international policy in this area, it is possible to suggest several plausible scenarios representing the long-term outcomes of large-scale carbon offset funding in the tropics.

THE "DEVELOPMENT-AS-USUAL" SCENARIO

A large amount of money could be spent on "doing more of the same" with respect to poverty alleviation, sustainable agriculture, etc. Concurrently, population growth in developing nations could overwhelm the carbon sequestration implications of these programs, so that 20 years later carbon would continue to be lost to the atmosphere at alarming rates through deforestation and forest degradation. Although many people might have been incrementally assisted, a net carbon loss rather than sequestration may have occurred. The

international development community could be viewed as favoring this scenario, as already suggested by attempts to procure global warming mitigation funding for anti-desertification projects that may be difficult to link to significant carbon offset benefit.

LAND-PURCHASING-AND-LEASING SCENARIO

For corporations and governments concerned about long-term reliability of carbon sequestration, the option of purchasing or leasing land in developing countries may appear attractive. Direct control over the uses made of forest or reforestable land could appear to offer the best prospects for long-term carbon offset credibility and reliability. Many countries encourage foreign investment and allow the purchase of land by foreigners. Over 10 to 20 years, large areas of land in tropical countries could end up owned or leased by private or public foreign entities.

This approach could result in considerable carbon sequestration. It is not clear, however, that this out-come would be considered an economic development success. Indeed, problems of migration to urban areas with resulting crowding and unemployment likely would be aggravated as people are displaced from the countryside by carbon offset projects. Nor could the political integrity of these parcels be guaranteed over the long-term; a political backlash accompanied by land nationalization would be a distinct possibility.

THE "WELFARE" OR "INCENTIVES" SCENARIO

Governments anxious for international debt relief or other forms of economic assistance might be tempted to commit to large-scale forest protection or reforestation in return for economic grants or debt forgiveness. This option has already been extensively discussed as a means to achieve large-scale forest protection. Although this approach could result in the promulgation of laws, policies and programs that would protect and store considerable carbon, legitimate questions will be raised concerning the likelihood that these laws and policies would actually be implemented, that local populations would ultimately benefit from these payments or that economic development would in fact occur. In many cases governments lack the ability to actually bring about the land-use changes to which they might agree. In other cases corruption or other implementation barriers might keep the money from going to its intended destination. As a result, it is not clear that this "welfare" approach would ultimately be considered an economic development or climate change mitigation success.

THE FOREST MANAGEMENT SCENARIO

Huge areas of forest that might be deforested or severely degraded in coming decades could be managed properly in an organized fashion through the availability of large-scale carbon offset funding. Currently, the economic returns from sustainable forest management usually cannot compete favourable with short-term economic returns associated with less careful management and subsequent conversion to alternative uses (ITTO 1988. Buschbacher 1990). The potential deleterious long-term economic consequences resulting from the land's inability to support anything but forest cover over the long term is generally not considered in the short-term economic equation. By compensating for the differences in rates of economic return, large-scale carbon offset funding funneled into the forest management sector could advance goals of carbon sequestration, economic development, biodiversity protection, watershed management, and indigenous peoples' self-determination. There are, however, significant technical and implementation barriers facing large-scale natural forest management in the tropics (Johnson & Cabarle 1993).

THE BIOMASS ENERGY SCENARIO

Currently, the upfront costs of planting and growing biomass crops, building an energy conversion facility (e.g. a biomass gasifier driving a combustion turbine), and installing the infrastructure needed to distribute the energy produced combine to make the pursuit of large-scale biomass energy uneconomical as compared to fossil fuels (Hall et al. 1990). There are, however, large areas of land in developed and developing nations capable of supporting sustainable biomass production at levels that would make the production of commercial energy technically feasible (Houghton 1990). As with natural forest management, large infusions of carbon offset funding could compensate for the cost difference between biomass and fossil fuel energy production. Hundreds of millions of hectares might in principle be converted to biomass energy production, storing billions of tons of carbon in new biomass and displacing the emissions of many more billions of tons of fossil fuel CO_2.

Sustainable commercial biomass energy production on a large scale, however, remains a largely theoretical proposition; a great deal remains to be understood and demonstrated about the environmental and economic implications of biofuels. Additionally, no major interest group can be identified that would have a strong preference for this scenario over others. Biomass energy is a step removed from the projects conventionally promoted by either economic development or environmental interests, notwithstanding the vital role of energy supplies both to economic development and long-term environmental protection.

