



International Conference on
Environmental Education in
the Asia-Pacific Region

27-28 Feb, 1999
Yokohama

Organized by

**Institute for Global Environmental Strategies
and
Environment Agency, Government of Japan**

**International Conference on
Environmental Education in the
Asia-Pacific Region**



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Program

International Conference on Environmental Education in the Asia-Pacific Region

Day 1 : Saturday, February 27, 1999

- 9:30-18:00 Workshop
- 9:30-10:00 Opening Remarks by **Mr. Tetsuo Ito**, Environment Agency and **Prof. Akio Morishima**, IGES / Sophia University
- 10:00-10:30 Keynote Speech: "The Aim and Direction of the Environmental Education in the World" by **Prof. Osamu Abe**, IGES PL / Saitama University
- 10:30-10:40 Discussion
- 10:40-11:00 Coffee break
- 11:00-11:20 Presentation: "Environment Agency's policy for the promotion of Environmental Education" by **Mr. Tetsuo Ito**
- 11:20-11:45 Presentation: "An overview of Environmental Education in the Asia Pacific region" by **Dr. Bishnu Bhandari**
- 11:45-11:50 General Information
- 11:50-13:00 Lunch
- 13:00-15:30 Presentation: "Practice and Status of Environmental Education in each country"
- Dr. John Fien**, Griffith University, Australia
Mr. Hyung-Shin Kang, Ministry of Environment, Korea
Ms. Bing Hao, Beijing Normal University, China
Mr. Murugadas Loganathan, WI-Asia Pacific Malaysia Programme
Mr. Yoshisada Kuga, Ecopolice Center of Itabashi City, Japan
Prof. Keiko UEDA, Towa University, Japan
- 15:30-15:50 Coffee break
- 15:50-17:00 Comment for the presentation
- Prof. Satoshi Ichikawa**, Naruto University of Education
Prof. Seiji Utsumi, Osaka University
Mr. Shigeyuki Okajima, IGES
Mr. Hissho Kitamura, The Yasuda Fire & Marine Insurance Co., Ltd.
Ms. Charmine Koda, Journalist
Mr. Takeshi Yamamoto, Kanagawa Prefecture administrative office
- 17:00-17:55 Free Discussion
- 17:55-18:00 Summary of the first day by **Prof. Osamu Abe**, Chairman
- 18:30- Reception

Day 2 : Sunday, February 28, 1999

- 9:00-12:00 Workshop
- 9:00-10:00 Presentation based on the discussion paper
“Establishment of the global partnership”
Dr. John Fien
Mr. Hyung-Shin Kang
Ms. Bing Hao
Mr. Murugadas Loganathan
Dr. Bishnu Bhandari
- 10:00-10:40 Discussion
- 10:40-11:00 Coffee break
- 11:00-11:40 Discussion
- 11:40-11:50 Summary by **Prof. Osamu Abe**, Chairman
- 11:50-12:00 Symposium Information
- 12:00-13:15 Lunch
- 13:30-17:05 Symposium /Panel Discussion**
- 13:30-13:45 Opening Remarks by **Mr. Kazuo Matsushita** and **Mr. Tetsuo Ito**
- 13:45-14:10 Keynote Speech by **Prof. Osamu Abe**
“Global Partnership on Environmental Education”
- 14:10-15:30 Panel Discussion (first part)
Introduction of the panelists by **Mr. Matsushita**, Chairperson
Dr. John Fien
Mr. Hyung-Shin Kang
Ms. Bing Hao
Mr. Murugadas Laganathan
Dr. Bishnu Bhandari
Prof. Osamu Abe
- 15:30-15:45 Coffee break
- 15:45-17:00 Panel Discussion (second part)
Summary of the Panel Discussion by the Chairperson
- 17:05 Closing Remarks by **Mr. Shigeyuki Okajima**, IGES

Foreword

Osamu ABE

Project Leader, IGES Environmental Education Project

The Environment Agency of the Government of Japan began a program of supporting environmental education for children in 1995. The idea was applauded by a meeting of ECO Asia in 1996 and a proposal to hold a conference for children of Asia was accepted. Subsequently, the Environment Agency organized the first Conference of Junior Eco-Club Asia in 1996, followed by the second one in 1998. The International Conference on Environmental Education in the Asia-Pacific Region was the third in a series of workshops and symposiums to promote environmental education in the Asia-Pacific Region. This Conference was organized by the Institute for Global Environmental Strategies (IGES) in partnership with the Environment Agency.

The primary objectives of the Conference were to explore ways to involve children in conservation education and promote environmental education through global partnership. Experts from China, Korea, Japan, Malaysia and Australia were invited to this three-day Conference. The special features of this Conference included paper presentation, panel discussion on global partnership, a symposium for experts and local citizen and a post-conference excursion into Irifune Primary School in Yokohama and the Ecopolis Center of Itabashi City in Tokyo.

The Conference was successful in providing a forum for international and Japanese experts to share their experiences and expertise on environmental education and for local citizen to clarify their queries and curiosities on important issues raised in the deliberation. The panel discussion was effective in identifying innovative approaches to establishing global partnership to promote environmental education in the Asia-Pacific Region. The organizers are confident that the intensive discussion on the issues, panel discussion on global partnership, direct interaction with local people, and the excursion to the selected places will help participants cross-fertilize their ideas in order to develop innovative ways to make environmental education more effective and realistic to the region in general and their respective country in particular.

Opening Remarks

Prof. Akio MORISHIMA

Chair of the Board of Directors Institute for Global Environmental Strategies (IGES)

I would like to welcome you to the International Conference on Environmental Education in Asia and the Pacific Region, which is being held today in Yokohama. I am particularly grateful to the participants who have come from all the way from their home country and I do hope all of you will enjoy the two-day conference.

The Institute for Global Environmental Strategies or IGES was established on April 1, 1998, but the idea of IGES emerged four years ago, proposed by the Special Council to the Prime Minister. The proposal to establish an environmental policy oriented institute for Asia-Pacific Region was submitted to then Prime Minister Murayama and under his initiative the program to establish IGES started. Two years ago the preparatory organization was established and we were able to form the present organization last year. I do hope you will have a chance to visit Hayama, about an hour from here where our main office is located. In Hayama's International Village, we have twenty-nine researchers and twenty-one supporting staff. Among them, nine are foreign researchers and very soon we will have some other researchers from abroad. Probably in two or three years, we hope to increase the number of researchers to around fifty.

Right now we have five operating projects. One of them is the Climate Change Project. Last year we sent delegates to Buenos Aires and there we proposed some ideas on CDM and the emission trading and other Kyoto mechanisms. They are now working hard to develop those mechanisms and at the same time IGES expects them to work on long-term strategies to reduce global warming gas emissions. The second one is Urban Environmental Management. They are conducting field research in Chinese and Korean cities. They are looking for measures for environmental management in Asian cities particularly focusing on China. The third project is the Forest Conservation Project. They are also conducting field research and organizing workshops and international meetings in South East Asian countries. They have already conducted research in Indonesia and Malaysia as well as other South East Asian countries. They will be expected to propose some policy ideas at the IFF Meeting to be held in November. The fourth one is the Environmental Education Project, which is the topic of the conference we are having right now. The fifth project is Environmental Governance. They are conducting research on environmental policies in China and other countries, including Japan, Thailand and India, and on how to institutionally manage the environmental policies. Comparative studies of governmental and

administrative structures, participation of business and the public in the environmental policies are some focal issues. Voluntary measures taken by the business circle is also a part of the study being undertaken. The area is very promising and I do hope that they will come up with some concrete products and some proposals for the Asian business community. Apart from the five projects mentioned earlier, we also have the New Development Patterns Project, which is still in the planning stages. Next year, we hope to see preparation of the training projects. The new training project is very closely related to the environmental education scheme. Taking this fact into consideration, I believe the Environmental Education project is of great importance.

I do not think there is a need to stress the importance of studies on environmental education. The Japanese government paid serious attention to developing schemes for environmental education in Japan and Asia. The Japanese government drafted a Basic Environmental Plan under the Basic Environmental Law. You will find mention which points out the importance of environmental education in environmental policy. And under the US-Japan common agenda, the Japanese government has started a project on environmental education in Indonesia. The chairperson of this conference, Professor Abe, is playing a key role in the project. I hope the IGES will be a part of the common agenda project.

I look forward to your frequent contact with IGES henceforth and welcome you to join IGES and contribute to the development of the Environmental Education Project. Thank you very much.

Mr. Tetsuo ITO

**General Manager, Office of Environmental Activities Planning and
Coordination Bureau, Environment Agency
Government of Japan**

We thank you all very much for coming all the way to Japan from various regions of the Asia and Pacific region and sharing time from your busy schedules.

Toward the 21st century, rapid growth of population and economic activities has been taking place in the Asia and Pacific region and these developments are expected to have a significant impact on global and environmental issues here. Citizens of all ages, businesses in the private sector and governments, are all expected to participate in conservation activities.

Environmental education is an essential basis for society and should be implemented in a positive manner. In 1995, we started Junior Eco Club activities for environmental conservation and awareness activities for children. As of this month there are about 70,000 children working in 4,000 clubs. We would like to introduce these activities throughout the Asia and Pacific region and promote exchange among children regarding environmental activities through the Asian conference of the Junior Eco Club. In addition, under the US-Japan common agenda to address issues in the 21st century, we started the environmental education in May 1997.

Exchange of information and findings for the promotion of environmental education in this region have begun. This is an attempt to expand governmental level conferences to include the Asia and Pacific region as part of the environmental education project of the US-Japan common agenda.

This workshop will certainly help us to discuss further the issues on how to promote environmental education and global partnership. I sincerely hope that this conference will further promote the environmental education in the Asia Pacific region. Thank you very much.

Keynote Speech

The Aim and Direction of the Environmental Education in the World

Prof. OSAMU ABE

IGES / Saitama University

Introduction

Today we have many participants from all over the Asia Pacific for this international conference. We appreciate your presence. Furthermore we have many from Japan who are related to the area of environmental education. I hope this gathering would lead to the further development of environmental education. Later on I hope to encourage exchanges of opinions among the participants.

Sustainable Development and Environmental Education

First let me give an overview and explain about the concept of sustainable development.

Sustainable development, should be a familiar term to most of us. This term was first introduced in a report “Our Common Future” published in 1987 by the Committee on Sustainable Development, in which it was defined as follows: “Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs.” “In essence, sustainable development is a process of change in which the exploitation of resources, the direction of investments, the orientation of technological development, and institutional change are all in harmony and enhance both current and future potential to meet human needs and aspirations.”

The term sustainable development or sustainability emerged because there were various global issues to be tackled and the people felt strongly the need to deal with the issues. One of these global issues was of course on global environmental problems. The UN Conference on the Human Environment was held at Stockholm in 1972. At the conference, major concerns regarding the deterioration of the environment was discussed. Subsequently, issues on environmental education came up. In a conference held in Thessalonik, Greece in 1997, environmental education was explained as an education for sustainability. At this point the international community recognized the relationship of sustainable development and environmental education.

Sustainable development cannot be achieved by the effort of a single country. Global environmental problems did not emerge from the framework of a single country. The issue is a common challenge that all nations are faced today. All countries and all regions must deal with it as well as to collaborate and cooperate with one another. Similarly environmental education cannot be achieved with one economy's endeavor. By positioning environmental education as education for sustainability, we must establish international cooperative relations in the area of environmental education.

At the conference in Thessalonik, a preliminary report, "Educating for a Sustainable Future" was submitted. It was described as follows: "To an individual living in rural poverty in the developing world, sustainable development, if it is to make any sense, must mean increased consumption and a higher living standard. By contrast, to an individual in a wealthy country, with a closet full of clothes, a pantry full of food and a garage full of cars, sustainable development could mean more modest and carefully considered consumption."

Sustainable development differs in meaning according to countries and regions. The term could have many interpretations. However, the main concept is for industrialized countries to assist in the development of the developing countries or to recognize the rights for the developing countries to develop further. As for developed countries, the meaning will give them a chance to contemplate on past developments. The issue on how environmental education will support sustainable development is a challenge that we all face and must consider as we move into the future.

Japan is one country that is capable of taking responsibility in the achievement of the worldwide goal of sustainable development. Japan is one of the few developed countries of the world. On the other hand, the Asia-Pacific region also has some of the poorest countries in the world. China is the most populous country in the world. The region also has countries consisting of small islands. Asia-Pacific is a region with diverse nations. Japan will need the cooperation of the Asia and Pacific countries in its effort to enhance environmental education. When I say this, I do not mean that Japan will take the leadership and other countries will be subordinated to Japan, but Japan will act as member among Asia and Pacific countries and support the development of the countries in the region. In the process, Japan will establish a system of environmental education with other countries as well learn and work with them in various tasks.

More than fifty years ago, Japan advanced with force into the Asia-Pacific region. And for most of the countries of today's participants, I believe we have advanced into your ground. I personally think that was a big mistake and a wrong thing to do.

A man named Tenshin Okakura well known in Japanese Art history said something like this before the break of World War II: “Westerners saw Japan as barbarians when, us, Japanese were in peace and enjoying literary art. However, they started calling us civilized when we started massive killings in battlegrounds in Manchuria. If the only way for Japan to be viewed as a civilized nation is to depend upon bloody war honor, let us stay being barbarians until the day others recognize our art and ideals and respect them. Let us wait.”

Seeking for permanent peace in the international community is where the post-war Japan heading. In this era the concept of sustainable development and environmental education is born, I believe Japan must adjust itself to match the needs of this concept and promote closer international cooperation. Japan needs to learn from its past and regret. It needs to look at the present situation of the world. Japan should show its vision towards the ideal future and I hope Japan will gain the respect from the world and especially from the people of Asia-Pacific countries to achieve its goal. Today we are gathered together to exchange knowledge and ideas on the issue of environmental education and sustainable development.

Background of the International Conference

Next time, I would like to touch briefly on the background of today's international conference.

The Environment Agency started a program called the Junior Eco Club, in the fiscal year 1995, which was aimed at supporting the environmental education of children in preparation for the 21st century. The club's activities are focused not only on local environment but also on the global environment issues as well. The program is children-centered, having these children do their activities in their localities. This will enable the areas to change from the conventional system to a locality with an environmental protection framework. We hope to eventually impart this system to children of our Asian neighbors. Therefore I feel that there is a strong need for vigorous exchange between countries in the Asia-Pacific region. The Environment Agency has hosted two conferences for the Junior Eco Club. This will be the first time that the conference will be held to expand the countries in the Asia Pacific region. I hope we could discuss the development of the Club in today's conference.

The US-Japan Common Agenda for Cooperation in a Global Perspective deals with various issues that we are facing as we move toward the 21st century. We expect to work hand in hand with the US on various current issues and problems. Under the framework are four issues. First, is promoting health and human development. Second, is responding to challenges in the global stability. Third, is on protecting the global environment. Fourth and

last is advancing science and technology. Under the protection of the global environment scope, initiated during talks made in 1997 between former Japanese Prime Minister Ryutaro Hashimoto and US Vice President Al Gore, the issue of environmental education was first taken up. In the US-Japan common agenda for cooperation, there is a joint effort between the Environment Agency, the Ministry of Foreign Affairs and the Ministry of Education. With this, Environmental education is taken into one area of international assistance. I look forward to the development of environmental education under the US-Japan common agenda.

I would also like to make a few points on the foundation of the IGES and it's strategic research. Focus is on environmental education as a basis to achieve sustainable development. Strategic research aimed to find out what environmental education is possible, feasible and effective ways to conduct it. I hope that today's conference will guide us in conducting research activities in the future.

Objectives of the Conference

The conference has two primary objectives. One is on how to find ways to include children in its environmental conservation activities.

Experts from the Asia and Pacific region are expected to make presentations of studies in each country as well as the introduction of Japanese environmental education to our Asian neighbors. The need for an international conference on environmental education was felt due to the variety of methodologies or ways to involve children for environmental conservation efforts. One of the reasons for this maybe the diversity of conditions in the Asia and Pacific region and therefore requires more flexible and practical approach. I believe that consensus on various issues can be reached with active and positive exchange of ideas.

In the past at these conferences, we introduced to our overseas friend the Junior Eco Club program and many reports were made on children's activities in different countries. Sharing information like this will be extremely helpful for us all. By having discussions like this, we can think about what is necessary right now for us to do and what issues are there for us to address together. We can discuss to find solutions and make plans for implementation. I think this is what we should call strategic research. For the first part of this conference we should be able to touch upon issues of conservation and citizen involvement in the process of environmental education.

Another objective of the conference is to discuss how global partnership ought to be to promote environmental education. I used the words "global partnership" but perhaps in this context we will primarily focus upon regional

cooperation in the Asia and Pacific countries. Cooperation in the area of environmental cooperation among countries and regions have been planned and implemented in various ways. I presume that some of us have already had experience in organizing and implementing similar activities. In building a sustainable society towards the 21st century, we should discuss again together how we can promote international cooperation, international linkage and joined implementation for environmental education.

That is, from the global perspectives, how environmental education can change from what we have learned. Of course, that does not necessarily mean that we should set a global particular standard for environmental education. Environmental education can take a variety of forms and such diversity should be respected and we should link up together with that background. That is why the word “partnership” carries a certain weight. By being linked up through coordination, environmental education should develop through the practice stage to become a certain philosophy of education, which provides a new framework of education.

When using the word “strategy” for environmental education, what does it mean specifically? Such a discussion will certainly take a long time. But if “strategy” means setting certain objectives, then I think the means and building up for means of involving people and building up mechanism for international cooperation for environmental education will be certainly the primary tasks for us today and tomorrow. These discussions will give us a certain spirit and activate our activities of environmental education toward the 21st century. I expect that we will have fruitful discussions.

Thank you very much.

Presentation

Environment Agency's policy for the promotion of Environmental Education

Tetsuo ITO

**Office of Environmental Activities Planning and Coordination Bureau,
Environment Agency, Japan**

One of the functions of the Office of Environment Agency is to promote voluntary conservation activities around the country. Environmental education is an important tool in implementing these activities. I am presently the Director of this Office, having joined the Environment Agency in 1979. At that time we experienced a lot of misconceptions and disagreements. The term Environmental Education itself was not particularly favored and I myself did not agree with the terminology. In solving environmental problems, the emphasis was to impose restrictions. We believed then that there was a need to control the activities of businesses that produce pollutants which have harmful effects on the environment. What are environmental problems? The structure or essence of environmental issues and problems has changed since I joined the Environment Agency twenty years ago.