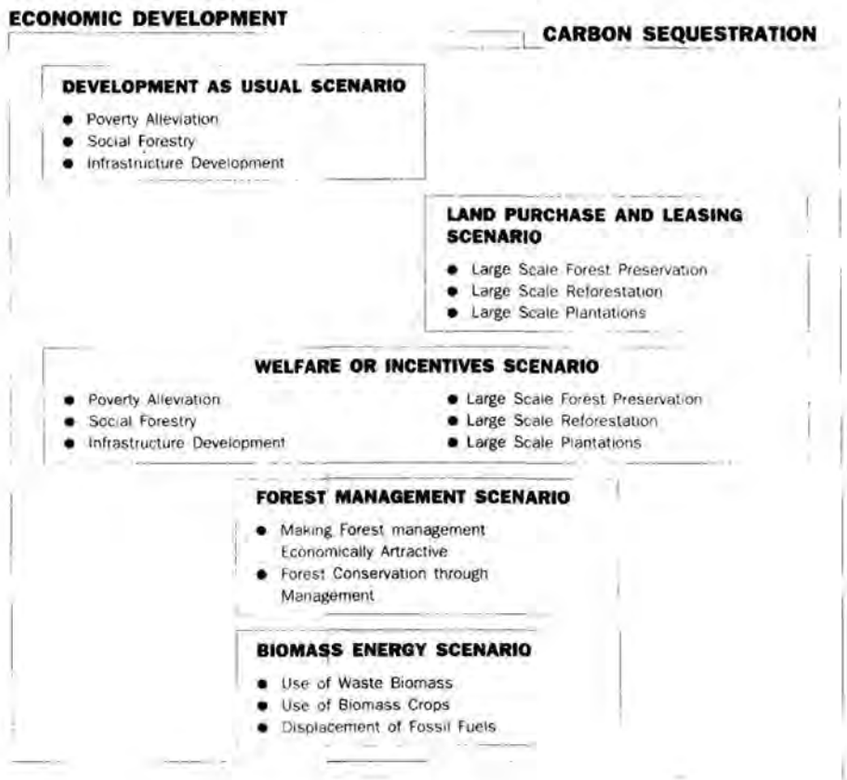
CONCLUSIONS

Each of the scenarios developed in this paper assumes that all carbon offset funding would be targeted in a single direction. This clearly oversimplifies what will likely occur, as suggested by the range of project types currently being funded for carbon offset purposes. Nevertheless, the potential offset accreditation problems associated with existing projects suggest that future carbon offset project funders will employ increasingly rigid criteria by which to evaluate potential projects as the likelihood grows that new CO_2 regulatory regimes will be implemented. Indeed, the funding bias against using carbon offset monies to support the categories of economic development projects currently viewed as receiving insufficient funding is likely to be reinforced if regulators approach the issue from the same technical perspective applied to other pollution control efforts. As previously argued, this results from the fact that the most technically defensible biotic carbon offset projects are likely to be located in remote or "safe" areas to promote reliable long-term carbon sequestration, and removed from centers of population where poverty and political instability problems are most significant.

The scenarios illustrate the potential conflicts between the economic development and carbon offset communities in spending the large sums of money that may soon become available for global climate change mitigation programs (see Fig. 1). The conflicts are intentionally exaggerated; even with respect to the "development as usual", "land purchase", and "welfare" scenarios, it is possible that projects could be designed to provide a better match among competing objectives. Nevertheless, we suggest several conclusions:

(1) Massive new private-sector spending on carbon offsets in developing countries could be spent in ways having very different implications for a country's resource base, population, and economy.

(2) It should not be assumed that private-sector goals associated with gaining regulatory accreditation for carbon offset projects will correspond well to the economic development priorities of many developing nations.



(3) Certain approaches to carbon offset forestry are more likely than others to advance both global climate change mitigation and economic development goals. Perhaps most obvious are natural forest management and the commercial utilization of biomass energy in the tropics. Both could play major roles in creating jobs and increasing national incomes, and both could be significant in reducing net anthropogenic CO_2 emissions from those countries and globally. Unfortunately, neither option has a powerful advocacy group with a self-interest in promoting the option in place, and significant technical impediments remain.

(4) The economic development community, to the extent it hopes to benefit from carbon offset funding, should promote carbon offset concepts that represent a confluence between the two sets of objectives. This may require modification of existing priorities and funding wishlists.

(5) As public and corporate policy develops in the area of global warming mitigaion, it may be that different kinds of carbon offset projects should be pursued by different funders. Private funders, for example, might best pursue projects specifically meeting the five regulator criteria previously discussed and providing for relatively secure long-term carbon benefits (e.g. forest protection, regeneration, and reforestation). Public funders might best pursue projects that have high potential payoffs for both global warming mitigaion and economic development (e.g. agroforestry, social infrastructure, fuelwood supplies), but may be difficult to reliably predict and verify in terms of long-term carbon benefit.

(6) As regulators begin to provide policy guidance to private enterprises as to the regulatory criteria that will be used in granting carbon offset accreditation, the implications of each criterion should be carefully considered. By definition, carbon control and offset regulations will have to be designed in a less quantitatively rigorous manner than NO_x or SO_2 control regulations, which are based on emissions monitoring at the stack. CO_2 emissions do not pose the short-term health and environmental impacts that NO_x or SO_2 emissions do.

(7) Some CO_2 control measures result in dramatically more important ancillary benefits than do others. Regulators may wish to encourage private funders to undertake projects that might be difficult to quantify in terms of CO_2 offset benefit, but that clearly have the potential for long-term payoffs in meeting carbon sequestration, economic development, and other policy objectives.

Regulators who undertake policy development in this area need to recognize that their treatment of these issues could dramatically affect the economies and land-use trends of developing countries around the world, as well as the long-term political viability of the carbon offset concept. It is not a regulatory task to be undertaken cavalierly.

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CARBON SEQUESTRATION, BIOLOGICAL DIVERSITY, AND SUSTAINABLE DEVELOPMENT: INTEGRATED FOREST MANAGEMENT [1]

BY

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CARBON SEQUESTRATION, BIOLOGICAL DIVERSITY, AND SUSTAINABLE DEVELOPMENT: INTEGRATED FOREST MANAGEMENT[1]

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ABSTRACT/Tropical deforestation provides a significant contribution to anthropogenic increases in atmospheric CO_2 concentration that may lead to global warming. Forestation and other forest management options to sequester CO_2 in the tropical latitudes may fail unless they address local economic, social, environmental, and political needs of people in the developing world. Forest management is discussed in terms of three objectives: carbon sequestration, sustainable development, and biodiversity conservation. An integrated forest management strategy of land-use planning is proposed to achieve these objectives and is centered around: preservation of primary forest, intensified use of nontimber resources, agroforestry, and selective use of plantation forestry.

Several international conferences and workshops in the past two years have proposed adoption of a global forestry agreement (Maini 1991). Progress is simultaneously being made toward international agreements on greenhouse gas emissions and protection of biological diversity, each of which have forests as mutual components (IPCC 1990). However, focus on a single objective may lead to a narrowing of public policy outcomes (Browder 1992). Thus, those concerned with greenhouse gas emissions propose managing the terrestrial biosphere to sequester carbon, typically focusing on lands suitable for forestation projects (Marland 1988, Winjum and others 1991); this single goal is unlikely to enlist the support of many local populations. Some concerned with loss of biodiversity have proposed establishment of nature reserves, while overlooking the socioeconomic needs of indigenous peoples for goods and services provided by the forests.

Global forestry, climate change, and biodiversity agreements are less likely to be successful if they ignore social, ecological, political, and economic objectives. The international development community directs large amounts of resources to developing nations to finance development projects. For example, the World Bank annually lend $17 billion to developing nations in tropical latitudes (Goodland 1990). Such projects historically included some environmental assessment in their planning, but usually on an ad hoc basis, and not as an integral component (NRC 1982); rarely did such projects specifically consider effects on global climate or biodiversity. The World Bank's recent adoption of a "wildlands" policy (Ledec and Goodland 1988) and publication of a new forestry sector policy paper (The World Bank 1991) indicate that this is changing.

Here we describe an integrated forest management approach that recognizes the interdependence and collateral benefits of addressing the three global issues. Integrating reduction of greenhouse gas emissions, conservation of biodiversity, and sustainable economic development strategies is described. Ecological, social, political, and economic concerns are interconnected and can all be considered in project planning. We seek to show how the elements of integrated forest management may complement each other and contribute to solutions to the three environmental issues.

Integrated forest management focuses on slowing deforestation because (1) primary forests contain more carbon per unit area than any other land-use type; (2) conversion, destruction, and simplification of natural forests (e.g., clear-cutting and replacement with monoculture plantations) are primary causes of large biodiversity losses; and (3) natural areas can provide a sustainable livelihood for people living in or near the forests.

KEY WORDS : Integrated forest management, Carbon, Greenhouse gas; Biodiversity, Sustainable development, Tropical forestry, Socioeconomic

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In the interest of clarity, sustainable development as used in this article was defined by the Brundtland Commission as : "development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (WCED 1987). One prerequisite for sustainable development is sustainable use of the available stock of natural resources. Expressed in a slightly different way, sustainable development means "improving the quality of human life while living within the carrying capacity of supporting ecosystems" (IUCN/UNEP/WWF 1991).

CARBON STORAGE

Forests sequester more than 92% of the world's terrestrial carbon and store between 20 and 100 times more carbon per hectare than agricultural lands (Andrasko 1990, Houghton 1990a). Brown (1988) reports that tropical moist forests average between 155 and 187 t C/ha, and tropical dry forests between 27 and 63 t C/ha, depending on location. Similar carbon biomass figures for Brazilian Amazonia range from 140 to 200 t C/ha (Salati and others 1989). Undisturbed moist tropical forests show net growth, and net carbon sequestration, for 100 years after establishment (Kyrklund 1990).