The 1960's recorded rapid economic growth for the country, consequently bringing with it diseases and other pollution related problems. In some of these cases, it was easy to distinguish the polluters from the victims. There was a lot of controversy over the cause of the "Minamata" disease that broke out in the country during this period. We were able to find problems with water pollution and pollutants from gas expelled from factories and other businesses, which caused serious problems to the local communities. These are some highlights of the environmental problems we had during those days. Industrial pollution still remains although at a very controlled level.

During my early years with the Agency, industrial pollution reached a very minimal level. At this point, a lot of us thought that there was no need for the Environment Agency since the problem had already been contained. There were proposals for reorganization of the agency and upgrading it to a Ministry. A lot of my colleagues, including myself, were surprised with the changes. Views on the effects and causes of environmental problems have also changed with time. Environmental problems have become more complex in our modern society. Global warming is a recent term used to refer to the release of gases created by numerous human activities. The conditions will differ for each region or country. However, everybody on this planet may be a victim. There is also the problem of waste, accumulated at homes and businesses, which cause air pollution and other health problems. With the onset of industrialization, a new generation of health problems and disease is expected. Every citizen can contribute to the enhancement of his own

environment. It is also common knowledge that man can destroy the environment far more easily than he can contribute to improving it. Therefore it should be the moral obligation of each individual to exert every effort to reduce damage to his environment by knowing more about the environment and finding ways to enhance it.

The Basic Environment Law was enacted based upon the need for new environmental policies and policy direction. The drafting of the law involved various agencies and bodies including the Ministry of International Trade, Industry and Environmental Construction among others. Experts were also called upon on various councils for positive inputs. In 1993, the bill was enacted at the Japanese Parliament. In 1967, the basic law concerning measures against pollution was enacted. This was primarily dependent on regulations and restrictions. To replace this, the Basic Environment Law was enacted in 1993. I would like to introduce some major characteristics of this law. In the promotion of the environmental administration, conventional restrictions and regulations as well as the improvement of social infrastructures and economic measures are imposed. Provision of tax incentives for positive action or environmental impact assessments and various tools are necessary. The government stipulates steps or measures to promote environmental education in Article 25 of the law. There were certain arguments when we started to draft this article. One important objective of environmental education and learning is to make people take an active role in environmental conservation. Another article states that the local government shall take necessary measures in accordance with the provisions stipulated in Article 25.

In 1994, the Basic Environment Plan was formulated. This gave the government the general direction for environmental policies and, based on the Basic Environment Law, environmental education and environmental learning is positioned as one of the fundamentals. In this plan, environmental education and learning shall be promoted. There are specific clauses in this plan. The basic law specifies the willingness to promote environmental activities. Two relevant points are included in the plan. First is that all activities should include all age groups, including children and the elderly. What kind of opportunities should be created for environmental education and learning? Activities in Schools, homes, the local community, the work place, as well as other outdoor or field activities will be utilized and coordination established.

Since all of you are experts in the field of environmental education, I presume that these issues are nothing new to you. For me, this is something new and challenging. The importance of environmental education for children is obvious and children should not be made to suffer the consequences of problems created from adults' activities. This was one of the arguments raised during the discussions on the formulation of the said plan. Based on the plan, the government has implemented various measures for environmental

education. The Ministry of Education in Japan is responsible for the educational system and is therefore responsible for implementing various initiatives to promote environmental education. The Environment Agency, for its part, supports the initiatives by the Ministry of Education.

The Junior Eco Club program has been the most effective program so far. These clubs are registered at their respective local government offices and are mostly geared towards the involvement of Elementary and High School students. Club activities are supported at local as well as government levels. Information and activities in various clubs are monitored through newsletters. The Environment Agency also assists in gathering together various clubs and suggests activities or initiatives for children to take up. The school year in Japan starts from April to March of the following year. At the end of each school year, a nationwide festival is organized for students to participate in various group exchanges. During this occasion, children were found to be very active and showed a lot of enthusiasm in participating in the various activities prepared for them. There are about 4,000 clubs of 70,000 children in Japan. Each club is required to renew its registration at the start of each school year. Club membership is growing each year. We are also doing research on the development of human resources. We are also trying to screen and evaluate people to prepare, qualify and register them as Environmental Councilors. We also keep a directory of qualified Environmental Counselors, which are made available for the public. This enables us to furnish the public with a directory of qualified environmental services on a voluntary basis. For our part, we support and suggest improvements to and expansion of the program. At this point, I would also like to mention that Japan still has a lot to do in the field of environmental education and learning. There is a need to review and evaluate the necessary programs.

In July 1998, we asked the Central Environmental Council to come up with ideas and recommendations to further promote environmental education and learning. Under this there is a sub-committee on environmental education. Meetings are held almost every month regarding environmental issues, implementation and other related topics. In July 1998, we asked them to hold a meeting and discuss some important issues and in September of that same year, they made an interim report with various suggestions. The willingness for environmental conservation must be nurtured and the environment must be studied and learned. However, experience and a hands-on approach are necessary. These are some of the suggestions made during the meeting. Seven recommendations were made for policy makers. One of these is a systematic approach to making programs and developing human resources. Furthermore, Information exchange systems must be established and networking for environmental education and learning must be set up and provided. The coordination of all related sectors must be promoted as well as international

cooperation and collaboration. In the supplementary budget for fiscal year 1998, about \ 750 Million was added to promote environmental education and learning. Model cases for environmental education and learning will be chosen and the necessary materials and equipment will be provided. This much has been done so far and I must stress the need for further improvement, especially in the area of international coordination and collaboration.

The discussions made at the Central Environmental Council as well as the issues that we are going to take up in today's conference are extremely important and beneficial to us in our efforts to further develop and improve our policy to promote environmental education and learning.

Establishment of the Global Partnership

Bishnu B. Bhandari

Institute for Global Environmental Strategies, Japan

Mr. Chairperson, Vice-President Matsushita-san, ladies and gentlemen,

Thank you so much for giving me this opportunity to speak a few words about global partnership in environmental education. The importance of global partnership has been well summarized by the Chairperson of this Session saying that environmental education is an education for sustainable society. And he said that promoting environmental education requires a good networking, that is where we need to promote partnership. Partnership is needed to build synergy between different stakeholders and make our efforts participatory, reciprocal and mutually trust-worthy. Previous speakers have emphasized partnership from the viewpoints of their respective countries. Since various aspects of partnership have already been covered, I would like to concentrate on promoting environmental education through the establishment of a regional center of environmental education in the Asia-Pacific Region.

The primary purpose of the paper is to explore possible ways of establishing global partnership particularly in promoting environmental education in the world. In order to achieve this objective, the paper has been divided into two parts. First part attempts to clarify the general meaning and concept of global partnership and its importance. Second part suggests the ways of promoting environmental education in the world through global partnership. Let me discuss each part in turn.

1. Meaning and Concept

Partnership is working together of like-minded individuals, organizations or institutions to achieve a common goal agreed upon by stakeholders on a mutual and reciprocal arrangement of resource sharing basis. It is a common forum to come to a common point, whereby concerned stakeholders can share information, experience, and expertise with each other in order to benefit maximum with minimal resources. They can learn from each other and at the same time can capitalize on each other's strengths and avoid duplication of resources or even avoid unnecessary competition. A good partnership always garners cooperation from others and compliments each other's activities. It is said that we should always go united, as piecemeal

efforts will fail. Working together provides us a new perception and methodology to the problem. It gives us more access to information. Undoubtedly, it creates a situation of mutual respect and trust between collaborators.

Why needs partnership?

Every country has its own specialty, which we can share with each other. Other countries have the centers of excellence, which can be used as nodal institutions for training. We need not waste our resources in reinventing the wheel. Rather, we distil lessons of successes and failures to upgrade environmental education. In other words, we should be able to utilize comparative advantage and recognize each other's strengths. In this way, we can be effective and efficient in utilization of resources.

When we say partnership, whether at the regional or national levels, it includes and not limited to establishing networking of individuals, organizations and institutions of similar interests, exchange of scholars, or bringing scientists together, establishing national focal points and preparation of a framework document such as regional plan, strategy, etc. It also means working together or independently within the accepted framework, exchanging of materials, proceedings, and newsletter, organizing meeting, training, workshops, conferences and seminars, using e-mails and mail system, establishing clearing house in the region and formation of a regional association.

2. Application level

We now have fairly a clear idea of a partnership. Now I would like to share with you as to how we can pursue towards the realization of a global partnership.

1. What should be done?

A Regional Center for Environmental Education for the AP Region should be established as soon as possible. Its goal would be to provide a common forum for environmental experts. It will function as a regional database, library as well as a clearinghouse. It will organize regular training, workshops, seminars, etc.

2. How should it be done?

This organization should be established as soon as possible on a small and experimental basis. Then as we can garner experiences, we can expand its areas of coverage.

3. Where should it be established?

The proposed Center should be established at the IGES, where basic minimum facilities and infrastructures do already exist.

4. Who should be responsible and who are the target groups?

The agency responsible for management of the Center will be the Environmental Education Project of IGES with support from the Secretariat. Initially, the Environment Agency of Japan should be requested to support it for a period of five year. Then the Center should run independently on a sustainable basis.

In conclusion, it is timely to establish an institution that is capable of developing a network in environmental education. It has to be established on a reciprocity and mutuality. It is a giant task and requires home works before any actions are taken.

Status Report on Environmental Education

ENVIRONMENTAL EDUCATION IN AUSTRALIA WITH SPECIAL REFERENCE TO POSTGRADUATE EDUCATION AT GRIFFITH UNIVERSITY

John FIEN

**Centre for Innovation and Research in Environmental Education
Griffith University, Brisbane, Australia**

TRENDS IN ENVIRONMENTAL EDUCATION IN AUSTRALIA

Australia has a long history of environmental education going back over 40 000 years. The Aboriginal peoples who first settled this land came in a series of migratory waves from Asia and gradually populated the country. They established a human ecology which was in harmony with the natural ecology. The land was respected and loved as a mother. Indeed, the land has always been considered sacred by Aborigines who believe that there is a oneness between the land and all the creatures, including the people, who inhabit it. People and animals are all part of the same on-going life forces, with the earth as the source of life. The Aboriginal people had elaborate systems for codifying their knowledge of the land, its cycles, the need to respect it, and the management practices that allowed them to use the land and its resources in a sustainable way. This knowledge was passed down through the generations through stories, dance, ceremonies and the establishment of a network of sacred places. The Aboriginal system of environmental education continues today through family relationships and through special programmes in Aboriginal community schools and even in some progressive non-Aboriginal schools.

However, the Aboriginal vision of the land has not been accepted by non-Aboriginal Australians despite the work of many committed people over the last two centuries. The Aboriginal system of environmental education was quickly supplanted by a pioneering culture based upon the belief that the environment was attractive only in so far as it was "improved" by the predominantly European settlers and their works and valuable only in so far as it was productive. While the consequent disregard for the environment throughout the nineteenth and much of the twentieth centuries is difficult for us to comprehend today, it must be understood that the pioneering vision was informed by value systems and environmental perceptions of other lands, lands that had been cleared for agriculture for over a thousand years and on

which an agrarian-industrial culture had developed. As a result, many mistakes were made as the European pioneers tried to “conquer” the unpredictable climate and generally infertile soils of Australia. The problem of land degradation is, today, Australia’s most severe environmental problem and it is estimated that it is costing billions of dollars each year in lost production and will cost many billions more to solve. At the same time, valuable market garden lands have been lost to suburban sprawl and coastal wetlands drained and reclaimed for urban and industrial purposes. The quality of water in many rivers and coastal areas, as well as the air.

In recent years, many individuals and organisations have become concerned at the rate of resource consumption, the resultant degradation of the natural environment, and the loss of many aspects of social well-being despite material gains in national standards of living. Government, industry and individuals have responded by seeking better ways of managing the environment and living within its limits. However, despite growing public awareness of environmental problems, a tendency towards an Australian national ethos of materialism has favoured consumer-oriented lifestyles over environmental considerations. This does not mean that Australians, at large, are not proud of their environment, especially the natural environment, or keen to see it managed wisely. Rather, their concern has been compromised by the failure of environmental managerialism to involve individuals in recognising their responsibilities for the present condition and the future of the Australian environment.

However, there are signs that another ethos is emerging, an ethos that has much in common with the way in which Aborigines perceive the environment and which is sometimes referred to as an “ecological” ethos. This ethos sees people and the natural environment as one, and questions whether the environment should be perceived solely in terms of resources to be exploited for economic growth in order to raise material standards of living. This “ecological” ethos advocates *conservation* rather than consumer values and anticipates a conservation society which values the intrinsic ecological, aesthetic, scientific and spiritual values of the landscape as much as its economic potential. In the pursuit of a better quality of life for all, a conservation society would seek to conserve all resources for as long as possible, seek a fair pattern of access to resources, eliminate all forms of waste, and develop its economy in harmony with, rather than in opposition to, the natural environment.

It is against this background of environmental problems and changing social values and environmental practices that contemporary environmental education developed in Australia from the 1970s onwards. Environmental education existed in the form of nature study and outdoor education prior to the 1970s. Conservation education was prominent also, especially in the early work of the Gould League programmes in New South Wales and Victoria.

From these early days, environmental education has changed in two major ways.

First, there has been a distinct move away from nature and science based environmental education to a concern with the social and economic and political aspects of sustainable development and the roles that environmental education can play in this. The humanities and social sciences, even more so than ecology and the natural sciences are now seen as providing the foundation knowledge and skills need for environmental education.

Second, schools are no longer the major focus of environmental education. Certainly, schools are important settings for environmental education and much innovative work is taking place. For example, see the series of papers edited by Fien and Ferreira in a special 1997 issue of *International Journal of Research in Geography and Environmental Education*. Adult and community environmental education is now a major focus. For example, at the January 1999 conference of the Australian Association for Environmental Education, keynote addresses, symposia, and workshops were presented on such topics as:

- communicating for the environment
- the media and the environment
- social marketing
- eco-design education
- public participation in catchment management
- education for transport planning and traffic calming
- Local Agenda 21
- greening the campus
- facilitating organisational change, and
- education and training for business and industry

PROFESSIONAL DEVELOPMENT FOR TEACHERS IN ENVIRONMENTAL EDUCATION

These two changes represent a significant maturing of approaches to environmental education in Australia. Nevertheless, environmental education in schools is still very important and is presently being recognised as part of a new curriculum area or subject called “studies of Society and the Environment”. Part of the reason for the success in recent years flows from major efforts that have been made in teacher professional development. Two special initiatives can be isolated for analysis.

The first is a National Professional Development Program (NPDP) which was a nationally funded curriculum and teacher renewal program costing \$Aus60 million over the years 1994-1996. One of the significant aspects of NPDP was the direct funding of professional associations - in partnerships with universities and education systems - to conduct in-service education for teachers. In a competitive bidding process, the Australian Association for Environmental Education (AAEE) was awarded \$150 000 per year for three years to produce and disseminate three core professional development programmes.

1. *Teaching and Learning Through the Environment* is for K-7 teachers and focuses on curriculum planing and teaching methodologies for environmental education, in particular those which deal with values and action. It is a sixteen-hour course which can be provided in eight two-hour workshops or over a weekend. *Teaching and Learning Through the Environment* courses have been conducted in several parts of the country and is a regular feature of national professional development summer and winter schools for teachers.
2. *Teaching for a Sustainable World* focuses on teaching about global environmental and development issues. A special Asian Studies unit and adaptations to four of the modules were commissioned by the Asia Education Foundation also. The modules in *Teaching for a Sustainable World* are adaptable to a wide range of ages but are particularly to upper primary and secondary level teaching. At least two persons from each education system in Australia have been trained to conduct *Teaching for a Sustainable World* workshops for teachers.
3. *Environmental Education Across Australia* was written as a distance education program to allow any teacher in Australia to explore the nature and scope of contemporary environmental education, and then to examine seven case studies from Australia schools presented on a video. The aim is for whole schools to use the program to examine their offerings and thereby develop

a whole school approach to environmental education. This program has reached many teachers across Australia but has primarily been delivered as a weekend course rather than through a distance education.

Four smaller thematic programmes were also developed. *Catchments, Corridors and Coasts: Promoting a Landcare Ethic* is a week-long course which promotes Landcare education principles and resources to increase teachers' content knowledge and teaching skills for a range of land management issues related to catchments and coasts. *Biodiversity and Ecologically Sustainable Development* was developed a distance education programme as a series of case studies about the bio-diversity of arid and savanna landscapes. This programme has expanded and now five sets of case studies cover biodiversity themes in wider geographic regions, including Indonesia and Indo-China. *Red Gold: Environmental History Through Story* is a two day workshop on environmental history in Australia. It is presented by a team of five specialist drama teachers. The impact has been to lead teachers to research their local history, construct their own settings and adapt the methodologies to weave a story-thread into a powerful drama for their students. A training workshop has also been provided at a national conference of drama teachers to encourage others to include environmental themes in their drama-in-education activities. *Eco School: An ESD Approach* is a programme which seeks to promote a whole school approach to resource management in a school. It requires a commitment by principal, staff and community to ensure changes in curriculum, school operational procedures, and personal and group lifestyles to bring about an ethos of conservation. The process of change in two trial schools, one primary and one secondary, is documented as is an array of curriculum alternatives for K-10 on the conservation of energy, water and materials. A companion volume, *Energy in Profile*, suggests ways for schools to save energy and money through a comprehensive energy education program.

TEACHER EDUCATION IN ENVIRONMENTAL EDUCATION AT GRIFFITH UNIVERSITY

Griffith University in Brisbane has been at the forefront in developing teacher education programmes in Australia and the Asia-Pacific region. This case study illustrates two aspects of it work that may lead to global partnerships in the future. However, a brief overview of the university is presented by way of background.

Griffith University is a leading teaching and research institution in Australia with a high international reputation for its expertise in environmental science and environmental education. Griffith's Faculty of Environmental Sciences is the largest inter-disciplinary environmental science teaching and

research institute in the Asia-Pacific region, and is widely recognised for its active international involvement, especially in Asia. Activities include training courses, institution building partnerships (e.g. UNESCO UNITWIN agreements), research and research training projects in many countries, e.g. China, Korea, Japan, Philippines, Vietnam, Thailand, Indonesia, Singapore, India, Malaysia, New Zealand, Fiji, India, Pakistan and South Africa.

The Centre for Innovation and Research in Environmental Education is a collaborative Centre of the Faculty of Environmental Sciences and the Faculty of Education. Its mission is to promote innovation and excellence in the theory and practice of environmental education in school, university and community settings. The Centre is active in many international projects:

- UNESCO-ACEID project on ‘Learning for a Sustainable Environment: Innovation in Teacher Education’
- Seminars and training courses on environmental education and teacher education in the Asia-Pacific region for UNEP and UNESCO
- Seminars and training workshops on environmental education in Japan, Philippines, Indonesia, Thailand), China, Vietnam, South Africa and Taiwan.
- Publication of the UNESCO-UNEP International Environmental Education Programme, *Teaching for a Sustainable World*
- Co-ordination of 13 country research project on youth environmental knowledge and attitudes in Asia and the Pacific
- Global Education Partner of the World Resources Institute (USA)
- Consultant to WWF-USA Windows on the Wild Education project
- Evaluation of WWF’s international environmental education programme
- Writing the discussion paper on ‘reorienting formal education for sustainability’ for the 1997 UNESCO International Conference on Education and Public Awareness for Sustainability’
- Writing the issues paper and facilitating the 1998 OECD international workshop on ‘education and learning for sustainable consumption’
- Membership of two AusAID capacity building projects for environmental education for universities in South Africa

Professional Development Manuals

Griffith University has developed two professional development

manuals for teacher education. Both reflect current thinking about education for a sustainable future and interactive participatory teaching methods.

Teaching for a Sustainable World is a 26 module manual on education for sustainability developed on behalf of the UNESCO-UNEP International Environmental Education Programme with additional support of the Australian Association for Environmental Education and AusAID. It was published in December 1995 to assist teacher educators around the world respond to the need to integrate environmental and development issues into the curriculum following the recommendations in Chapter 36 of *Agenda 21*. The modules illustrate ways of thinking and teaching about sustainable development and sustainable futures, and provide practical assistance on ways of reorienting the conceptualisation and teaching of school subjects and particular syllabus topics so that they help students envision and plan for a sustainable future.

Learning for a Sustainable Environment is an eleven module manual which focus on the curriculum and pedagogical skills needed to implement programmes of education for a sustainable future in schools. It was developed in partnership with UNESCO-ACEID with additional support from UNESCO-EPD, UNEP-NETTLAP, AusAID, the Japanese National Institute for Educational Research and the Japan Foundation. It was published in November 1997 to assist teacher educators promote skills in the innovative curriculum and pedagogical processes necessary to help teachers - in both pre-service and in-service education programmes - empower their students to work for a sustainable future. Ten modules cover such themes as cross-curriculum planning, integrating indigenous knowledge in the curriculum, story-telling, experiential learning, enquiry learning, values education, community problem solving, learning outside the classroom and appropriate assessment. An eleventh module provides skills in workshop planning and facilitation. All of these themes are vital for reconceptualising the nature of curriculum organisation, teaching and learning strategies and assessment so that they foster the reorientation of education for sustainability.

Each module in both manuals contains the workshop leaders' instructions and all associated resources (masters for OHP transparencies, activity worksheets, student readings and leaders' background notes, etc.) needed to conduct a 3-5 hour workshop on the topic concerned.

Both *Teaching for a Sustainable World and Learning for a Sustainable Environment* have now been placed on the Internet, and a self-study CD-ROM version of both is currently in preparation.

Postgraduate Courses in Environmental Education

Griffith University began teaching a mid-career professional

development degree called a masters of Environmental Education in 1991. Nearly one hundred students have graduated, including several from Japan, Hong Kong SAR, India, USA, Canada, UK, Netherlands, New Zealand and Germany. They include a diverse and exciting group of pre-school, primary, and secondary teachers, college lecturers and community educators from government departments, NGOs and industry to complete a Masters Degree specialising in environmental education.

Objectives

- Integrate **innovative content themes** such as: sustainable communities, green consumerism, environmental impact assessment, environmental planning, Indigenous perspectives in land management, international issues in environment and development, environmental economics, waste management, and biodiversity.
- Develop skills and activities to **teach for higher order thinking skills and environmental values** through student enquiry, fieldwork and community projects
- Develop skills in **re-orienting teaching programmes** and school operating practices for sustainable development

Subjects

Students have to study a minimum of five core subjects, selected from

- Introduction to Environmental Education
- Innovation in Environmental Education
- Natural Resource Management Education
- Education, Sustainability and Social Change
- Community Environmental Education
- Experiential Learning in Environmental Education (in partnership with Christchurch College of Education in New Zealand).

A wide range of elective subjects from other Griffith University Masters degrees, e.g. in environmental management, planning or engineering may be taken. Students also have to complete an Applied Environmental Education Project or an Honours thesis to complete the degree.

Flexible study options

Flexible study options mean that students can complete the course

- in two semesters full-time or two years part-time,
- through **on-campus study** and/or **distance education**, and
- with all subjects available through a combination of part-time evening classes, intensive weekend and vacation school study, and flexible learning study packages.

International partnerships

The degree is currently being taught in New Zealand in partnership with Christchurch College of Education and plans are in hand to develop a joint degree with Chulalongkorn University in Thailand. Other partnerships of this type are welcome.

Doctor of Environmental Education

As well as the traditional PhD degree, Griffith introduced a new professional doctor of Environmental Education degree in 1999. This degree provides both coursework and research studies for professionals in both the formal education sector and in community education, and develops approaches to research that enhance skills for professional leadership and for improving professional practice. The degree involves three components:

Environmental education bridging studies

Students without an approved background in masters level environmental education are required to complete 1-2 semesters of bridging studies, as appropriate, from Griffith's Master of Environmental Education degree. Many of these bridging subjects are available through off-campus study.

Research development studies - 1 semester full-time (or 1 year part-time)

- Research Design in Environmental Education
- Professional Practice in Environmental Education
- Research Seminar in Environmental Education

Research thesis - 3 semesters full-time (or 3 years part-time) research project and preparation of either (i) a 40 000 - 50 000 word thesis, or (ii) a portfolio of related published articles and/or reports that result from the research project

and the student's professional practices.

International students are encouraged to spend two of these three semesters conducting their research in their home country and workplace and then to return to Griffith University in the final semester to write their final reports.

Past and current doctoral research projects by Griffith University students in environmental education focus on such themes as:

- Teachers' perceptions of citizenship in environmental education
- Environmental education for the hearing-impaired
- Learnscaping and professional development
- A grounded theory of community environmental education
- Experiential environmental education in teacher education
- Whole school planning for environmental education
- Curriculum implementation in social and environmental education
- Social theory and environmental education
- Professional socialisation of environmental engineering students
- Learning for environmental activism within NGOs
- Community participation and local environmental management
- Organisational culture and corporate environmental management
- Environmental learnings from ecotourism
- Workplace training for ecotourism workers
- Eco-historical tourism and education in natural park management

Further international partnerships in the development of similar or joint degrees are welcome.

AN OVERVIEW OF ENVIRONMENTAL EDUCATION PROJECT IN CHINA

Bing HAO

**Environmental Education Center,
Beijing Normal University, Beijing, China**

Sustainable development was identified as a basic strategy of nation in China. It does not mean all the people who use this term have changed their life style towards the sustainable society, but it became the background and one important driven force of environmental education projects .The other reason for the bloom of environmental education projects is due to that environmental situation has become more and more serious since 1990 in China. There are 220 million primary and secondary school students in China. In general, the education is driven by the examination, the majority of students will not have opportunity to involve in different types of environmental education projects if the education institution doesn't move the environmental education from the margin to the mainstream. Some environmental education projects, especially global projects bring the fresh idea and method which can be promoting reform of education system itself in China now. Government, NGOs and big companies are all very active in these global environmental projects.

Global learning and observations to benefit the environment (GLOBE)

Global learning and observation to benefit the environment was launched by Gore, vice president of American in 22 April 1994. Li Peng, premier of China signed on the agreement in the August of same year. The core of GLOBE is providing the equipment to the school students to measure local temperature, rainfall, land coverage, PH and ecological situation. Then they send all the data to the information center in American through the Internet where data is transferred to a series of colorful picture. There are 28 schools in different provinces involved in this projects. The students who participated in this project have not just known the situation of local environment but also understood the global change. Knowing the link between the local and global environment, they can get the understanding on “thinking globally, acting locally”. Using the Internet help students to understand the idea of global village vividly. Information technology is also a very important skill for them to master in order to solve the environmental problems in the future. Nie Huijuan, a teacher from a GLOBE school thought through the process of observation, measurement and analysising on the local environmental situation, the students acquire knowledge, awareness along to the

environmental ethics.

Environmental educator initiatives

Environmental Educator initiatives was launched jointly by Ministry of Education, WWF and BP. The project will last 3 years. Three environmental education center was set up in Beijing Normal university, East China Normal University and South-west China Normal university to carry out the project. 24 schools have been chosen as the pilot schools. The core of this project is training teachers through four workshops because they identify the confidence and ability of teacher is most important factor for environmental education. The audience of workshop is provincial consular, head teachers and teachers. The inquiry teaching method was warmly welcomed by the teachers, at the same time, they realize the difficulties they faced if they want to try inquiry teaching method in their own teaching. For example, usually there are about 40 to 50 students in one class, it will be extremely difficult for the teachers to organize the group work and topic work. In the process of project design, a very important group people who charge local education authority because all the school work will be evaluated by them. So the environmental awareness and support of these officers are very important.

Distant environmental education

This project is also teacher training program which is supported by the British Council carried out by Beijing Normal University. The idea of this project rooted in the fact that there are so many teachers in China, it is impossible for all the teachers to come to Beijing to receive the training of environmental education. It will waste time and money. This project is still in the pilot phase, four schools include primary school, junior secondary school and senior schools were selected. The classic model of environmental education is described as that environmental education is education about environment, through environment and for environment. This kind of training lack of field experience according to education through environment. Beside this, the exchange between teachers and students is not as direct as it in the ordinary class room, so teachers and students need to be used to this style and confident with the technology. But through these projects, the teachers in the pilot school have opportunity to know the environmental education activities in Britain.

Research on environmental awareness among the primary and secondary school students in China

This is a research project supported by Canada International Development Association (CIDA) which study on the situation of

environmental awareness of Primary and Secondary school students and discuss the approach to raise the students' environmental awareness. The data was collected from the questionnaires which were distributed to 15412 students. The following conclusions were drawn from the research:

- China students are very positive in the process of various types of environmental education activities
- China students has certain knowledge about environment
- According to the environmental behavior, primary students are better than secondary students
- The environmental awareness and behavior was strongly affected by the family.

The needs for more effective environmental education identified form above projects

More environmental education activities in the reality were developed both in classroom and outside classroom. These activities mostly depend on teachers' own responsibility and ethusim which are grassroots and become wider and wider. At the same time, State Environmental Protection Agency developed the project of Green School which is similar with Eco-school project in Europe. The Ministry of Education is developing the guideline for the environmental education.

The above projects have involved in different international partners. These partnerships will be the important base for the further networking on environmental education in the Asia-Pacific region. The EE project can be developed and carried out through their own network in the region. In order to achieve more effective environmental education, the following needs should be met:

1. Need to be more practical. The teachers want the guide in detail, otherwise the environmental education will not really happen in their daily teaching work.
2. Need to overcome the culture shock between different countries. The information will partly lose even in the simple process of translation. The environmental educators should know not just what to do and how to do but also why to do so.
3. Need to develop the strategies to expand environmental experience learned from these projects because just few schools and students can involve in the international environmental education projects.

4. Need to be sustainable. Usually the environmental education activities will stop when the project is over.

AN OVERVIEW OF EDUCATION PROJECT IN KOREA

Hyung-Shin KANG

Environmental Education Division, Korea

1. INTRODUCTION

Environmental education (EE) can be defined as the effort to help people understand the complex aspects of the environment that result from the interactions among biological, physical, social, economic and cultural factors, and to equip people with the knowledge and instill in them the attitude needed to prevent and resolve environmental problems.

Environmental problems basically stem from people's incorrect perceptions and attitudes toward the environment. It is therefore necessary to instill both the older and the younger generations with a love of the environment and to encourage them to practice environmental preservation in their daily lives. Therein lies the importance of environmental education.

The environmental education in Korea will be considered in two ways: Environmental education in schools and Environmental education in the society. The environmental education in elementary schools, middle schools and high schools is emphasized in all subjects related to EE, and is being taught interdisciplinary. Especially, since 1995, 'Environment' subject has been taught in middle schools, and 'Environmental Science' subject in high schools as a selective subject. In colleges, subjects concerning environment have been offered increasingly. Three colleges and four graduate schools have been operating the department of 'environmental education'. And activities on environmental education are actively carried out in the elementary schools and secondary schools through homeroom, etc. In regard to social EE, about 403 NGOs are actively operated in Korea as of 1998, 103 of which are registered in the government and the others of which are not registered.

But the insufficiency of opportunities of opportunities for EE is still left as the problems in EE. And shortage of trained teachers, lack of materials of the EE are also being pointed until now.

2. ENVIRONMENTAL EDUCATION IN SCHOOLS

2.1 Development of Environmental Education in Korea

(1) 1970s

Until the early 70s, the national goal had been to attain economic development in Korea. As such, environmental pollution was hardly a subject of discussion during this time. However, since the mid 70s, as environmental pollution problems became increasingly serious and public awareness was heightening, various efforts began to be made for preservation. It was not until the mid 70s that the subject of environmental education was made to be included in school education in Korea.

Internationally, by 1975, the importance of environmental education began to be emphasized, leading to the adoption of the Beograd Charter in 1975 and the Tbilisi Declaration in 1977. In 1976, the Conference on Environmental Education in Asia was held in Bangkok. By this time, to accommodate growing public interest in environmental education, the Graduate School of Environment was opened at Seoul National University.

(2) 1980s

With the environmental problems becoming more serious in the 1980s, environmental education in schools was fully facilitated. Environmental rights were included in the Constitution as a basic right of the people in 1980. Various environmental laws and regulations were amended and introduced to serve the purpose of environmental preservation, and environmental standards were made more stringent.

The 1980s were a period of particular significance in regard to institutional environmental education in that the subject of environmental studies was formally included in the school curriculum.

The Fourth Primary, Middle and High School Education Curriculum, which was announced in 1982, included environmental contents in various subjects. With this, a foundation was laid on which substantial environmental education could be provided in schools. Since 1985, environmental education included in all levels of the school. In accordance with and to serve the objectives of the new curriculum, schools began to provide environmental education in various classes.

The rising demand for institutional environmental education by all sectors of society and environmental research organizations contributed much to the strengthened environmental education in schools.

(3) 1990s

This period is classified as the growth stage of environmental education's development process. With the Sixth Primary, Middle and High School Educational Curriculum announced in 1992, environmental education underwent drastic development in Korea.

“Environment” and “Environmental Science” were included in the middle school curriculum as separate courses.

The introduction of environmental courses to middle school was very significant in that it institutionalized environmental education. The inclusion of environmental classes in the school was attributed to the common understanding of the entire society that environmental education for young children was the most important means to solve ever-aggravating environmental pollution.

An increasing number of universities began to open environment-related departments, international workshops and seminars on environmental issues which are held more frequently in Korea, and various environmental journals are published in Korea.

2.2 Current State of Environmental Education in Schools

The environmental education in middle schools and high schools in Korea could be largely divided into two types: activities in school and activities in the outside of schools. Activities in school could also be divided into regular curricular activities and extra-curricular activities.

2.2.1 The curricular environmental education

Since the environmental education in regular classes, according to the revised sixth curriculum (1992), is designed to deal with environmental education in all subjects, the units and contents of most subjects deal with environmental education. Among them, the subjects which are closely related to environmental education are social studies (especially, geography and civics), science (i.e. biology, chemistry, earth science, physics), home economics, vocational subject, physical education, art, ethics, Korean language, etc., and the English subject and foreign language subjects try to make students write some sentences about environmental preservation.

Also, the sixth curriculum allows students to study ‘Environment’ in the middle school and ‘Environmental Science’ in the high school as optional subjects. Establishing separate environmental subjects at the level of nation is unprecedented in the world until 1992, in which the curriculum was being made. The principal of the school can decide on whether or not to provide environment as a separate course in his/her school. In the year 1998, 343 middle schools, 12.6% of the nation’s total 2,727 middle schools, provide “Environment” as an optional course. And 287 high schools, 15% of the nation’s total 1,856 high schools provide “Environmental Science” as an optional course.

Thus, the environmental education in middle schools and in high schools has a dual system: teaching in all regular subjects and teaching in a separate subject.

But environmental education for elementary schools does not have its curriculum. In primary schools environmental education is provided in eight including 'Ethics', 'Social Science' and 'Natural Science'. Primary schools are allowed to give environmental education during "homeroom hours" (3th-6th grades: 34 hours per year).

2.2.2 The extra-curricular environmental education

The main activities in schools are club activities, student council's activities, come room, admonitory lectures, and environmental preservation activities. The other activities that are performed in schools are as the following:

- Composition, writing slogans, drawing posters.
- Chorus contest, meditation, writing a diary, collection environmental data and their display, interclass correspondence.
- Operation of centers for displaying environmental Preservation and its period.
- Setting up the Day of Environmental Preservation and its period.
- Mailing messages to home, distributing leaflets
- Inviting specialists on resources and visiting environment-related organizations.
- Operation of hometown-loving organizations and mothers' class
- Activities of environmental monitoring organizations, etc.

2.2.3 The environmental education out of school

Middle school and high school students practice environmental education activities thorough the activities of groups organized in school and through the activities of churches, religious groups, and students' fraternal meetings and research meetings.

For example, club activities such as boy scout, girl scout, hometown-loving organization, and environment-preserving organization in school extend to activities out of school, and the students participate in the activities for environmental preservation which are driven by churches, temples, social-service organizations. Recently, they often take part in various kinds of

activities of Non-Governmental Organizations (NGOs).

2.3. Education for Teachers

In consideration of the significance of the Sixth Education Curriculum, there is an urgent need to train teachers in environmental education.

As of yet, there is a lack of teachers who are able to teach courses. This is because formal education and training for teachers to receive a second major in environmental science was only started in 1994. Courses were offered during summer and winter vacations at several designated universities, and teachers who complete one of these courses will then be allowed to teach environmental courses at secondary schools. 974 teachers entered the courses at universities, such as Ewha Woman's University, Pusan University, Kangwon University, Chonnam University and Chungbuk University, to get a teaching license in environmental science.

20 universities nationwide, including Kangwon University and Kyonghui University, opened environmental teachers courses at their respective environmental science colleges in 1994. Thus, 94 the first graduates with environmental teacher's licenses was produced in 1998. In 1996, the teachers' colleges of Kongju, Kyowon, and Sunchon opened departments for environmental education, which will produce 60 graduates with environment teacher's licenses in 2000.

2.4 Model Schools for Environmental Education

In order to raise awareness of the environment in a society, one must educate people about environmental issues by instilling the importance of the environment and its preservation in children and by fostering systematic environmental education programs at schools. To this end, the Ministry of Environment has designed and been running an educational program for environmental sciences at several designated "model" schools across the country since 1985.