Although young plantation forests sequester carbon at a higher rate than mature forests, primary forests conserve much more carbon per hectare, preventing its release to the atmosphere. Plantations established on degraded secondary forest or nonforested land can increase the size of the terrestrial carbon pool, while preserving old-growth forest can help conserve the terrestrial carbon pool. Even though organic carbon stored in mature forests is released through fire and oxidation, the gaps thus created provide opportunities for new tree establishment if natural regeneration is allowed to proceed. When plantations reach a mature stage, the net carbon sequestration stops. Therefore, the value of plantation forestry in carbon sequestration rests in its temporary utility while alternatives to fossil fuel use can be developed.

Table 1. Mean carbon storage of various ecosystem types*

Ecosystem	Carbon storage (1 C/ha)
Tropical forest	220
Temperate forest	150
Boreal forest	90
Grassland/savanna	15
Agriculture	5

*Source: Waring and Schlesinger (1985).

Primary forests sequester large amounts of carbon in aboveground biomass, roots, litter, and soils. Most of this carbon is lost when such forests are removed and replaced by plantations or other land uses (Harmon and others 1990). As an example, the conversion of $5x10^6$ ha of western Oregon and Washington old-growth forests to plantations in the last century released between 1.5 and 1.8 Gt of carbon to the atmosphere (Harmon and others 1990). The same authors reported that a 450-year-old *Pseudotsuga -Tsuga* stand stores approximately 350 t/ha of aboveground cabon, compared to 158 1 C/ha in a 60 year-old *Pseudotsuga* plantation. Carbon storage in plantations does not approach that in old-growth for at least 200 years. Western Oregon and Washington forests, representing only 0.017% of the planet's land area, have contributed 2% of the total carbon released in the last 100 years by land-use conversion (Harmon and others 1990, Woodwell and others 1978). Large old trees conserve substantial quantities of carbon as biomass for an indefinite period of time, even if they do not produce large amounts of timber (Norse 1990).

It is useful to examine the relative mean biomass of various ecosystems to put the carbon storage comparison in perspective (Table 1). Tropical forests harbor more carbon than other ecosystems, 44 times as much as agricultural lands (Waring and Schlesinger 1985).

These data illustrate the tremendous impact that tropical forests have on the global carbon cycle. Conversion of forests to less complex ecosystems (e.g., pastures) results in a large carbon flux to the atmosphere. Preservation of primary forests for carbon sequestration/conservation may be more efficient and have fewer negative long-term ecological, social, and political results than plantations established for this purpose (Flavin 1989, Postel and Heise 1988).

Carbon loss associated with deforestation occurs more rapidly than reforestation can sequester carbon. In addition, the current land area under forest cover is greater than that available for reforestation. It may be less effective to focus on plantation forests, as advocated by some scientists and policy makers, except as an offset to cutting more primary forest (Kyrklund 1990, Winjum and others 1991), if the newly planted trees will soon be cut. It may be less expensive to slow deforestation than to reforest large areas for many socioeconomic and ecological reasons (Flavin 1989, Postel and Heise 1988). Therefore, slowing deforestation might have a larger impact on the global carbon cycle than reforestation (Goodland and others 1990; Houghton 1990a,b). Halting net deforestation could reduce annual global carbon emissions by roughly 2.5 Gt (Houghton 1989).

Efforts to slow deforestation have focused initially on key tropical countries: Brazil, Indonesia, Myanmar, Columbia, Cote d'Ivoire, Thailand, Nigeria, Laos, Philippines, Peru, and Ecuador (Houghton 1989). These 11 nations produced 72% (1.185 Gt) of the total deforestation carbon release of 1.659 Gt in 1980 (Houghton and others 1987). Forest management that employs conservation of primary forests concurrently supports the goal of maintaining biological diversity.

BIOLOGICAL DIVERSITY

More than half of all species of plants and animals live in tropical moist forests (Myers 1979, Raven 1967), somewhere between three and ten million species (Raven 1988, Wilson 1988, WRI/IIED 1986). Less than 500,000 of those species have been described or even named.

We may see a reduction of 10% of the Earth's species by the turn of the century, given current extinction rates (Raven 1988). Tropical moist forest species alone are being reduced by 17,500/yr, according to one approximation (Wilson 1988). This compares to a background rate of approximately one species per year, before large-scale human influence (Raup 1978, 1986). A principal reason for this loss of species is the annual destruction of between 76,000 and 92,000 km^2 of primary forest (Myers 1988, Wilson 1988). To put these numbers in perspective, primary tropical forests now cover 9 million km^2 out of a precolonization area of 15 million km^2 (Raven 1988).

Loss of biodiversity accompanying conversion of forests has many social impacts. Utilitarian values of biodiversity include goods and services provided by the biosphere. Tangible goods include food, fiber, natural pesticides, medicines, fuels, and industrial chemicals. Ecological services include water and air purification, natual pollination, soil formation and maintenance, pest protection for crops and livestock, groundwater recharge, watershed protection, buffering of floods and droughts, and sequestration of carbon (Meganck and Saunier 1983). Local societies may suffer when forests are disrupted and the provision of goods and services is interrupted.

Intact forests conserve large amounts of carbon, while providing the ecological goods and services which form the basis for sustainable economic development. One might assume that ecological services can as easily be provided by less diverse ecosystems. However, organisms are highly adapted to specific environments, and substitutions are likely to be inadequate (Ehrlich and Wilson 1991).

Options that allow for both the well-being of individuals and the protection the forests may be more successful in slowing deforestation, loss of biodiversity, and greenhouse gas emissions (Nations 1988). Research is needed to evaluate the practical benefits derived by local people who preserve primary forest ecosystems. Input of local societies is vital to sustainably managing the biosphere (McNeely and others 1990).

Demonstrating the practical economic values of biodiversity has been difficult. Tropical forest ecosystems are converted to provide immediate economic gain: crops, fuelwood, cattle, and timber. Consumption rates may be impacting the sustainability of the natural resource base and rendering resources nonrenewable (Whitmore 1984). It is important, therefore, to determine and characterize the role of primary forests and their biotic capital in development and economic growth. Economic arguments and inducements may be the most effective because people generally define self-interest in economic terms.

Treatment of biotic resources as traditional market commodities, particularly in market economies, has been identified as a major economic cause of loss of biodiversity (Clark 1973, McNeely 1988, Norgaard 1984, Randall 1979). Those who receive the benefits of exploitation of the biosphere often do not pay the full costs of such exploitation. Rather, these external costs are paid by the resource-providing countries. Other important economic issues contributing to loss of biodiversity are: (1) whereas the benefits of exploiting biotic resources are easily quantified, the benefits of preservation are not fully represented in traditional cost/benefit analyses because those benefits are widespread, intangible, and not reflected in market prices (Oldfield 1984); (2) biological resources are usually publicly owned (weak ownership) with open access and often treated as free commodities with a high consumer demand on them; (3) discount rates in development planning are often set too high compared with biological growth rates, so that it is calculated to be economically efficient at times to deplete biotic resources to extinction (Clark 1976); and (4) measures of national income, such as gross national product (GNP), do not recognize the drawing down of natural resource stocks but actually consider biodiversity depletion as net income, so that GNP often rises while natural assets are rapidly declining (Warford 1987).

Despite the difficulties in placing a dollar value on biodiversity, it is informative to discuss the biosphere in monetary terms and some have attempted this (Barrett 1988, Johansson 1987, Westman 1977). Peters and others (1989) concluded that certain managed natural tropical forests are worth considerably more intact than the market benefits realized from large-scale timber harvesting, whether the plot is replanted with trees or dedicated to another agricultural use. Sustained production of a range of marketable products may be directly tied to the maintenance of natural forests and their biotic goods and services, many of which are lost when forest is permanently converted (Meganck and Goebel 1989). Barbier and others (1991) conclude that undervaluing these services can "often reinforce and even exacerbate these (large-scale land clearing) tendencies by employing misguided policies and sanctioning inappropriate resource rights to forests." Although all the benefits of conserving biodiversity cannot be quantified in strictly monetary terms (Ehrenfeld 1988), innovative economic analysis of the goods and services provided by the biosphere can help assign at least a minimum value to biodiversity.

At times, nations encourage, through various economic incentives, destructive logging practices to meet international market demands, clearing and biomass burning for cattle ranching, and settlement programs for agriculture (Cartwright 1985).

Integrated economic development may require that industrialized nations join developing nations as partners. Developed countries reap the benefits of use of the planet's biotic resources much more so than the developing countries, as evidenced by the comparative per capita energy and resource consumption. Foreign debt, poverty, and rapidly growing urban populations aggravate the unsustainable exploitation of the biotic resource base. Developed countries and development banks have recently begun to increase financial assistance to LDCs to address the causes of loss of biodiversity (Cartwright 1985. Muthoo 1990, Raven 1990).

An innovative means of preserving biodiversity is the use of debt-for-nature swaps (Dogse and von Droste 1990). First proposed in the early 1980s (Lovejoy 1984), these complex financial transactions typically involve at least three principles: (1) the debtor country, usually a tropical LDC; (2) the debt holder or creditor bank; and (3) a conservation investor, typically a nongovernmental environmental organization such as World Wildlife Fund, Conservation International (CI), or The Nature Conservancy.