The ministry designates model schools for each category. From the first and sixth designation year (1985-1996), eight schools were designated for each category. From the 7th designation (for the term of 1997-1998), the number of schools designated was increased to 15 schools every year. From this year, a senior high school was designated for the first time.

The Ministry of Environment subsidizes every model school 4 million won for its environmental education program. The ministry also provides designated schools with environment-related publications, pamphlets, VCR tapes and other materials, and assigns environmental science teachers to these

schools.

In order to further improve the program, the ministry will take the necessary steps to support designated schools, which will include raising government subsidies and increasing the number of schools to be designated.

2.5 The Textbook and Subsidiary Materials for Environmental Education

2.5.1 The 'Environment' textbook for middle schools

The 'Environment' textbooks and teacher's guides for middle schools are only one kind of textbooks which were developed in KEDI. In 1993 with the financial support from the Ministry of Education for the development of the textbooks for 'Environment' for middle schools, KEDI finished the first draft for the textbooks in the late of 1993. The textbooks were modified in 1994 after considerations and experiments with them, and they have been used in some middle schools since 1995.

The textbook consists of 22 themes. The average teaching hours per one theme are 3 to 4 hours. Thus the total teaching hours for the environmental education in the middle school are about 66 to 88 hours. And more than 2 activities are presented in each theme. The activities can be selected for the class according to the needs of the local society and the students' needs, and the teaching hours.

The textbook for 'Environmental Science' in the high school was developed in December of 1995, and was going to be used since March 1996. This textbook had been written by five specialties on environmental science; Environment and Technology, Management of Water Quality, Ecology and Environment, etc.

2.5.2 The Subsidiary Materials for EE

The Ministry of Environment has developed and distributed materials for environmental education to secondary schools as supplements to their regular school texts. The materials will serve as guidelines to help schools provide systematic and effective environmental education. The major educational materials the ministry has developed are as follows:

- General training materials for environmental education (for kindergarten, primary, junior high and senior high school teachers, 1993)
- Environmental Study, the Easy Way (1994)
- Case studies on environmental education at the "model schools" (published biannually)

The Ministry plans to develop a diverse range of environmental education materials and distribute them to schools so that environmental education at schools will be provided more efficiently.

3. ENVIRONMENTAL EDUCATION FOR THE PUBLIC AND PROFESSIONAL

While environmental education in schools is designed to encourage the proper attitudes and behavior of future generations, environmental education in society attempts to change the attitudes and behavior of the existing generation. It was only a relatively short time ago that environmental problems came to the Korean public's attention, and thus, the existing generation of Koreans has not received any kind of systematic environmental education. Environmental education for the older generation is therefore very important. Environmental education in society is usually administered by the MOE and other public organizations, as well as private ones. The education programs include programs made specifically for professionals and programs made for the general public. Each is different in terms of depth of study.

3.1 Professional Education

The Environmental Officials Training Center provides compulsory education for government officials at environmental agencies and for engineers involved in pollution prevention businesses in order to further their technical knowledge and capacities. And 8 private environment education institute nationwide including the Korea Environmental Preservation Association provides education and training for environmental managers of firms.

3.2 Environmental Education for citizens

Environmental education for citizens is very important to help them understand environmental issues correctly and practice environmentally-friendly lifestyles in everyday life. With this in mind, the Ministry of Environment are asking for various training institutes to cooperate in operating environmental education and training. And Ministry of Environment fully supports environmental educational schools operated by NGOs and local government and social-civic organizations by providing the schools with environmental science instructors and educational materials. 8 Regional Environmental Management Offices in nationwide have continued to strengthen their social environmental education programs with, for example, the honorary environmental watchdog and lectures on environmental issues for the public.

In order to activate the environmental education in the future, the

Ministry of Environment is driving expansion of environmental education in enterprises, in Civil Defense Corps Units, and military units as well as establishment of environmental education centers and local ecological training centers. In addition, the Ministry of Environment is driving the plans that each group can utilize education facilities and finance, and experts reciprocally by organizing network among environmental education groups such as local autonomous bodies, local Education Offices, NGOs, and military units with Regional Environment Management Offices as centers

4. CONCLUSION

In order to fundamentally environmental problems and develop our environment sustainably, there should be a pro-environmental conversion of the behavior pattern by strongly driving environmental education. In Korea, environmental education which has been performed till now, remains in the level of recognition of environment such as the preservation of nature and the prevention of pollution. In order to continue sustainable development in the 21st century, systematic and comprehensive driving strategies should be established that will not only make citizens pay attention to and understand their environment but make them act spontaneously.

We need to suggest the vision of environmental education for all the people in the 21st century. In order to do this, Korea's government is now under considering the establishment of reformative plans of environmental education for converting into the environment-friendly behavior pattern. We'll discuss the necessity of the establishment of Law of Environmental Education and also consider the environmental educational networks in Asia-Pacific area.

Practice and status of environmental education in Malaysia

Murugadas T. LOGANATHAN

Wetlands International-Asia Pacific-Malaysia Program

INTRODUCTION

The ultimate goal of introducing environmental education (EE) is to form an environmentally literate society that possesses basic and necessary knowledge about environmental matters. It is also meant to make aware of the implications of environmental mismanagement in the process of pursuing development as well as the need to possess necessary skills to deal with environmental haphazard and finding solutions and actions that has to be taken to protect the environment.

In Malaysia, the Ministry of Education's Curriculum Development Centre define EE as follows:

“Environmental education is a process aimed at raising the level of knowledge, understanding and awareness of students towards the environment which would lead their adapting the values and attitudes towards it and equipping themselves with the skills that would enable them to access the quality of the environment and act to better it “ which is basically a modified version of the commonly accepted definition that was conceived in the Tblisi Convention in 1978.

PRACTICE AND STATUS OF EE IN MALAYSIA

In Malaysia, EE is pursued through two different channels: through the formal and non-formal channels. EE through the formal channel refers to 'in-school' education which covers both curricular and extra-curricular activities. While at the same time, EE is also pursued through non-formal channels run by NGOs, government institutions and mass media. The purpose of introducing non-formal EE is to promote awareness towards the environment and to generate social responsibilities in dealing with various environmental issues at the grassroots level. Whenever possible, it is hoped to encourage general public to participate in effective environmental development activities.

During the Sixth Malaysia Plan, the concept of EE in the national education system was formulated based on the Tbilisi (1977) and the Malta (1991) Conference of UNESCO-UNEP and the above mentioned definition

was developed. Based on the definition above, the goal is to aid students to develop sensitivity for the environment, become knowledgeable and, above all, skilled and dedicated (goal levels as validated against the objectives of the Tbilisi and the Malta Conference). The Seventh Malaysia Plan (1996-2000) is regarded as the implementation phase of the concepts and plans mapped out in the Sixth Malaysia Plan. The critical areas addressed, among others, are the curriculum and teacher training components. A critical aspect of Environmental Education in schools is that it is not a subject in itself. EE has been given a new orientation in the national curriculum where it is infused across the curriculum through a multidisciplinary approach at both the primary and secondary levels. This means that the elements of EE can be found in all subjects at the primary and secondary levels which include science, languages, social studies, mathematics, physical education, art and craft, living skills, religious education and moral education, as well as co-curricular activities. However, the contributions from each subject may vary. In the tertiary level, EE programs are directly incorporated into degrees programs or EE related courses.

The quality of students' learning will be determined by the quality of teaching. Thus, teachers need to be trained to deliver effectively on EE. As such, training is imminent. A National Environmental Training Centre has been established to train state education department officers, lecturers, teachers in the teaching and learning strategies related to EE. Those who have been trained act as resource personnel to set up other exemplary environmental education centres in schools and conduct in-service programs either in-house training, or at the state and district levels, as part of a multiplier effect system. According to the latest statistics, there are 140 such centres in primary schools and 70 in secondary schools throughout the country. However, the effectiveness of these centres are not known. In 1997, a National Strategic Action Plan for EE was formulated in Malaysia. The target groups, contributions and benefits of the direct involved parties, primary users and indirect involved parties of EE were outlined in the action.

ENVIRONMENTAL EDUCATION IN MALAYSIA - EFFORTS MADE BY OTHER AGENCIES

Non-formal EE generally targeted for all citizens so as to provide them with broad knowledge and awareness of environmental problems, generating concern for and committed to works towards their solutions. These programs are normally run by relevant government agencies (not including Education Ministry/Department), private sectors, NGOs, nature groups/societies, social groups and the mass media. The programs are often aimed at raising environmental awareness of the public and at the same time involved in the protection of environment by advocating the prudent use of resources through

sustainable development. Other means of non formal EE includes public lectures, seminars and workshop which perceived as important pathway to EE which provide for more personal interaction and approach. Field excursions are also useful in letting public see for themselves the beauty and grandeur of nature such as those being in our tropical rainforest and other habitats. Programs can also take the form of articles, reports and daily news and editorial pieces, radio and television programs, which are all generated by the mass media. Towards this end, the mass media should be commended for their active role in environmental issues which have indirectly provided the environmental literacy among the general public which undoubtedly are very positive and encouraging.

In Malaysia, the following government agencies/private organisations, other than the Education Ministry/Department for example have been playing a role in enhancing informal EE in the country :

- Ministry of Science, Technology and the Environment
- Department of Wildlife and National Park
- Department of Environment
- Department of Forestry Peninsular Malaysia
- Sarawak Forest Department
- Sabah Nature Club Scheme
- Research Institution e.g. FRIM
- Mass Media

Department of Wildlife and National Park

This department has developed EE programs since 1978. Nature education course and weekend camping are being conducted to expose and educate schoolchildren about the environment, generally in the aspect of flora and fauna, conservation ecosystem and recreation. There are 3 nature education centres that are currently being operated by this department in Peninsular Malaysia.

Department of Environment

The department has made a commitment to develop a national approach to educate the public, to increase their awareness and to provide them with necessary training and infrastructure facilities on environmental and development issues. The approach used complies with the United Nation's

Agenda 21 where sustainable development was the key entity. Some of the programs and activities include public education, community based activity, environmental awareness survey, motivating the children, communication programs and etc.

Forestry Department of Peninsular Malaysia

The Community Forestry Programs has been carefully planned by the Forestry Department of Peninsular Malaysia as an essential programs to educate public from all walks of life to enjoy the scenic beauty of forest, to love the forest as well as to appreciate the role of forest in providing healthy living and in the maintenance of environmental ecological stability.

Sarawak Forest Department

This is the main agency in Sarawak carrying out EE. A number of National Parks, Wildlife Centers and Teachers Training College were used for the programs. Target groups ranged from primary school children to trainee teachers and graduates in Diploma of Education and school leavers.

Nature Clubs Scheme in Sabah

The Sabah Nature Club Scheme is an extra curricular activity within schools initiated by the Sabah Foundation with the co-operation of the Sabah Education Department. It is an EE scheme created with a non-formal approach aimed at young people to become more involved with environment, contribute to environmental awareness, enjoy themselves and learn the same time. The highlights of the clubs activities are the series of Nature Orientation Courses and Nature Camps held at the internationally acclaimed Danum Valley Field Centre (DVFC). The DVFC has become a major centre for research and educational activities in Malaysia.

Research Institution

FRIM or the Forest Research Institute of Malaysia also conducts regular EE programs for school childrens, namely forest based activities during weekends and school holidays.

Mass Media

All the local dailies in Malaysia provides at least a weekly column on environmental issues which most of the times indirectly relates to EE.

NGO DRIVEN EE PROGRAMS IN MALAYSIA

The NGO driven environmental education in Malaysia has been gaining importance for the last ten years. This was mainly driven by the fact that the environmental education pursued through the formal channel (e.g. school and universities) are normally very theoretical and does not involve much field experience. On the other hand, namely school teachers' lack of the content and action skills necessary for effective environmental education is an impediment to widespread infusion across the curriculum. The best form of environmental education most often takes the form of nature study; energy, outdoor, or conservation education. At its best, it emphasises a person's appreciation for and interaction with the natural and social environment and teaches the skills needed for informed decisions, responsible behavior and constructive actions concerning the environment.

The government of Malaysia is now also recognising the need for creating wide spread environmental awareness among the general population. The key role that NGOs play in this process is also being recognised. NGOs and the local government is increasingly working together, recognising the synergies that can result from this co-operation. Linkages between governmental institutions and NGOs are continually improving. In many cases, the Malaysian government is extending support and working with NGOs towards creation of environmental awareness.

Some of the local or internationally linked NGOs currently active in EE programs in Malaysia are as follows:

- WWF Malaysia
- Malaysian Nature Society
- Wetlands International-Asia Pacific Malaysia Program

WWF Malaysia (WWFM)

WWFM believes that, considering the many different ways people learn and the various contexts in which they learn, environmental education should therefore, where possible, be integrated in all disciplines and should employ formal, non-formal and informal methods and effective means of communication and education. Under the formal education component, WWFM works with various government ministries and departments like the Ministry of Education and Departments of Environment, the Fisheries Department and also authorities to promote EE in curricular and co-curricular activities in schools. WWFM work in teacher training, educational resource materials productions, establishment of model 'green schools', establishment of regional environmental or nature education centres, a mobile education

unit and environmental camps. They also directly operate a number of nature centres throughout the country.

Under the non formal education component, WWFM works with Department of Environment, local authorities, local universities, the Ministry of Youth and Sports, other government departments and community groups to promote EE among members of the general community.

The Malaysian Nature Society (MNS)

MNS established since 1940 has been involved in the process of public education (non formal) and the creation of awareness on the conservation and understanding of the country's natural heritage. The environmental education programs has been carried out through :

- MNS branch - MNS members trips (non formal)
- MNS Nature Education Centers - formal and non formal

Wetlands International-Asia Pacific-Malaysia Program (WIAP-MP)

The expertise of Wetlands International is founded on over 40 years of experience in providing knowledge and guidance on sustainable wetland management world wide. To promote better coordination of wetland issues around the globe, Wetlands International-Asia Pacific was established in 1995 in Kuala Lumpur, Malaysia as a regional office for the Asia-Pacific region (two other regional offices are located in Holland and Canada). Consequently a country programs known as Malaysia Program was established under the umbrella of this regional office, due to the rich resources of wetlands available in Malaysia.

The total area of natural wetlands in Malaysia is estimated at 3.5 - 4 million ha, or 10% of the total land area. Due to continuous threats to this fragile ecosystem prompt by development pressures, the Malaysia Program decided that there was an urgent need to conserve and protect this environment to safeguard their existence for future generations. Therefore, the program outlined few goals to counter these problems. Enhancing EE programs depicting wetlands were considered as one of our primary goal which had the following objectives:

- To disseminate information on various aspects of wetlands to the general public
- To create awareness of wetland ecosystems and wetland benefits to schools through interesting and informative materials

- To provide resources and teaching aids for teachers to compensate for lack of materials on wetlands in the education syllabus in Malaysia
- To promote the production and development of wetland awareness materials among teachers in schools
- To seek local or global partnership to enhance EE programs in the country

Objective 1 : To disseminate information on various aspects of wetlands to the general public

So far a number of projects have carried out under this objective , namely

- The establishment of a resource center (which is housing about 5,000 reading materials consisting of books, reports, journals, newsletters, bulletins etc.) within the premises of the regional office which is open to the general public at large at no cost for those seeking information on wetlands.
- Information pamphlets and brochures on wetlands for those seeking fast information
- In house publication materials for sale at reasonable cost. Large number of books has also been donated to relevant government bodies, individuals and universities.
- The University of Malaya Library at the Institute of Post Graduate Studies and Research has a section on wetlands associated materials for reference (all books were donated by WIAP-MP).
- Large array of photographs, posters and slides for public viewing
- A number of wetland related video tapes for public viewing
- Presentations through seminars on wetlands related matters
- Dissemination of wetland information via exhibitions in public places (celebration of World Wetland Day annually and other related events) and wetland camps
- Regular wetland articles in local papers
- Community based Environmental Education : one being formulated at Tasek Bera, the only RAMSAR site (Wetlands of International Importance) in Malaysia. This is a small component of the larger project on Integrated Management of Tasek Bera.
- Construction of a wetland info center at Tasek Bera. This is also a small

component of the larger project on Integrated Management of Tasek Bera.

Objective 2 : To create awareness of wetland ecosystems and wetland benefits to schools through interesting and informative materials

So far a number of projects have carried out under this objective , namely

- Production of posters on wetland associated matters and distributed to schools for circulation
- Production of brochures and pamphlets for circulation
- Wetland contest for school kids, including drawing, coloring and essay contests
- Wetland workshops for school kids, namely water quality measurements and identification of wetland associated organisms

Objective 3 : To provide resources and teaching aids for teachers to compensate for lack of materials on wetlands in the education syllabus in Malaysia

So far a number of projects have carried out under this objective , namely

- Production of information booklet for teachers, namely in waterbird migration
- Production of a wetland assessment and survey manual

Objective 4 : To promote the production and development of wetland awareness materials among teachers in schools

-none done so far-

Objective 5 : To seek local or global partnership to enhance EE programs in the country

A number of project which had local or global partnership during implementation :

- The publication of the Wetland Wonders in a national paper once every month is a local partnership programs between WIAP-MP, Hong Kong Malaysia Ltd and News Straits Times Malaysia. Hong Kong Bank provides the fund, the paper provides the free column and WIAP-MP contributes a wetland article every month. This is still being published since 1996.
- The production of the National Wetland Directory for Malaysia, the first

of its kind in the country were produced by forming local partnerships with the Wildlife and National Parks Department, and PETRONAS (National Petroleum Company)

- The River Watch Program, jointly conducted with DID and DOE Malaysia. Has been differed indefinitely for a year due to insufficient fund from DID
- Quite a number of locally published materials were produced using global partnership namely with World Bank, ADB, GEF, WWF, IUCN, UNDP, DANCED etc.
- Community based Environmental Education at Tasek Bera (RAMSAR site), funded by DANCED as part of the Integrated Management of Tasek Bera Project.

WIAP-MP is the only organisation working in Malaysia which is dedicated to the conservation and management of wetlands. However, since we have a great working partnership with a number of other local organisations, namely MNS and WWFM, therefore in a broader picture other ecosystems (non-wetlands) are also equally being cared and considered in Malaysia for conservation and protection purposes.

Other related NGOs who are also involved in EE in Malaysia

- Consumer Associations of Malaysia
- Friend of the Environment Malaysia (Sahabat Alam Malaysia)
- Environmental Protection Society Malaysia
- And many more

DIRECTION OF FUTURE EE PROJECTS AS ENVISAGED BY WIAP-MP

Wetlands International-Asia Pacific under the Malaysia Program has received numerous requests for information and resources on wetlands from various sections of the public, ranging from teachers, schoolchildren, and university students to government agencies and corporate organisations.