The basic mechanism of such exchanges is that the debt holder negotiates with the debtor country through a conservation investor, in a secondary debt market, to forgive the debt in exchange for the debtor government's pledge to invest in various conservation or development projects in the debtor country. Although there are potential disadvantages (Dogse and von Droste 1990), the debtor nation has some of its debt burden forgiven, the debt holder clears its books of some of its probable losses, and various conservation projects and local environmental organizations are funded. This practice was initiated in 1987 with a swap involving Bolivia, CI, and Citicorp Investment Bank. The agreement provided full legal protection for the Beni Biosphere Reserve (CI 1989). During the next three years, 19 exchange programs involving 11 countries and more than US $300 million face value of debt were established (Dogse and Von Droste 1990). Most important for biodiversity, more than US $ 58 million in conservation funds were generated.

SUSTAINABLE DEVELOPMENT

In 1989, more than 1.2 billion people, largely in the rural tropics, lived in absolute poverty, defined as the lack of adequate resources to meet essential biological needs for food, clothing, and shelter (Brown 1990). Such people, in a quest for subsistence needs, often turn to the resources of tropical forests. The result is often forest degradation, deforestation, depletion of biodiversity, and release of CO_2 to the atmosphere (OTA 1984). As the forests' biotic resources are depleted, poverty is further accelerated and the cycle continues.

Because poverty in the tropics is both a cause and a result of habitat conversion, in order to slow deforestation, development should proceed in ways that discourage the locally irreversible deforestation now occurring in some tropical countries (Uhl 1983). In the past, most funding by the development banks was for large infrastructure projects, such as hydroelectric dams, power plants, and coal mines, sometimes having large negative social, economic, and environmental impacts. Recently, however, bilateral and multilateral development agencies have begun merging ecological considerations into socioeconomic development policy decisions (Ledec and Goodland 1988, USAID 1987) rather than relying solely on neoclassical economic formulae to justify such projects.
Sustainable use of biotic resources, including forested lands, may allow development to achieve long-term provision of essential human needs. To ensure that the requirements of the most needy are met, the local populace should be an integral partner in the planning and implementation of development projects. This requires understanding of the social, cultural, and political nature of those most directly affected. Such understanding may be gleaned from the mutual interests of economic development experts, social scientists, and tropical ecologists (Goodland 1990, WCED 1987).

Quality of life, as measured by per capita income, is lower in the developing world than it was 30 years ago, even though GNP has increased at an average rate of 3% per year (Brown 1990, Goodland and Webb 1990, Summers and Heston 1988). This is due to both population growth and the practice of living off the basic economic capital of the renewable biotic resources, rather than the interest from that capital (MacNeill 1989). Strategies that protect biodiversity and enable tropical people to sustainably meet essential needs are also likely be successful in conserving carbon to help stem global warming.

INTEGRATED FOREST MANAGEMENT

Loss of biodiversity and accumulation of greenhouse gases through deforestation often result from efforts to satisfy local survival needs. However, local people will probably not be interested in adopting practical strategies to reduce greenhouse gas buildup or loss of biodiversity unless their immediate needs for improved quality of life are addressed (Nations 1988). Ecologically and economically sustainable forest management practices can provide goods and services for local people in the present while preserving options for future generations. The type of forest management described here consists of measures that will displace demand on primary forests to slow deforestation, protect biodiversity, and partially offset global warming.

A proposed four-point program of integrated forest management is described: (1) land-use planning emphasizing primary forest preservation and management, (2) intensified use of nontimber resources, (3) agroforestry applications, and (4) plantation forestry in appropriate situations.

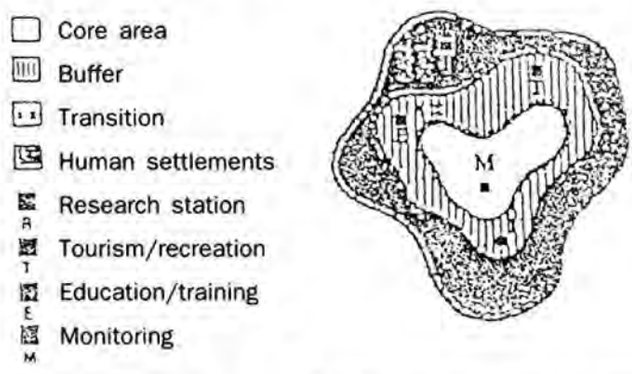

Figure 1. An idealized biosphere reserve model. (SOURCE : DIXON AND OTHERS 1991.)