As such, we recognise that there is a pressing need for education and awareness materials on wetlands. There is a lack of wetland awareness among Malaysians which stems from lack of accessible information on wetlands. If these precious ecosystems continue to be regarded as wastelands, in the long run the future of wetlands will further be jeopardized.

Therefore, WIAP-MP feels that it is essential to address this lack of

awareness by producing user-friendly awareness and education materials that can help the public to fully understand the biodiversity and enormous value of wetland ecosystems in Malaysia. In the whole the EE efforts are further enhanced.

Major features

The production and development of various printed and multimedia education and awareness materials for the public/schools:

- Wetland Education Kit (comprising fact sheets, worksheets, etc on wetlands)
- Awareness leaflets/pamphlets of different wetland ecosystems
- Posters/Flyers
- Publications (resource & activity books, information booklets for teachers, etc)
- Photo/slide library or image bank of wetland sites & species on CD-ROM
- Video documentary of wetland ecosystems and benefits

Activities

Talks and slide shows to schoolchildren to instill awareness on the importance and diversity of wetland ecosystems and benefits.

Training workshops for teachers to design and develop materials for wetland awareness that can be used effectively in the classroom.

Counterparts:

Expected counterparts & collaborating agencies/organisations:

Other NGOs e.g. Malaysian Nature Society, WWF Malaysia esp. for inputs on materials design and development, collaboration in running workshops or talk sessions in schools, etc., Ministry of Education Malaysia, Ministry of Science, Technology and the Environment Malaysia, Department of Environment Malaysia.

Outputs:

The outputs will be wetland education and awareness materials as listed in Section ***Major features***. The materials will provide information on topics such

as the following:

- Wetland types e.g. peat swamps, mangroves, lakes, etc.
- Wetland species e.g. waterbirds, fish, plants, etc.
- Wetland benefits
- The vital link between wetlands and water (wetland water resources)
- Socio-economics of wetlands
- Wetlands and local people
- Local community involvement in wetland management
- Promoting sustainable development of wetlands
- Status of wetlands in Malaysia
- Impacts of wetland degradation
- Actions the public can take to help conserve wetlands

PROBLEM ANALYSIS OF IMPLEMENTING A BETTER EE PROGRAMS IN MALAYSIA

The problem arising to the present poor development of EE and EE programs not achieving objectives are primarily due to inadequate local communities participation, inadequate resource materials, poor continuity of programs, insufficient non-formal EE programs and no emphasis of EE in institutions of learning. A more through analysis to these problems showed that inadequate resource materials is due to the lack of resource materials in EE and the present EE resource materials available are generally not appropriate for the prevailing environmental status in the country. Poor continuity of programs was caused by the absence of follow-up and ad hoc or short term EE planning which is adopted at present. In sufficient non formal EE programs is owing to the apparent absence of the workshops, training courses or conferences. The absence of emphasis of EE in institutions of learning is due to lack of practical activities which emphasise EE, teachers not giving enough support and are not knowledgeable about EE which contribute to the lack of recognition of EE teachers which then give rise to no emphasis of EE in institutions of learning.

The contributing factors are insufficient human resources in EE which stemmed form the acute lack of manpower in EE. Since there is also short of training of trainers and supportive courses in place and no career path there

is lack of experience resource persons in the country to address EE issues. Coupled with ad hoc planning in the overall EE in the country, there is lack of coordination, monitoring and evaluation of existing EE programs and with no institutional support in the form of national council or association, EE hangs on a low priority with limited publicity and co-operation from key EE players. Perhaps one of the most apparent cause of these problems is insufficient funding arising from inadequate political commitment to EE which caused by no clear EE policy in the country.

CONCLUSION

Malaysia need a comprehensive national policy on environmental education. Despite major strides in the past decade in environmental awareness much remains to be done. Major ecosystems are neither well protected or adequately understood. Rapid urbanisation has created the need for more emphasise on urban environment ecology. A more comprehensive policy will help us create an appropriate network of environmental education organisations, each with it's own strengths and niches. This 'network' sanctioned by the Education Ministry could function as a national secretariat.

In view of the above from the NGOs perspectives, the aims should be directed towards :

- Increasing the quality and quantity of the supply of environmental education information to the public
- Establishing an environmental education unit through professional training and field experience and research into ways and approaches to disseminate this information

Apart from the current framework of operating nature clubs, nature education centers and independent education activities, the NGOs look forward to work with the Education Ministry and relevant departments to promote and incorporate the environment as an integral part of the national curriculum. This only can be achieved with enough support, resources and expertise from the government and public. Training is essential to create a pool of environmental education educators who in turn can train a larger group of people.

As a collective unit the NGOs propose the following long term goals :

- Reach all environmental education educators in the country to facilitate sharing of experiences and information
- Work through nature club members, public and related organisations

- Network with international organisations to form global partnerships
- Capacity building for the EE related organisations especially within government
- Universities and NGOs to streamline and improve the quality of EE
- Allow for strategic planning
- Network to produce materials and resources e.g. interactive modules and posters
- Develop model programs, trial testing, evaluation and implementation of EE

References

Sham Sani. 1993. Environmental Conservation and Management in Malaysia. *Akademika. Journal of Social Sciences and Humanities*, Volume 42 & 43 (Special Issue), National University of Malaysia, pp. 267.

WWF Malaysia. 1986. *Greening of Schools : An Education Manual*. Published by WWFM in cooperation with the Ministry of Education's Curriculum Development Centre and Institut Aminuddin Baki, pp.56.

Ng Yoot Leng. 1996. Environmental Education as an environmental management tool in Malaysia. Masters Thesis (in Malay Language), National University of Malaysia, pp.155.

Pan Khang Aun & Lim Boo Liat. 1997. *Proceeding of the First National Workshop on Environmental Education : Strengthening Development of Environmental Education in Malaysia*, pp. 156.

Perspective Reports for Global Partnership

PROMOTING EDUCATION FOR SUSTAINABLE FUTURE: APPROACHES TO REGIONAL COOPERATION IN ASIA AND THE PACIFIC

John FIEN

**Centre for Innovation and Research in Environmental Education
Griffith University, Brisbane, Australia**

RECOGNIZING THE IMPORTANCE OF GEOGRAPHY AND CULTURE

One of the major purposes of international conferences is to find ways of working closely and collaboratively with each other. In environmental education, in the Asia-Pacific region, we share a common concern with planning the most effective educational processes that can enhance the transition to a sustainable future; we share common teaching and research interests and goals; and we share a common commitment to finding effective models of collaboration. Yet, despite these common goals, it is important to be aware that our region, the Asia-Pacific region, is one of great diversity, environmentally, socially, culturally and economically. In its 50th anniversary commemoration publication, UNESCO described our region in this way:

From the world's highest city, Lhasa ... to the world deepest Lake Baikal...; from the highest mountain to the deepest seas; from the driest deserts to the dampest forests; the Asia-Pacific region covers an outstanding array of geography and culture.

The region is one of sharp contrasts. It has two of the world's most populous countries, China and India, and some of the world's smallest countries, Nauru in the Pacific and the Maldives in the Indian Ocean. It has one of the world's richest countries, Japan, and the world's poorest, Cambodia and Bangladesh.

With over 700 languages in Papua New Guinea alone, the region's ethnic and linguistic diversity is greater than anywhere else in the world. Great cultures have left legacies such as the Great Wall of China - 2350 kilometres long - ... and the legendary temples of Borobodor in Indonesia. A wealth of religions criss-cross the region, ranging from Buddhism, Hinduism, Christianity, Islam and Sikhism, to other faiths such as Confucianism, Jainism and Taoism.

Many countries in the region have, for at least the past three decades, been experiencing rapid economic, social, cultural and political change. With these changes have come a fear that modernisation means Westernisation, and the loss of ways of life and cherished traditions that have evolved over the centuries.

Economically, it is the fastest growing region in the world and yet, it is still home to over two-thirds of the world's poor, due to huge disparities in income distribution. Population figures have doubled over the past 35 years and are still on the increase, and the environmental and social effects of such toll are beginning to take their toll. (UNESCO 1996)

Such diversity means that it is important to find models of regional collaboration that respect our different histories and intercultural sensitivities and build upon the strengths that each of us bring to the table. This need is made all the more urgent by the environmental imperatives we face.

By the year 2040, the population of the Asia-Pacific region is expected to have doubled to an astounding 3.3 billion people. The region is already home to 63 per cent of the world's population, with five countries alone accounting for 46 per cent of the world's population - China, India, Indonesia, Pakistan and Bangladesh. The world has never seen such growth in so short a time. By 2040 requirements for food will have doubled and the need for water and sanitation quadrupled. The consumption of energy and manufactured goods will increase fivefold, while pollution may increase up to tenfold. (UNESCO 1996)

Education has been identified as a critical driving force for change in the Asia-Pacific region, and countries and regional organisations have adopted a range of strategies for implementing programs in environmental education. Many workshops and training programs have been organised since an 1986 Regional Meeting of Experts in Bangkok at which an action plan was developed for environmental education from primary through post graduate levels. While little substantive work followed, the impetus was picked up in the UNESCO-ACEID partnership with Griffith University in the *Learning for a Sustainable Environment Project* which is coordinating a regional action research network for professional development of teachers educators in the region. Significant work is now taking place in the Pacific also under the leadership of the South Pacific Regional Environment Programme which held a strategic planning meeting for national environmental education experts from small island developing states in the Pacific in 1998.

Based on the country reports submitted to various UNESCO environmental education seminars held in the region since 1993, it is possible to identify a set of agreed principles for 'best practice' in environmental

education in the region:

- Environmental education considers the environment in its totality, i.e. ecological, political, natural, technological, sociological, aesthetic and built environments.
- Environmental education develops awareness of the importance, beauty and wonder that is, and can be, found in these aspects of the environment.
- Environmental education explores not only the physical qualities of the human relationship with the environment, but also the spiritual aspect of this relationship.
- Environmental education is a response to the challenge of moving towards an ecologically and socially sustainable world.
- Environmental education is concerned with the interaction between the quality of the biophysical environment and the socio-economic environment.
- Environmental education transcends the division of knowledge, skills and attitudes by seeking commitment to action in an informed manner to realistic sustainability.
- Environmental education recognises the value of local knowledge, practices and perceptions in enhancing sustainability.
- Environmental education supports relevant education by focusing learning on local environments.
- Environmental education considers the global as well as the local environment. Since the world is a set of inter-related systems, there is a need for a world perspective on environmental issues.
- Environmental education focuses on current and future perspectives on environmental conditions.
- Environmental education is interdisciplinary and requires information and insights drawn from many different disciplines.
- Environmental education emphasises participation in preventing and solving environmental problems and revokes the passive accumulation of information about the environment. It should foster and arouse a sense of personal responsibility, greater motivation and commitment towards the resolution of the environmental situation.
- Action is both a vehicle for and an outcome of environmental education.

- Environmental education develops the skills:
 - to identify alternative solutions for the environmental situation;
 - to clarify the values associated with the alternatives, and
 - to use these values to make decisions about which alternatives to choose.
- (UNESCO-ACEID and Griffith University 1994)

RECOGNISING THE CHALLENGE

Unfortunately, there are many barriers to the widespread adoption and practice of principles such as these in the region. In the formal education sector, class sizes are often very large and often teachers lack resources and experience in the interactive pupil-centred teaching strategies that flow from these principles. School curricula are also dominated by competitive academic curricula which priorities end-of-course examinations and discourage the development of locally and personally relevant learning outcomes. Outside the formal education sector, non-formal and in-formal environmental education are often poorly organised and resourced despite the best efforts of education officers in Ministries of Environment and non-government organisations.

Another major barrier to the widespread adoption of good practice in environmental education is the fact that many countries lack a clear articulation of environmental education with national education and environmental policy. In most countries in the region, environmental education remains embedded within pre-Rio conceptions of environmental education which have tended to favour science and conservation approaches rather than the holistic imperatives of education for sustainability. Consequently, most initiatives to promote environmental education have tended to come from Ministries of Environment, Agriculture or Natural Resources rather than Ministries of Education. While welcome, the efforts of such Ministries tend to be directed to specific environmental issues rather than a whole-of-government commitment to sustainability. As a result, these efforts tend to concentrate upon raising awareness and information campaigns and are directed at individual behavioural change rather than broader educational goals. Indeed, sustainable development tends not to be well understood as a concept outside of limited environmental circles or as a whole-of-government commitment. In some countries there are no national policies or guidelines for environmental education. The result of this has been a lack of coherent strategies and long term planning. Even in those countries which do have such policies, many have not been revised to incorporate the broad social, economic and political, as well as conservation, aspects of sustainable development. Policies in many

other countries suffer from a lack of commitment in financial as well as technical support.

In the formal education sector, the general lack of involvement in matters of sustainability by Ministries of Education has tended to marginalise environmental education - in both its pre- and post-Rio forms - from mainstream education policy. Most countries therefore lack a coherent plan for progression in environmental education or education for sustainability from kindergarten to college level in the formal education sector. As a result, it is often not a curriculum priority at the school level, especially where the curriculum is over-crowded. In addition, the low profile of environmental education and sustainable development in external examination subjects contributes to a lack of status in schools. Therefore, it is not surprising to find that many teachers, students and parents do not perceive it as a curriculum priority, or that it is difficult to attract teachers to become involved. In some countries the innovative teaching methods of environmental education conflict with the traditional culture of schooling also. This problem is particularly acute in countries where there is an emphasis on the content rather than the process of education. Such problems are intensified by a general lack of awareness and support from many education policy makers, school administrators and academics in teacher education institutions. This makes the introduction of both in-service and pre-service teacher education for sustainability difficult and, when in-service courses are provided, these tend to be attended by teachers who are already committed to environmental education.

These are enormous barriers to the reorientation of education for a sustainable future, barriers that cannot be addressed by the efforts of individuals or small groups, no matter how committed they might be. However, an appreciation of the potency of such barriers is vital if plans are to be made to help enhance the quality of environmental education in the region.

SEEKING STRATEGIC APPROACHES

Our Common Future, the Report of the World Commission on Environment and Development (1987) states that “the world’s teachers ... have a crucial role to play” in helping to bring about “the extensive social changes” needed along the pathway towards a sustainable future (p. xiv). For teachers to play this role successfully they require a commitment to the principles of education for sustainability; without it, they may lack the skills, insights and desire to ensure that their students are provided with opportunities to learn how to contribute to the ways their communities are working to advance the transition to sustainability. This section identifies three needs that must be

addressed if education is to fulfil its potential in helping to bring about such changes. These are:

1. The need to identify regionally appropriate characteristics of education for a sustainable future, and agreed strategies for working collaboratively to reorient education systems towards sustainability.
2. The need to reorient teacher education so that teachers are more adequately prepared to play their role in promoting sustainable futures.
3. The need for an enhanced research base and research capacity for environmental education in countries of the region.

Each of these three needs are briefly addressed and strategies suggested for collaborative action on them.

1. Education for a Sustainable Future

The theme of education has been central to discussions of sustainable development since the Earth Summit in Rio de Janeiro in 1992. "Education" or a synonym (e.g., awareness and training) is the second most used noun in *Agenda 21* which was the agreed report of the earth Summit - second only to the word "government". Since 1992, much work has taken place around the world, especially within UNESCO in Paris and the Commission for Sustainable Development in New York to develop a clear vision of what roles education can play to fulfil such high hopes. An international conference was held in Thessaloniki, Greece, in December 1997, to discuss a discussion paper on education prepared by UNESCO. This discussion paper, titled *Educating for a Sustainable Future: A Transdisciplinary Vision for Concerted Action*, stated that:

It is widely agreed that education is the most effective means that society possess for confronting the challenges of the future. Education, to be certain is not the whole answer to every problem. But education, in its broadest sense, must be a vital part of all efforts to imagine and create new relations among people and to foster greater respect for the needs of the environment.... Education is also the means for disseminating knowledge and developing skills, for bringing about desired changes in behaviours, values and lifestyles, and for promoting public support for the continuing and fundamental changes that will be required if humanity is to alter its course, leaving the familiar path that is leading towards growing difficulties and possible catastrophe, and starting the uphill climb towards sustainability. Education, in short, is humanity's best hope and most effective means in the quest to achieve sustainable development. (UNESCO 1997a)

Educating for a Sustainable Future: A Transdisciplinary Vision for Concerted Action

contained six chapters on:

- the importance and meanings of sustainable development
- the importance of education as a force for change
- reorienting non-formal and in-formal education for sustainability
- reorienting formal education for sustainability
- the importance of sustainable consumption, production and lifestyles
- ethics for a sustainable future

Discussions have been continuing since Thessaloniki about what these issues mean for education. Unfortunately, there were less than ten people from the Asia-Pacific region at Thessaloniki out of a total attendance of over 600 people. This means that much work remains to be done to develop a regional perspective on the meanings and strategies for reorienting education for a sustainable future in this part of the world.

UNESCO-ACEID has provided leadership in the Asia-Pacific region through hosting a regional conference in December 1997 on Education and Sustainable Development. Its report, *Educational Innovation for Sustainable Development*, is an important starting point for discussions on the meaning of education for sustainability in this region. This report should be used in conjunction with other UNESCO reports such as the Thessaloniki Discussion Paper and reports from the Commission for Sustainable Development to develop an Asia-Pacific perspective on the meanings and strategies for reorienting education for a sustainable future. This is important for the region. It is also important for the rest of the world because of the particular cultural perspectives on sustainability that we can bring to the evolving understanding of sustainable development, ethics for living sustainably, and the importance of education.

Recommendation 1: A regional conference be held to develop and contribute Asia-Pacific perspectives on the emerging meanings of reorienting education for a sustainable future.

2. Reorienting Teacher Education for Sustainability

The international community has always had an ambitious role for teacher education, perceiving it as “potentially the greatest source of educational change in an organised, orderly society” (UNESCO 1976). Effective teacher education is a vital first step in producing an environmentally literate population which can, in turn, advance the transition towards sustainability.

Not surprisingly, the UNESCO-UNEP International Environmental Education Programme once described the preparation of teachers as “the priority of priorities” for action to improve the effectiveness of environmental education (UNESCO-UNEP 1990, p.1). In an early report on this theme, Wilke (1985) stated that:

The key to successful environmental education is the classroom teacher. If teachers do not have the knowledge, skills and commitment to environmentalise their curriculum, it is unlikely that environmentally literate students will be produced (p.1).