LAND-USE PLANNING

Land-use planning, tailored to local conditions and emphasizing primary forest preservation and management within an economic development context is gaining favor in many conservation and financial communities (Ledec and Goodland 1988, MacKinnon and others 1986, McNeeley and others 1990). An example is the biosphere reserve concept (Batisse 1982, 1990, Miller 1978), in which conservation and protection of natural ecosystems share the focus with sustainable development. Several land-use categories are used, representing wide ranges of development, intensity of use, management objectives, and sustainability (Meganck and Saunier 1983). For example, development may range from permanent alteration for intensive agriculture to strict nature preservation. Management objectives may include: maintaining ecosystems in a natural state to protect water supplies, providing timber on a sustained yield basis, and providing tourism opportunities. Ecological sustainability in the various categories increases from agriculture to plantation forestry to intact forests.

Clearly, prioritizing management objectives will involve weighing the most pressing needs at local, regional, national, and global scales. We suggest that provision of essential local economic activities, preservation of biological diversity, and conservation of terrestrial carbon will all be optimized when forest ecosystems are maintained in a near-primary state. Economic development priority decisions can be made in this context.

In the biosphere reserve model (Figure 1), wilderness areas, as well as primary forests not currently protected as legal reserves, are identified, established as core areas, and afforded protection. One or more land uses can be employed in areas surrounding the preserve to buffer the core areas and to provide for sustainable utilization of resources. Selective logging may be appropriate in some places, as may seasonal grazing, hunting, tourism, or agroforestry. Outside the core area in the surrounding buffer zone, more intensive agricultural practices can be conducted in transition areas. The planned use areas provide a buffer from pressures on the core nature reserve. In addition, natural regeneration and active restoration management of the forests may in time permit expansion of the protected core. Protected management areas can preserve further options while sustaining the present generation through a planned mix of various categories of reserves, amidst productive farms and forests.

If economic development is defined as the use, enhancement, and protection of biotic goods and services and as actions that improve quality of life by lowering risk from natural hazards, then preservation and conservation can be considered significant development activities (Meganck and Saunier 1983). For example, preserving an upland watershed to provide erosion control and downstream fisheries is as much a development activity as are industrial forestry and dam building projects.

NONTIMBER RESOURCES

A second point of the integrated forest management plan is the intensified use of nontimber biotic resources, including both forested and nonforested lands. In 1980, only 750 million of the 1.8 billion ha of potentially arable land in the developing world was cultivated. The FAO (1980) estimates that 85% of the projected food production to the turn of the century could come from a combination of expanding land under cultivation and increasing yields. To help address needs for food, such conversion of suitable nonforested lands and intersification of agriculture would help to relieve pressure on primary forests (Spears and Ayensu 1985).

Consideration of agriculture is essential because forest-sector land-use conversions are frequently determined by processes in the agricultural sector (Grainger 1990). Crop yield improvements are needed on lands best suited for sustainable agriculture to displace intrusion into primary forests.

Additionally, tropical forests should be recognized as having substantial economic market value beyond their timber resources. This will require development and general acceptance of a valuation systems for biotic resources traditionally considered to be outside the market economy. The market value of edible fruits, latex rubber, and other products from a small plot of rain forest was far greater than that of the timber (Peters and others 1989). The markets for these nontimber products should be expanded to provide livelihoods and prevent deforestation.

Another nontimber use of tropical forests is exemplified by extractive reserves in Brazil (Fearnside 1989). Maintaining sizable areas of Amazonia for extraction of products like Brazil nuts and natural rubber has become locally effective in protecting forests for biodiversity and carbon conservation because it provides sustainable economic activity for indigenous people.

Meat from wildlife species is food and a source of income for much of the developing world (Ntiamoa-Baidu 1987). Human population pressure and habitat destruction are seriously depleting wildlife resources. Needs are great for applied research on conservation of habitat, management for utilization, pest control, and tourism. Saving these valuable food resources will require saving the forests they inhabit.

Another use of tropical forest animals is in domestication projects. Both butterflies and crocodiles are farmed in Papua New Guinea: iguanas and pacas are raised for their meat in Panama (Vietmeyer 1988). These are a few of the many species that could provide incomes for indigenous people by exploiting the nontimber values of the forests.

AGROFORESTRY

Traditional, sustainable, swidden/fallow agriculture has been practiced in Amazonia for several thousand years (Dufour 1990. Winterbottom and Hazlewood 1987). Today this region contains less than 500,000 indigenous people, but 6.8 million Amerindians once lived there by cultivating small, polycultural, multistory plots, including trees (Denevan 1976). Even more recent residents of Amazonia, the caboclos, or rural peasants who practice a market economy, employ swidden/fallow farming in what is thought to be a sustainable and ecologically beneficial way (Fearnside 1989).