However, a special commitment from teacher education institutions is necessary to reorient teacher education towards sustainability. This is because education for sustainability requires a new focus and outlook within education which prospective teachers - and teacher educators - may not have experienced in their own education. This new outlook has been described as the exploration of “a new personal and individualised behaviour based on the ‘global ethic’ which can be realised only through the enlightenment and training of educational professionals” (Simpson et al 1988, p.17). Thus, a teacher cannot teach towards sustainability effectively solely by obtaining information on environmental concerns, by studying environmental science. Instead, Simpson et al argue that:

Intensive teacher education, not merely orientation, is essential if the present fragmented approaches of traditional education are to be transcended in favour of a holistic, global approach, and interdisciplinary and a thorough change in both the outlook and preparation of teachers and teacher educators ... The task is more complex than putting environmental content into existing curricula. (Simpson et al, 1988, p.17).

The Earth Summit also highlighted the need for improving teacher education in the expanded field of education for sustainability. In adopting *Agenda 21*, governments committed themselves “to update or prepare strategies aimed at integrating environment and development as a cross-cutting issue into education at all levels within the next three years” (UNESCO-UNEP 1992, p.3). Chapter 36 of *Agenda 21* on ‘Education, Public Awareness and Training’ identified training as an important “programme area” specifically called upon educational authorities to assist the development of pre-service and in-service training programmes which address the nature and methods of education for sustainability for all teachers. Similarly, the background paper prepared for the 1997 UNESCO International Conference on Environment and Society: Education and Public Awareness for Sustainability held in Thessaloniki stressed that the messages of education for sustainability “must also be emphasised in pre-service and in-service

programmes of teacher training” (UNESCO 1997, p.39). More recently still, the Sixth Session of the Commission on Sustainable Development which reviewed the promotion of education for sustainability, called upon national and international action to develop guidelines for reorienting teacher education towards sustainable development (CSD 1998, p. 8).

Thus, there is a need to strengthen teacher education as a force for supporting the reorientation of education for a sustainable future. The Asia-Pacific region is now recognised by UNESCO as the most innovative part of the world in this, and it has devolved resources to UNESCO-ACEID to develop international demonstration projects in teacher education for sustainability, and to develop multimedia based versions of the teacher education guides prepared for UNECO at Griffith University. Thus, at the present time, the modules in *Teaching for a Sustainable World and Learning for a Sustainable Environment* are being revised for publication on the Internet and as a CD-ROM to promote teacher education and teacher professional development.

The Asia-Pacific region is also one of the most innovative regions for postgraduate studies in environmental education with masters courses operating in a number of countries, eg Australia (Griffith University), Hong Kong SAR (University of Hong Kong), Japan (Tokyo Gakugei University), New Zealand (Christchurch College), the Philippines (Miriam College) and Thailand (Mahidol University; Chulalongkorn to begin in 2000). Much collaborative work could be done by way of shared courses, development of on-line courses, regional student symposia, and staff and student exchanges.

Recommendation 2: Training workshops be conducted to help disseminate UNESCO’s new multimedia resources for teacher education, and to train teacher educators in the use of multimedia strategies for professional development.

Recommendation 3: Strategies be developed to find ways of promoting collaboration between, and the expansion of opportunities for, masters of Environmental Education degrees in the region.

3. Research Infrastructure and Capacity

Research in environmental education is a relatively new field in the region. Much work to date has been based upon intuition and lacks a solid research base and has rarely been evaluated effectively. Teaching loads in universities and colleges in the region are often very high and funds are rarely available for rigorous research and evaluation projects. Many researchers also lack familiarity of the qualitative, critical and post-structural research methodologies that are important to the values and social change aspects of

environmental education (see Williams 1997).

However, experience in the Young People and the Environment project on youth environmental attitudes in 12 countries in the region and in the evaluation of the *Learning for a Sustainable Environment Project* shows that there is a strong commitment to research among many environmental educator and that they are willing to make major efforts to develop their skills in research. All that seems to be lacking is training and coordination.

Recommendation 4: Training workshops be held for environmental education researchers in the region.

Recommendation 5: IGES establish and coordinate small scale collaborative research projects that encourage and support emerging researchers in environmental education in the region.

References

CSD (1998) Report of Special Session on Environmental Education, Commission for Sustainable Development, New York.

UNCED (1992) "Promoting Education and Public Awareness and Training", *Agenda 21*, United Nations Conference on Environment and Development, Conches, Ch. 36.

UNESCO (1996) *Celebrating Diversity, Cultivating Development, Creating our Future Together: UNESCO in Asia and the Pacific*, UNESCO, Bangkok.

UNESCO (1997a) *Educating for a Sustainable Future: A Transdisciplinary Vision for Concerted Action*, Discussion paper prepared for International Conference, Thessaloniki.

UNESCO (1997b) *Educational Innovation for Sustainable Development*, Proceedings of the Third UNESCO-ACEID International Conference, Principal Regional Office for Asia and the Pacific, Bangkok.

UNESCO-ACEID and Griffith University (1994) *Final Report of the Planning Group Meeting for the UNESCO-ACEID Project, Learning for a Sustainable Environment - Innovations in Teacher Education*. Brisbane: Griffith University.

UNESCO-UNEP (1990) "Environmentally Educated Teachers: The Priority of Priorities", *Connect*, Vol. XV, No. 1, 1-3.

Wilke, R.J., Peyton, R.B. and Hungerford, H.R. (1987) *Strategies for the Training of Teachers in Environmental Education*, UNESCO-UNEP International Environmental Education Programme, Environmental Education Series No. 25, Paris: UNESCO Division of Science, Technical and Environmental Education.

World Commission on Environment and Development (1987) *Our Common Future*. Oxford University Press, Oxford.

APPROACH AND METHODOLOGY OF ENVIRONMENTAL EDUCATION ADOPTED IN ASIA PACIFIC REGION

Bing HAO

**Environmental Education Center,
Beijing Normal University, Beijing, China**

INTRODUCTION

Change and development in the twentieth century have brought many social and economic benefits to the people and nations of Asian region. In China, you can feel the dramatic change from the history of every town and every individual person. However, these changes have also affect the environment in both certain and uncertain way. Overcoming these environmental problems depends on collaboration between science, technology, legislation, and economics. Many of these solutions depend on education. From Brundtland Report (1987) to Agenda 21(1992), education had been identified as a critical factor. In the Asia-Pacific area countries have adopted arrange of strategies for implementing programs in environmental education. In this paper, the approach and methodology of environmental education is discussed according to the experiences of China. In personal view, I thought the discussion on this topic has unique meaning at this time that we are after economic crisis cross eastern Asia and before the coming of 2000 year.

STRATEGIC APPROACHES FOR IMPLEMENTING ENVIRONMENTAL EDUCATION IN ASIA-PACIFIC REGION

Learning for sustainable development -Teacher education and environmental education in Asia-Pacific region is a project carried out by UNESCO-APEID. Five aspects were identified as main developments in supporting environmental education in its report in 1996, which are government policy, teacher training, NGOs and media. The first four strategies should be developed on the basis of these five aspects when we are considering adopting environmental education in Asia-Pacific region. The last three ones is based on the local situation of in Asia-Pacific region.

1. Developing government policy, especially educational policy to support EE

Thinking globally and acting locally is a well-known slogan. In the reality, acting locally depends on the local government. Comparing with western country, people in Asia Pacific tend to more believe in the authority. So the strong support from government are very important for EE. But now in China, many initiatives to promote environmental education came from Ministry of Environment rather than Ministry of Education. The lack of strong involvement from government has tended to marginalise environmental education from mainstream education and lack of coherent plan for progression from kindergarten to college level. The regional experiences will benefit individual country to develop its own policy. The content will be various from one to another, but the framework can be similar.

2. Involving more NGOs to support EE

A number NGOs are playing very active role in EE. For example, in China international NGOs like WWF, IUCN, local NGOs like Friends of Nature all take environmental education as an important part in their view. I guess similar situation happened in other countries. The EE activities can be very flexible. They can cooperate with educational institution to develop EE project in formal educational section. WWF, Ministry of Education and BP launched Environmental Educators Initiative in three Normal Universities and 24 primary schools in China which transfer the idea and teaching method of EE effectively. Friends of Nature joined with Shell developed “beauty and cleaning” project, which focus on outside activities in primary school and secondary school. Beside these, the NGOs can support EE in a numbers ways include technical, resources, consultancy, personnel, policy making and resource centers.

3. Developing teacher training program for EE in both in-service and pre-service level

Lacking of qualified teachers is almost the problem facing environmental education in every country. It is due to many reasons. There is dearth of qualified for environmental education; There is lack of model programs for teacher training which could be used as a basis for curriculum development in that area; There are inadequate and insufficient resource materials in environmental education which could be used for training for teachers. But in general, it is due to lacking of awareness and support from administrators in education institution. So the teacher-training program should be the starting point for environmental education in the formal educational system.

4. Taking media as a powerful tool for environmental education

The media has served to raise the profile of environmental education among teachers and students in many countries. Friends of Nature has made the survey on the environmental awareness of Chinese newspaper since 1994. It indicated the media has raising environmental awareness gradually. Through the media including TV, radio, newspaper and so on, public get to understand the real environmental issues. The report of media on environmental issues can be vivid materials and resources for teaching of environmental education. In Pakistan, a TV series has been developed to increase environmental awareness. Similarly, in the Republic of Korea, the Educational Broadcasting system has been running a TV and radio series relating teacher education in environmental education as a regular program nation-wide. In China, a distant environmental education program was developed for teacher training.

5. Using Internet to promoting the method of environmental education

In 1995, very few people know the term of INTERNET in China. Today, every university student can have email address if he wants. The development of information technology include Internet will bring the reform of education, it is same to environmental education. There many websites are relevant to environmental issues and ethics. People can get the information easily and quickly from Internet. People with different values can discuss the same issue freely just by sitting in the front of a computer. So the Internet can be an open classroom for every one, we can use it for environmental education. GOLBE is a good example according to this point.

6. Strengthening the understanding on environmental economic

Environmental education can not be isolated. A society won't put it in the priority position all the time. So environmental educators should have deep understanding on the relation between the environmental education and economic situation. I have been to several places in the very poor area in China. In these places, the basic need is food. Also, people who disagree environmental education said environmental education based on rather emotion than certain facts, without knowledge of economics at all. From my experience, I agree this point partly. So in order to promote environmental education effectively, we should strengthen the understanding on environmental education.

7. Developing the regional environmental education plan according to the international experiences and local situation

Many contents of environmental education are global. Western country

developed environmental education earlier than eastern country since they faced environmental problems earlier. Through international projects and other approaches, the idea and methodology of EE was introduced to Asia-Pacific countries. For example, China has opportunity to exchange more with UK than with other countries since 1990s. It was effect quite strongly by UK from the theory to teaching strategies. It is an opportunity to regard environmental education and educational reform as a vehicle for each other. But it is also necessary to overcome the culture shock because these two countries have different educational system, different life style and different view on the world.

Method should be used to carry out environmental education project according to the above strategies

According to the above strategies, the following methods can be adopted:

1. Holding regional conference regularly, including the forum of government and non-government organizations
2. Setting up a Asia-Pacific video center to support EE
3. Developing Asia-Pacific homepage of EE on the Internet.
4. Organizing a research team to study the environment education and economic situation in Asia-Pacific region.
5. Developing international projects to promote the development of environmental education in the region.

APPROACH AND METHODOLOGY OF ENVIRONMENTAL EDUCATION ADOPTED IN THE ASIAN-PACIFIC AREA

Hyung-Shin KANG

Environmental Education Division, Korea

1. INTRODUCTION

The Asia-Pacific area has shown the rapidest economic development in the world, and now is thought to be the symbol of development and richness as the central axis of the world in the near future. The Asian-Pacific area, however, has the serious environmental problems such as air pollution, ocean pollution, and destruction of ecosystem in its inside. These problems are not only deteriorating the quality of life of residents in Asian-Pacific area but also influencing the environment in the global level.

In addition, the Asian-Pacific area has contributed the most to the environmental pollution in the global level including the green house effect and also is responsible for reducing it. As revealed in "Emerging Asia" recently published by the Asia Development Bank, the environmental problem in Asia has become one of the factors which block the economic development in Asia. Among the top 15 cities polluted the most in the world are 13 Asian cities.

In order to settle these environmental problems fundamentally and develop sustainably in the 21st century, people should change their behavior pattern pro-environmentally through environmental education. Till now the environmental education has been carried out in the level of recognition on environment. But the environmental education in the future needs to establish the strategies and driving plans so that every citizen may be interested in environment, understand it fully, suggest practical plans, and carry out those plans spontaneously.

2. THE BASIC STRATEGIES

2.1. Creating a spiritual culture should be considered. The industrial civilization has brought about an abundance of goods and services for humankind, but also an obsession of materialism and a distortion of human values. These adverse effects on society have reached a critical threshold. We must act now to find the proper balance between materialistic pursuits and the need for spiritual fulfillment, in order to embrace life more fully.

In the Oriental culture, human being and nature composes one unit by depending upon each other. This kind of collective thoughts on human being and nature can be a clue to overcome the environmental crisis.

Whereas the thought that science and technology can settle the environmental problems has a possibility of aggravating them. Therefore, a philosophy on environmental education to understand a value on the nature-friend life style should be established with a basis of the Oriental culture.

2.2. We need to exchange the information and data concerning the Oriental characteristics within the Asian countries. By sharing this information with each country, our Asian countries will be able to recognize with partnership and organize the network on the Asian countries' environment, and thus we should research into the plans for the environmental education in cooperation with other Asian countries, and we should make efforts to make environmental materials together with Asian countries.

2.3. The NGOs have importance in their roles. The environmental problems at present cannot be settled only by public institutions such as government and local autonomous organizations. The cooperative efforts through the partnership among various groups including citizens, enterprises, NGOs, and so on are needed to settle the environmental problems. The NGOs do not cause rejection from the citizens and can change the thoughts and behavior of people into pro-environmental ones very effectively. We need to activate the environmental education camps for youth hosted by the NGOs so that those camps can be connected to other countries' camps for youth.

3. METHODS FOR ACTION

In this chapter, the international cooperation projects that have been driven in Korea concerning environmental education are reviewed and the development of these projects and their improvements are studied.

3.1. The Seoul Declaration on Environmental Ethics

In the event for 'The World Environment Day' which was held in June 1997, about 400 experts from 50 countries participated and agreed to cooperate to make environmental issues stand out. And conference of the members of Asia-Pacific countries' parliaments was also held on the environment and its development with foci upon the ESSD and the transfer of techniques for environmental preservation.

In this event, the seminar on the environment and ethics whose chairperson was E. Dowdeswell, the secretary-general of UNEP, was held to adopt "Seoul Declaration on Environmental Ethics". Seoul Declaration

emphasized ethics in order to establish an evolving framework of ideals, principles, and guidelines to sustain life on earth. In order to enhance the quality of life and to avoid wholesale ecological destruction, a deeper understanding of life and the formulation of a new system of environmental ethics are required. Seoul Declaration adopted 27 guidelines for Action including environmental education.

Environmental education was included in the guidelines for action; Education, especially from an early stage, has a significant effect on how people form attitudes toward the environment, and is thus crucial. Educational programs designed to enhance awareness of environmental issues and ethics must be developed to enhance awareness of environmental issues and ethics and those programs must be developed and applied at all levels of society through all available practical means. Government should make special efforts to financially support such educational programs.

The guideline for NGOs was also emphasized: An important role of NGOs is to heighten public awareness by organizing and maintaining environmental instructions for guidance. NGOs must amplify their efforts to educate and train individuals, organizations, and public officials so that the message of conserving the Whole-Life-System can be spread through multiple channels. In addition, NGOs must take initiatives by way of various projects and clean-up activities to protect and improve the environment.

3.2 Acting plans for practice of sustainable production and consumption

The 5th high-level talks for cleaner production were held by the co-host of the Korean government and the UN Environment Plan in Pyongchang, Korea in September 1998. In this conference where 250 people from 48 countries such as UNEP and NGOs, the following were discussed: the plans for increasing transfer of cleaning techniques among countries and the practical strategies for promoting information exchange among countries. The ten-year old cleaner production program which UNEP has driven actively was settled and 'the International Declaration on Cleaner Production' was adopted. It can be said that international system for cooperation was firmly established.

Among the Declaration were included the following: as plans for practice for sustainable production and consumption, the cleaner production or other preventive strategies should be considered first, and for these strategies proper means for practice should be developed, be financially supported and be practiced. To do this, the persons concerned should increase their cooperation and make efforts so that sustainable production and consumption can be made. Also, they should develop and practice programs for informing, educating, and training the cleaner production, and introduce the concept and principle of cleaner production to all levels of curricula.

Also, an international experts' conference on sustainable consumption pattern was held in Cheju Island in January to discuss the plans for practice in the aspect of consumption. In the Cheju Initiative, it was decided that governments would take measures to increase sustainable consumption and respect consumers' selection and cultural variety, to perform environmental education and introduce economic means.

The realization of sustainable-production and that of a sustainable-consumption are inseparably closely related. For environment-friendly consumption, cleaner production should precede. In order to promote to produce environment-friendly products, the consumption pattern should be changed into an environmentally sound pattern. As in the above, changing the pattern of production and consumption fundamentally in the environmental aspect is the task for all mankind to be interested in for settlement of global environmental problems.

Especially, the plans for increasing sustainable consumption on the basis of traditional life style were discussed. Also, it was discussed if traditional life style such as the cooperative way of thinking, harmony with nature, mutual help, thrift and saving, family relationship based on the Confucianism and Buddhism in the Asian countries could be a useful way to achieve sustainable consumption.

3.3 The activities of NGOs for EE

3.3.1 There are about 400 environmental NGOs in Korea. Among them, Green Family (Green Family Movement Association), which was established in 1994, puts its focus on the environmental education for youth mainly with activities of Green Boys (8,800 students and 310 teachers). Especially, Green Family hold a Global Youth Forum in partnership with UNEP. 240 environmental young people and teachers from 36 foreign countries participated in the forum which was held in Chamshil, Seoul, for 6 days. In this forum, the plans for practice for the 21st century's environmental preservation of all youth of the world were established and their environmental activities were checked. Green Family holds the environmental camp for youth twice every summer vacation. In 1999, it has organized an international youth group for preventing land from being desert and established a plan to participate in the forestation project in China, and now is driving the plan.

3.3.2 The Korea Environmental Education Association has prepared a theoretical basis for the environmental education in Korea since 1987. In 1997, it holds an international seminar on environmental education concerning "ESSD and environmental education". A number of experts from the US, Japan, Australia, India, Green Peace, etc. participated in the seminar and discussed the conditions of environmental education in each country, a local subject 21,

and the strategies for sustainable use of DMZ (Demilitarized Zone) in Korea.

3.3.3 Since 1996, in partnership with UNDP, the UNESCO Committee in Korea has developed new environmental education programs which connect environmental problems with sustainable human development through local organizations' activities. The UNESCO Committee in Korea performed and tested those educational programs with 40 major local organizations or so. With this process, the committee developed "The Guidance for Environmental Education for Local Organizations" and distributed the copies to domestic and foreign organizations, Government and local governments, NGOs, and schools.

3.4 Development of environmental education network

The fact that the environmental problems are not a local problem but a global problem supports the necessity that the network for exchange of environmental education programs should be organized and operated. In each conference on environmental education, the necessity of organizing networks is emphasized. With these efforts, various kinds of international and local networks concerning environmental education has been being organized and operated.

Especially, with the development of communication technology and the distribution of personal computers the necessity of cyber environmental educational networks is more emphasized than ever.

Now in 1999 in Korea a "Cyber Environmental Education Program" is being developed with a fund of 840,000,000 won (about US\$ 700,000) in order to enhance the quality of education by providing remote education of the learning system which was designed and developed by experts. In this institute, students can experience on the spot the domain of investigation in the environmental curriculum (experiments, observation, measurements, etc.) and the effects of environmental pollution, which will become known only in a long time, by simulation through the cyber experience learning systems and they can have the similar effect to the real experience. In addition, this institute will provide comprehensive service which students can share the environmental information in the Ministry of Environment, the National Institution for Environmental Research, the Korea Environment Institute, universities and NGOs, etc.

3.5 The organization of the network for environmental cooperation

The North-East Asian countries which are geographically and environmentally closely related have in common environmental problems such as acid rain, long distance air pollution like sandy dust phenomena, ocean

pollution in the Yellow Sea. Thus the five North-East Asian countries (Korea, China, Japan, Mongolia, and Russia) have planned to settle the common environmental problems among the countries through the network by organizing the 'North-East Asian Conference on Environmental Cooperation' since 1992. In October 1998, those countries hold the 7th Conference in Cheju Island in Korea and discussed migratory tide, protection of habitats, management of underground water, developing sustainable indicators, and management of poisonous air pollutants. In this conference, the participants agreed to establish a Cabinet meeting of the North-East Asian countries.

According to this agreement, Korea, China, and Japan hold a Cabinet meeting in January in 1999 and agreed to reinforced the cooperation between the countries on the following: ascertainment of cooperative way of thinking, activation of information exchange, prevention of air pollution, preservation of oceanic environment, cooperation of environmental techniques and research, and cooperation in global environmental problems.

4. CONCLUSION AND RECOMMENDATIONS

Nowadays environmental problems have been local and at the same time global problems. The global environmental problems such as destruction of ozone layers, green house effect, and destruction of ecosystem, and the local environmental problems such as ocean pollution and long distance movement of air pollutants have been more serious.

With rapid economic development, the Asian-Pacific area where more than half of the world population live has met with the condition that the Asian-Pacific countries should improve their environment. The importance of environmental education is being emphasized more than ever in order to fundamentally settle environmental problems within the area, so cooperation should made among nations within the area.

The environmental education is not the one that can be only dealt with in the regular subjects. As the environmental problems are not local ones but all mankind's problems, the international networks for exchanging environmental education programs should be necessarily organized and kept for effective environmental education.

With regard to this view, several countries such as Japan have made efforts to develop the environmental education in the Asia-Pacific area. Especially, in 1996 Eco-Asia proposed 'The Asian Conference for Junior Eco Club' and conferences concerning this were held twice in Nigata and Shizoka in Japan. Also, according to Common Agenda which is an agreement for environmental cooperation between the US and Japan, 'The Asian-Pacific Seminar on Environmental Education' co-hosted by the Japanese Government,

UNESCO, and the Center for Environmental Education Reformation were held in Japan in March and December of 1998. The representatives from 13 countries including the US, the Republic of Korea, Australia, and China participated in this seminar and discussed environmental education. This discussion was evaluated to be very desirable for the development of environmental education in the Asia-Pacific area.

I wish with these efforts the ideals of environmental education based on the characteristics of environmental problems in the Asia-Pacific area and the Oriental thoughts on values will get firmly fixed. In order to spread this ideal, the network for environmental education in which all the groups take part such as local governments and NGOs should be organized. And at the same time sustainable development in the Asia-Pacific area should be made through every kind of project.

Approach and methodology of environmental education adopted in the Asia-PACIFIC: The Wetlands International-Asia Pacific (WIAP) experience

Murugadas T. LOGNATHAN

WETLANDS INTERNATIONAL, ASIA PACIFIC-MALAYSIA PROGRAM

Introduction

Since the creation of Wetlands International in 1995 and subsequent formation of the three regional offices, a number of important, innovative international initiatives, projects and programmes have been undertaken. The Asia-Pacific regional office established in Kuala Lumpur, Malaysia supports a number of country programmes, namely in Cambodia, China, India, Indonesia, Japan, Malaysia, Thailand and Australia.

The Asia-Pacific region, ranging from high arctic to deep tropical climatic zones, displays the full global array of wetland types; from inland river systems, lakes, marshes, and peatlands to estuaries, coastal lagoons, mangroves, and coral reefs. It is a region of diverse cultures and history, having the broadest range of economic social, linguistic, and political conditions to be found in the world, as well as the highest human population of the three Wetlands International regions.

Wetlands are widespread throughout most of the region and are of immense value to its people and vital to its diverse wildlife. Ancient civilisations originated around wetlands, and the latter still provide vital goods and services to people throughout the region. Despite these benefits, increasing pressure on land, water, and wildlife from urbanisation, drainage and other hydraulic works, agricultural intensification, over-harvesting, pollution, and other activities, have drastically damaged and reduced the wetland resources. Estimates from many countries suggest that during the last 100 years, more than 50% of the original wetland area has been lost, with figures much higher than this certain wetland types and countries. The lost opportunity for sustainable development is incalculable, and the priority must be to manage the remaining wetlands in a sustainable way, and to restore some of those that have been lost. Therefore EE will contribute to those purposes.

Development of wetland awareness and education materials IN THE ASIA-PACIFIC REGION - WIAP EXPERIENCE

Recognising the importance of wetland education to the society at large, WIAP has included EE related matters in their guiding principles as follows :

- Capacity building - to channel resources and know-how from countries and agencies that have them, to countries or agencies that do not.
- Quality information - high-quality information as the basis for all priority setting and decision-making on the conservation and management of wetlands and wetland species.
- Raise awareness - through education, information and awareness programs

The need for educating people about the deteriorating environment situation and for its conservation is perhaps more urgent than ever before. EE programs in the Asia-Pacific region are at various levels of development as observed in the number of projects carried out by WIAP in this region. A number of implemented/being implemented conservation projects here requires fair amount of stakeholders analysis, which obviously requires information put forward to different target groups. Stakeholders in a project area may range from government officials right up to local/native people. EE driven activities is far more greater in countries like Cambodia, Thailand, India and Japan as far as WIAP are concerned largely due to higher dependence of local communities for livelihood to the adjacent wetlands in these countries. Moreover, there is a paradigm shift in how a conservation project funded by international donors are carried out nowadays. A shift which requires project goal to strictly include community participation in course of the project, a requirement for international donors such as GEF and DANCED. In order to provide an avenue for community participation through the project, a number of EE driven activities need to be carried out, namely dissemination of information, wetland awareness programs, alternative livelihood campaigns and training courses. It short this known as Community based Environmental Education (CBEE). This is very prevalent in wetland projects in Cambodia, Thailand, India, Indonesia and Malaysia. CBEE is an EE program which uses the community and its resources (human, biotic and abiotic factors). It maximises the use of the local environment and local resource person in the learning process. A good example of CBEE has been formulated at the Danau Sentarum Wildlife Reserve, Indonesia.

However, on the whole, large amount of the fund is used for ecological surveys therefore limiting funds for EE driven programs within a conservation project in wetlands. Trends are changing nowadays in the region where the significance of EE in wetlands associated matters is gaining importance although not as a sole entity in many cases throughout the region.

Successful partnership of EE in Asia-Pacific region RELATING TO WETLANDS

WIAP believes that in every country conservation and management of wetlands and wetland species can be achieved only through a co-ordinated, co-operative approach involving all levels of government, the private sector and the public. Global partnerships can be formed between governmental and non-governmental organisations, and intra-governmental and international conventions as this type of partnerships provides expertise through its specialist groups and networks, and to target such expertise to areas of need, through program and project activities. Within WIAP, large number of conservation and biodiversity projects attain global partnerships through networking with international donors such as World Bank, DANCED, GEF, McArthur Foundation, WWF, Darwin Initiative, ILEC, Dutch Embassy and etc. This type of partnership is very secured as all these organisations are sound in environmental issues therefore self-interest is not a party to the partnership. This kind of partnership can be categorised into few types :

1. Category one where partnership is formed between a/more funding agency and a/more implementing agency whereby the funding agency only provides the funds. Implementation lies solely on the other counterpart.
2. Category two where partnership is formed between a/more funding agency and a/more implementing agency whereby funding is shared between the funding agency and implementing agency
3. Category three where partnership is formed between a/more funding agency and a/more implementing agency whereby the funding agency provides funds as well as technical assistance to the project
4. Category four where partnership is formed between a/more funding agency and a/more implementing agency whereby instead of providing funds, the agency provides project technical assistance including staffs and experts to the project with the incurring cost taken care by that agency.

As mentioned earlier none of the partnerships formulated through WIAP since its formation in 1995 looked into EE solely, however, EE has been a small component of most of the wetland conservation or rehabilitation projects in the Asia-Pacific region.

Another form of partnership which had EE inputs written all over it was formed in Malaysia in 1996 between two corporate companies and WIAP-MP. The end product was an article on wetlands officially known as Wetland Wonders in a local English daily. The article has been appearing once every month without fail since the partnership was formed back in 1996. The Hong

Kong Bank Malaysia Office provided the funds while the News Straits Times provided the free space in the paper. WIAP-MP contributes the article on various wetland issues. Not many companies in Malaysia are involved in such programs related to creating awareness among Malaysians. Therefore, the funder will be seen to be doing something for wetlands and this will provide media exposure and positive publicity. Tie-up with many levels of society will endorse the funders efforts in the long run. Other related awareness and information efforts with an EE theme were also sponsored by the same bank. Those were :

- Save the turtle campaign
- Save the corals campaign
- Teaching kit for marine environment

Local partners for these efforts were the Fisheries Department Malaysia (a government body), WWF Malaysia (NGO) and Malaysian Society for Marine Sciences (NGO).

Strategic approaches and methods to enhance and implement EE projects as global partnership in the Asia-Pacific region

A. Institutional set-up. Firstly, the organisational set-up for EE need to be established in each country before proposing/committing to a EE partnership.

The set-up may follow the following steps:

1. Government of the respective countries need to address the importance of EE
2. To form a National Working Committee in the respective country on EE, which will include members from the government, institution of higher learning, private sectors, corporate sectors, NGOs and members of the public. Presumably this committee must be chaired by a ministry, namely Ministry of Education or Ministry of Environment. Subsequently, a Technical Working Committee need to be activated to steer the working committee.
3. Establish National EE Association
4. Form National EE Council
5. Formulate National EE Plan

B. Focal point. Global partnership would benefit a country better if a proper focal point was established in each country rather than depending on individuals or independent organisation to form the counterpart. Government

need to be involved all through a proposed partnership program as it directly involves the education sector. Partnership would more fruitful or appealing to counterparts if respective government take the lead rather than other groups. By experience, a number of conservation projects in Asia-Pacific region have run into problems as government were not consulted and involved during the prephase.

C. Co-financing. Partnership will be more appealing to the donors if interested government can promise co-financing for a EE program in the country. By co-financing, commitment of government is secured towards the success of the proposed program and this may well be a selling point to international donors. By experience a number of global partnerships in environmental conservation works requires co-financing from the respective countries in order to secure financial assistance.

D. Local commitment. Partnership would also be appealing to international donors for EE programs if local government can promise continuity of program using local funds after completion of program period, therefore suggesting governments commitment towards the project

E. Support group. Government led EE programs must be ably supported by local mass media and NGOs, suggesting to global partners that there is synergy between different group of people in the respective countries therefore more ideas and activities can be implemented.

F. Acheivements. Partners need to be convinced that ultimately establishing EE in a country will lead to the following achievements :

Targets for formal EE programs:

- To develop EE course curriculum
- To establish infrastructure: EE training institutions and human resources
- To emphasise that institution of higher learning make EE compulsory for all students
- To train teachers to teach EE
- To build teaching resources
- To establish and expand EE Nature Clubs
- To carry out research and evaluation of EE programs
- Systematised planning included activities to establish inter-agency steering committees at province or state levels

- To conduct regular workshops on EE
- Activities for resource materials made available so as to carry out need assessment
- To establish EE resource material focal point
- To build up capacity in desktop publishing
- To promote EE via mass and electronic media (multimedia)

Targets for non-formal EE programs:

- EE camps and campaigns
- EE theme competitions
- EE talks
- EE exhibitions

G. Community based EE. Community based EE programs are gaining importance in the region as (for example in wetlands: the concentration of local people residing in this areas are great in the Asia-Pacific region) this sort of EE is based on the use of local environment and local resource person in the learning process, which may appeal to global partners because:

- The approach will help students to acquire better knowledge and understanding of their environment and help them to implement their knowledge and skills in daily lives.
- The use of local resource person will help student to acquire local and traditional knowledge and skills which are usually important for their future lives, but are not taught in schools.
- The program is important in remote areas where most of the students are unable to obtain further education, and usually have a high drop out rate therefore this community based EE program provide a strong base for these kids, equipping them with the necessary knowledge, skills and attitude for working life as well as nurturing their respect for the environment.

A methodology that has been used to formulate a community based EE in Danau Sentarum, Indonesia which comprised several phases :

1. Compilation of baseline data of the site (biological, socio-economic, conservation aspect etc.)
2. Problem identification workshop

3. Production of draft of information sheets for teachers, student and the general public
4. Teacher training in EE and the development of teaching materials
5. Final production of EE module
6. Implementation of the EE module
7. Evaluation

Community based EE has its impetus:

- Prospects of community participation in environmental related project so that the philosophy of the project would be sustained even when the project has completed.
- Since most community leaders are often well respected by local folks, it is therefore important to establish a network with these leaders which would ultimately formed an important link or catalysts for local community participation.
- Therefore this sort of program would likely not fail in the long run and may interest serious global partnerships.

H. Information exchange. Global partnership can also be formed if more countries channel their EE resources and know-how to countries or agencies who do not possess it, therefore saving some implementation costs.

I. Strong networking group. Partners would prefer counterparts with strong existing networks therefore linked with specialist groups on EE. For example WIAP possesses strong networks for both local and international specialists.

Conclusion

The Rio Declaration on Environment and Development reaffirm that all countries should establish a new and equitable global partnership through the creation of new levels of cooperation among the states, key sectors of societies and people. Environmental issues are best handled with the participation of all concerned citizens, at the relevant level. For the Asia-Pacific region though the EE concept is relatively new, however in-roads have been made in many aspects using both the locally sourced efforts and through global partnerships.

References

Anon. 1998. Internal documents. Wetlands International-Asia Pacific.

Anon.1998. Community based EE: a case in Danau Sentarum Wildlife Reserve, Wetlands International-Asia Pacific-Indonesia Program

Pan Khang Aun & Lim Boo Liat. 1997. Proceeding of the First National Workshop on Environmental Education: Strengthening Development of Environmental Education in Malaysia, pp. 156

POLICIES AND TRENDS IN ENVIRONMENTAL EDUCATION -NATIONALLY AND INTERNATIONALLY

Ginger KEHO

**Office of Environmental Education
Environmental Protection Agency, U.S.A**

INTRODUCTION

In 1990, the Congress of the United States passed the National Environmental Education Act (the Act) in response to the growing need to provide the citizens-youth and adults-with the knowledge and skills they must have to become active participants in the protection of human health and the environment. Passage of the Act has signaled an increase in the quality and quantity of environmental education activities, materials and programs at the national, state, and community levels, as well as internationally. This article will describe major national and state-level environmental education efforts and outline an international environmental education program called TEEM-Training and Environmental Education Materials (formerly EE-TIPs). Environmental Education in the Asia-Pacific Region will also be discussed.

PART 1 THE NATIONAL FOCUS ON ENVIRONMENTAL EDUCATION

Environmental Education (EE) in the United States continues to be a diverse and evolving field, receiving more attention at the national, state and community levels, in the U.S. Congress and internationally. More partnerships are being developed between the federal government, state education and environmental offices, and leading non-profit and non-governmental environmental education organizations, as well as between federal agencies. The emphasis is on supporting existing high quality programs and materials and building capacity in states to develop and disseminate environmental education as it relates to each state's education mandate. Additionally, emphasis is being placed on developing and implementing a national EE research agenda to provide data on the impact of environmental education on achieving environmental protection goals.