Nations and Nigh (1980) documented the vanishing Lacandon Maya culture of Chiapas, Mexico, who still practice a form of sustainable tropical forest agriculture (agroforestry). Such indigenous people produce food on deforested plots, then regenerate the area with forest species in order to produce more food in the future.

The most recent colonists, arriving with little knowledge of the rain forest, sometimes treat the forest ecosystem as an adversary rather than a valuable resource (Drennon 1990). Such destructive practices are characteristic of cultures colonizing uninhabited territory and those in a stage of rapid cultural transition (Soule 1991).

Agroforestry relies on the complex interactions between trees and other elements of the system, provides habitat for biological diversity, and produces goods and services (Winterbottom and Hazlewood 1987). Although the number of agroforestry system types is nearly as large as the number of localities where they are practiced, most types employ one of three combinations. Agrosilviculture combines trees and annual crops, silvopastoralism combine trees and grazing animals on wooded pasture or rangeland, and agrosilvopastoralism combines trees, crops, and livestock (Mergen 1986). The major benefits of agroforestry frequently include low technological input, sustainable use of secondary forests, maximization of productivity and income, and control of deforestation (Winterbottom and Hazlewood 1987). In a typical system, trees may provide shade and increased soil nutrients for crops such as coffee, fuelwood for home use, aerial fodder for livestock, and shelterbelts that increase soil moisture while moderating air temperatures. Although no single agroforestry application will provide all possible benefits, successful systems are documented throughout the temperate and tropical biomes, and the potential for application of agroforestry systems is significantly untapped (Nair 1985).

PLANTATION FORESTRY

Plantation forestry may be appropriate where there is an urgent need for watershed rehabilitation, an acute fuelwood shortage, or where it can substitute for unsustainable industrial wood harvest (Goodland and others 1990). Tree plantations located in close proximity to primary forests may be valuable in displacing destructive pressures on such forests.

Environmental degradation and human misery resulting from unsustainable forest harvesting is exemplified by the global fuelwood shortage. It is projected that by the year 2000, 2.4 billion people, half the developing world population, will either not be able to meet their minimum fuelwood needs or will meet their needs only by depleting their wood resources (FAO) 1983). People often spend most of their time gathering firewood rather than in more productive pursuits and settle for easily prepared, less nutritious food. In many cases, animal manure and plant residues are burned for fuel rather than incorporated into soils, lowering future crop yields. In many urban tropical areas, people spend a substantial portion of their income for fuelwood, contributing to poverty. Plantation forestry is appropriate to help solve the fuelwood crisis.

Another appropriate use of tropical plantations is in carbon sink forests, established to offset present or future emissions of CO_2. In 1988, the first such project was jointly initiated by Applied Energy Systems (AES) and the World Resources Institute; CARE, USAID, the Peace Corps, and the government of Guatemala eventually became partners in funding the venture at US$ 16.3 million (Trexler and others 1989). The potential success of this project lies in its promotion of multiple objectives: 52 million trees to be planted on 72,000 ha in Guatemala are expected to sequester 18 million tons of CO_2 to offset the 15.5 million tons to be released in the next 40 years by a Connecticut power plant; 40,000 rural families will potentially gain employment in the propagation, planting, and maintenance of seedlings; plantations may provide further economic development opportunities by establishing fuelwood lots, agroforestry applications, and soil stabilization services; and plantations can displace demand on primary forests, which can then continue to sustainably provide needed goods and ecological services. The last objective is projected to account for approximately 80% of the total long-term carbon sequestration potential (Trexler and others 1989), while enhancing the preservation of biodiversity and aiding sustainable development. Future carbon sink forest endeavors will benefit from the recognition that socioeconomic factors and institution building are perhaps more important than scientific calculations in predicting the long-term success of such projects.

CONCLUSIONS

No-regrets policies, actions that "make sense" for various social, economic, or ecological reasons and that reduce greenhouse gas buildup as an ancillary benefit may be accepted by people of developed and developing nations. Integrated forest management to maintain the natural resource base essential for economic development may help to meet the needs of the expanding human population in the tropics. In the process, carbon, biodiversity, and other resources can be conserved to meet societal goals.

Research is needed to determine the amount of land that is ecologically and socioeconomically available to apply integrated forest management. We subsequently envision adaptive management, a series of incremental changes in the mixture of conservation practices, nontimber uses, agroforestry practices and plantation forestry to arrive eventually at the optimal mixture within an integrated forest management framework.

In a sense, we do not understand enough about the biosphere to manage it in detail; it best manages itself (Woodwell 1985). Conversely, we do manage natural resources on a local scale; we either destroy or modify them or we preserve them for sustainable use. The paramount need is to manage biotic systems with practices that allow for ecological and economic sustainability.

An integrated forest management strategy would include land-use planning centered on preservation of primary forests, intensified use of nontimber resources, agroforestry applications, and selective plantation forestry.

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