The National Environmental Education Act defines a leadership role for the U.S. Environmental Protection Agency (EPA) among federal agencies in implementing the law and building upon long-standing efforts undertaken

by local education institutions, state agencies, non-profit educational and environmental organizations, federal agencies, and the private sector. To meet these challenges, EPA established the Office of Environmental Education (OEE) in the Office of the Administrator of EPA to meet the goal of the Act-to increase public understanding of environmental issues and to advance, support and develop environmental education and training. The following represent national programs established in compliance with the Act:

National Environmental Education and Training Program

In September 1995, the EPA and the North American Association for Environmental Education (NAAEE) signed a cooperative agreement to undertake a five-year national project to deliver training and related support services to education professionals. (This agreement follows and builds upon a three-year agreement with the University of Michigan, which formed the National Consortium for Environmental Education and Training.) NAAEE formed the Environmental Education and Training Partnership (EETAP) with funding provided by EPA under the Act. EETAP is a consortium of nine (9) partner institutions that work together to design, implement, and evaluate the project's training objectives. EETAP is focusing on six (6) core themes which cut across all programmatic areas and partners. The core themes include:

- Building State-level Capacity for Environmental Education
- Linking Environmental Education and Education Reform
- Increasing Diversity in Environmental Education
- Enhancing Environmental Education Quality
- Using Communication Technology to Disseminate EE Resources and Information, and Building Networks
- Promoting Synergy

EETAP is designed to increase the total number of education professionals trained in EE each year. EETAP is also strengthening support systems that education professionals need to conduct high quality education in formal and nonformal settings throughout the U.S. EETAP is accomplishing its goals by augmenting and enhancing existing quality training efforts for both formal and nonformal education professionals; identifying, evaluating, and disseminating information on superior educational materials and teaching methods; strengthening local capacity for environmental education at the state level; and expanding partnerships and networks. As in all good environmental education, EETAP does not advocate a particular viewpoint or course of action

with respect to environmental issues. EETAP seeks to increase the ability of education professionals to help their students and the public develop awareness and knowledge about environmental issues, acquire critical thinking skills and enhance other skills necessary to the decision-making process. Major projects/accomplishments under EETAP to date include:

- **Over 100,000 formal and nonformal education professionals trained in EE**

- **The National Project for Excellence in Environmental Education**-a multi-year program designed to identify and provide examples of high quality environmental education practices. The Project is focusing on four (4) interrelated efforts:

- **“Environmental Education Materials: Guidelines for Excellence”**, a set of recommendations for developing and selecting environmental education materials. These guidelines are designed to help developers of activity guides, lesson plans, and other instructional materials produce high quality products and to provide educators with a tool to evaluate the wide array of available environmental education materials (1996)

- **“The Environmental Education Collection: A Review of Resources for Educators**, background information and reviews of some of the most widely available environmental education materials (1997)

- **“Excellence in Environmental Education: Guidelines for Learning (K-12)**, benchmarks for educators on what students should know about the environment at certain grade levels; information on how to use EE as a means for meeting standards set for mathematics, science and social studies; and information on how to assess student academic achievement (1999)

Development of a set of guidelines for the preparation of teachers and other environmental educators (Fall, 1999)

- **National Environmental Education Advancement Project (NEEAP)** -assists states and communities working toward the full incorporation of environmental education into K-12 schools and nonformal education efforts. Currently, NEEAP provides financial support to twelve (12) states in their development of state-wide environmental education strategic plans and provides informational services to an additional 14 states. NEEAP sponsors Leadership Clinics that focus on state capacity building for environmental education by providing training sessions, networking opportunities, and time and structure for strategic planning to state participants.

- **Urban Leadership Collaboratives (ULC)**-program that focuses on working with local community-based organizations that provide the grassroots

foundation to enhance and complement state and national training efforts. ULC's target issues of particular interest to local communities, often with a focus on public health, reaching low income and culturally diverse populations, and other environmental issues like hazardous waste disposal, etc. To date, eight (8) ULC's have been funded.

● **EE/Ed Reform Web Site (<http://www.edgateway.net>)**, a new web site designed to support the integration of environmental education and education reform. This site complements another web site called EE-Link (<http://eelink.net/>), funded under this program, which provides environmental education information and resources to educate professionals.

Environmental Education Grants Program

Another program designed to support environmental education at the national, state, and community levels is the **Environmental Education Grants Program**. Administered by EPA in Washington, DC and its ten (10) Regional Offices around the country, this program provides financial support in the form of grants to education institutions, environmental and educational public agencies, and non-profit organizations in the U.S. in support of EE projects. Twenty five percent (25%) of the awarded grants are for \$5000 or less, with \$250,000 being the maximum amount awarded to an organization in one year. All proposals must satisfy one or more of the following EPA educational priorities:

- **Health**-educating teachers, students, parents, community leaders, and the general public about human health threats from environmental pollution, especially as it affects children
- **Capacity Building and Education Reform**-increasing state, local or tribal capacity to develop and deliver coordinated EE programs and utilizing EE as a catalyst to advance state, local, or tribal education reform and scholastic improvement goals
- **Education Research**-research that measures the impact of environmental education on reaching environmental protection goals
- **Community Issues**-designing and implementing model projects to educate the public about environmental issues in their communities through community-based organizations
- **Improving Teaching Skills**-educating teachers, faculty or nonformal educators about environmental issues to improve their environmental education teaching skills
- **Career Development**-educating students in formal and nonformal settings

about environmental issues to encourage environmental careers

- **Environmental Justice**-educating low income or culturally diverse audiences about environmental issues thereby advancing environmental protection equity for all citizens

Since 1992, EPA has awarded over **1500 grants totaling \$20M**, representing projects from all fifty (50) states and every U. S. Territory.

Discussion

A key characteristic that all these programs and similar environmental education efforts share is that they are all working in association with other well respected national, state and community level partners. Bissel, Hilliard, et al (1997) have suggested that successful EE embody specific characteristics including:

- A clearly articulated vision consistent with the fundamental principles of EE
- Are grounded in solid research and knowledge
- Can be readily evaluated against concrete objectives
- Are relevant to local needs
- Take a balanced approach to issues
- Are sustainable over the long term
- Consider implementation, including distribution, training, and support from the beginning

Successful environmental education organizations and programs embrace these characteristics-forming partnerships that leverage scarce resources and combine education specialists, scientists, and other environmental subject matter experts with policy and decision-makers.

As the field of environmental education continues to grow and evolve, the challenge of improving and measuring environmental literacy for youth and adults becomes critical to the continued support of EE nationally and internationally. We must be able to articulate “what difference has environmental education made” to financial supporters and policy makers. It is important to consult both educational theory and educational research as we move towards the goal of environmental education-environmental literacy (Volk and McBeth, 1997).

Research on environmental literacy in the United States suggests that

promising areas in environmental education include community investigations, citizen participation, and environmental studies/management courses (Volk and McBeth, 1997). EPA is focusing on:

- leadership in human health and environmental protection;
- leadership in environmental education;
- significantly increasing the quality and amount of environmental data and information available to the public to help in their decision-making processes and putting that data in context so that the public can understand the nature and significance of local environmental problems and;
- community-based environmental education.

More can and should be done to improve the field of environmental education and to increase the diversity of the target audiences. Greater links between the education and environmental communities must continue to be encouraged and actively sought out by all stakeholders. As EE becomes recognized and more visible as a fundamental tool for environmental protection, criticism will increase. Environmental education providers must continually renew their commitment to improving all aspects of environmental education and serve as champions for high quality environmental education within their organizations.

PART 2 EPA'S INTERNATIONAL ENVIRONMENTAL EDUCATION PROGRAM

-THE PRESENT

The Environmental Protection Agency has always been involved with environmental issues on a global scale. Scientific exchanges, conference participation, open dialogs and technical training has allowed EPA to keep in touch with the concerns other countries have about their local environmental and health problems, as well as the impacts of industrialized nations on their citizens and on less technologically advanced countries. EPA's expertise in legislation, regulation and enforcement has long been sought by the international community.

Most of EPA's international training and "education" assistance has been targeted to professionals dealing with environmental protection issues—scientists, engineers, lawyers, and government officials. In the past decade, hundreds of foreign environmental professionals have received training from EPA staff using Technical Information Packages or TIPs. The TIPs Program was developed to provide environmental professionals with information on

a large variety of environmental topic areas—from automobile emissions to waste water treatment options to writing and enforcing regulations.

However, this approach of training professionals rather than educating the public contributes to the expansion of an existing gap in basic environmental knowledge between the general public and trained professionals. To target the general international public and respond to the increase in requests from large numbers of other countries for environmental education, the TEEM Program was developed.

The Training and Environmental Education Materials (TEEM) Program

In its initial stages, TEEM was originally called the EE-TIPs project because it was modeled after the TIPs program. The purpose of EE-TIPs was to:

- Meet the many requests from foreign governments, organizations, and individuals for U.S. environmental education materials
- Disseminate more widely some of the best examples of environmental education materials
- Provide a low cost method of promoting and facilitating EE internationally
- Expand awareness of the importance of international EE
- Encourage U.S. organizations to share their experiences and materials with the international EE community

The lack of quality materials and trained personnel emerged as a critical need for the enhancement of EE internationally. In 1996, EPA and Peace Corps and the North American Association for Environmental Education (NAAEE) formed a partnership to enhance environmental education by compiling sets of EE materials; providing training in their use at in-country workshops; and utilizing in-country networks of education or training professionals to expand the concept country-wide. The process was eventually renamed TEEM to emphasize both the “team” approach to community-based environmental education and the “teeming” number of ideas, partnerships and networks that arise from the workshops. The goal of the TEEM Program is to build local capacity to provide education professionals with the knowledge, skills and abilities to develop and implement environmental education activities, materials and programs targeted to their specific environmental or health issues.

In essence, the TEEM Program works with in-country educators to identify their specific regional or national needs. An organizing committee

with members from the host country, EPA NAAEE and the Peace Corps will then identify the best EE materials available written by in-country authors and supplement those with the best U.S. materials. The organizing committee will then develop a training program in the use of these materials, based on an extensive training needs assessment conducted with the assistance of in-country Peace Corps staff (or another in-country professional network.). The training is designed using participant-driven methodology to ensure that the workshop addresses the needs of the group and uses the expertise and experiences of the participants. After the workshop, the participants (train-the-trainers) become their country's "organizing committee" to identify key EE providers, analyzing their needs and developing, implementing and evaluating a training program to meet those needs. In addition, they receive a TEEM box and are responsible for using and/or adapting the materials with future in-country work-shop participants.

To date, the TEEM Program has been successfully implemented in Eastern and Central Europe, Latin America, Mexico and the Caribbean. TEEM resources are being used by English language instructors in their classrooms, by park and natural forest-area professionals to develop EE programs for children and adults, and as mini-resource libraries.

PART 3 EPA'S INTERNATIONAL ENVIRONMENTAL EDUCATION PROGRAMS

-THE FUTURE

Since 1990, the requests for information and technical assistance from foreign countries interested in environmental education have significantly increased. Providing information and assistance for international audiences is managed by EPA's Office of International Activities with support and expertise from the Office of Environmental Education. Based on past experience, we know that the international EE community is looking for:

- relevant environmental education material
- teacher training programs
- programs directed towards adult learners
- increased access to environmental education materials, through the Internet if possible
- public awareness campaigns
- community-based curriculum programs

- effective strategies to involve community, government and local business leaders in environmental protection issues
- effective information dissemination strategies
- how to evaluate EE materials and how to adapt these materials to local environmental issues
- guidelines on what learners should know about the environment in order to be active participants in decision making

EPA can respond to these requests, but not alone. Partnerships with existing organizations with specific expertise would allow us to provide the appropriate assistance upon request. A comprehensive EE program that partners EPA with external environmental education expertise can provide more high quality EE than what EPA can on an ad hoc basis and takes advantage of existing resources and a broader range of EE expertise that exists in EPA alone. Additionally, neither EPA and/or any of its potential partners have the resources to provide for these request on a continual basis. Partnerships are essential to spread the cost of each request to the partners, other potential funders and the foreign country making the request.

The overarching goal of the international environmental education program (sometimes called the TEEM Program) is to increase environmental stewardship through environmental literacy. To achieve this goal, our international EE program must:

- increase understanding of human interaction with the environment
- increase motivation for environmentally responsible behavior
- increase critical thinking, problem solving, and decision-making skills
- increase citizen participation
- increase support for EE programs nationally and internationally
- institutionalize EE within EPA as a tool for protecting human health and the environment
- ensure that the program is consistent with EPA's goals for reducing global and trans-boundary environmental risks

To achieve these goals and objectives and successfully address the needs of each international requesting country, a "toolbox" of programs has been suggested. The Toolbox would provide a variety of options from which a foreign country may choose, depending on its needs and resources. The International Environmental Education Toolbox would contain the following

environmental education “tools”:

- **Needs Assessments** -used to identify and qualify current and/or projected needs of learners, teachers, programs, program supporters, organizations for professional and organizational growth and development
- **Opinion Polls and Knowledge Surveys** -used to assess the position, beliefs and values the public places on a particular issue
- **TEEM Resource Library** -a set of reference materials selected and evaluated by EE professionals that are tailored to meet the needs of the participating country
- **Community-based Curriculum Development** -a model designed to incorporate EE and student participation into the curriculum, emphasizing interactive teaching methods, sustainable development and student’s active participation in community issues
- **Environmental Issues Investigations** -an EE curriculum that involves students in the critical thinking processes associated with issue investigation, issues analysis, problem delineation, the identification of belief systems operating in issue situations and the use of primary and secondary sources in data collection
- **Teacher Training** -professional education opportunities for education professionals in formal and nonformal settings on how to develop and implement quality EE programs and materials.

Together these tools would form a comprehensive program designed to develop, increase or improve environmental education in a foreign country, but each tool could stand alone. This approach would allow each country maximum flexibility in selecting which tool or tools will serve their needs.

As of today, this program is a concept as yet unfulfilled. We see the need, but identifying the financial resources to provide any tool at any time it is requested has proven difficult in the current political climate of shrinking federal agency budgets here and economic difficulties in other countries. We know that what is needed is to promote this concept to potential funders and build upon the success achieved in delivering the TEEM Resource Library to date, but this requires more financial and human resources than currently exist.

Discussion

We know that the United States has a large variety of effective environmental education programs and an abundance of high quality

environmental education materials. We also recognize that the U.S. has some very ineffective EE programs and poor quality materials, but the field is addressing these issues. Environmental education in the United States suffers from a lack of adequate financial resources, inequitable access to EE programs and materials, little or no state-level infrastructure, no effective communication strategy for the field, and disagreement as to the definition of EE.

Not surprisingly, we see the same problems/issues in environmental education internationally. Lack of financial resources and access to materials are the problems most often cited by foreign visitors. Making generic recommendations for specific remedies for these problems is not possible given differences in culture, governments, education systems, etc. Each country or regions must look within to identify solutions to their unique set of problems. U.S. environmental education researchers, practitioners and policy makers can provide guidance, information, strategic planning expertise and a host of other assistance, but funding for such service is minimal. One avenue of opportunity would be in tapping international lending institutions as a funding source for sustainable development activities or working in partnership with in-country non-governmental organizations and private sector industries. Those environmental education programs that build local capacity clearly fit into the definition of sustainable activities. This however, is a daunting task given the complexities of international financial assistance.

PART 4 ENVIRONMENTAL EDUCATION IN THE ASIA-PACIFIC REGION

To date the U.S. Environmental Protection Agency has not done a great deal in environmental education in the Asia-Pacific Region. A large number of visitors representing countries in this region have come to EPA to discuss environmental education, but no significant programs or projects have been established with EPA. Visitors from government agencies, non-governmental and non-profit organizations come wanting to hear what programs have been successful in the U.S. and other foreign countries, but these discussions have done little to advance actual EE exchanges. Only the EPA Regional Offices in Seattle and San Francisco have had close contact with the Asia-Pacific Region and most of the contact has been sister-city exchanges and visitors seeking information.

The Office of Environmental Education has met with many EE practitioners, government and non-governmental representatives to discuss EPA's role in the U.S. environmental education field. Most of these visitors are from Japan and China. Discussions are often lively and involve a good exchange of ideas, but no concrete commitment to a particular course of action is ever agreed or acted upon. One possible explanation is the difference

between the short-term thinking of U.S. funders and the long-term philosophy of the Asia-Pacific countries. We have yet to find a way to bridge the gap between the US needing to move quickly before limited funding sources disappear and the desire in Asia-Pacific countries to develop comprehensive and inclusive strategies for EE.

Potential barriers for the successful development and implementation of environmental education programs in this region could include:

- not knowing who the potential “players” are in each country or region; those individuals who can make things happen in the government or in the EE field
- lack of human and financial resources
- lack of a high-level “champions” for EE
- regular turnover of government jobs in some countries
- lack of infrastructure in both the U.S. and most Asia-Pacific countries to support the development and implementation of sustainable EE programs
- emphasis on legislation, regulation and enforcement as the only successful tools for environmental protection
- division of responsibilities between environmental and education agencies and little/no coordination of activities or programs
- economic growth vs. environmental protection arguments/issues

However, the potential for successful implementation of environmental education programs in the Asia-Pacific area is high. There is a great deal of interest in environmental protection in this area of the world, and a number of international businesses which could serve as potential funding sources. For instance, any and all of the “tools” in the International Environmental Education Toolbox could be successfully developed and implemented if funding sources could be identified and tapped.

The following are possible strategies for implementing environmental education programs in the Asia-Pacific area:

Recommendations/Strategies:

- 1) Define environmental education broadly to include conservation, forest or park education, bio-diversity education and any other related topic areas
- 2) Develop vision and goals for environmental education, either nationally or regionally so that each stakeholder knows and understands their

relationship to the vision and goals

- 3) Develop a comprehensive communication strategy that reaches beyond the EE community to the education community, the environmental protection community, business and industry, and any other potential ally/advocate or funder
- 4) Form partnerships with practitioners, potential funders, researchers, and policy makers in all levels of government, non-governmental and non-profit organizations, education and environmental agencies/organizations and any other individuals or organizations that is a potential stakeholder
- 5) Explore country-to-country partnerships where there is mutual interest and expand those to sub-regional and regional associations
- 6) Factor the unique cultural heritage of Asia-Pacific countries in developing partnerships and programs
- 7) Link health issues, particularly children's health issues, with the environmental protection message
- 8) Link environmental education initiatives with sustainable development projects currently funded by any global financial institution
- 9) Take advantage of any existing networks of environmental or education professionals, health associations, woman's groups and any other potential avenue for getting a message to a large number of people

References

Bissel, S., Hilliard, M., et. al. (1997). Attributes of Quality Environmental Education Programs. Collected Papers of the 1996 National Environmental Education Summit, Burlingame, CA.

Volk, T., & McBeth, B. (1997). Environmental Literacy in the United States: What is Should Be..., What is..., Getting From Here to There. Submitted to the Environmental Education and Training Partnership.

Ginger Keho is the Senior Environmental Education Specialist and a staff member of the United States Environmental Protection Agency's Office of Environmental Education in Washington, DC. The views expressed in this article are her own and do not necessarily reflect the views of the EPA.

**Gross national happiness is more important than gross national product.
His Majesty the Kind of Bhutan**

An Overview of Environmental Education in the Asia and Pacific Region

Osamu ABE & Bishnu BHANDARI

The primary purpose of the paper is to review the current status of environmental education and assess the emerging trends and problems of environmental education in the Asia-Pacific Region. The paper has been divided into six parts. The first part gives a brief overview of regional strategy initiatives undertaken by the Environmental Education Project of the Institute for Global Environmental Strategies (IGES). The second part provides panoramic views of the Asia-Pacific Region, particularly focussing on its diversity and contrasts. The third part deals with major organizations involved in the region and their works related to environmental education. Emerging trends of environmental education in the region are discussed in the fourth part. Major problems faced in the region while implementing environmental education are the topic of discussion in the fifth part. The sixth part concludes the paper with some ways of promoting environmental education in the Region.

I. Introduction

The primary purpose of the Environmental Education Project is to promote the overall eco-consciousness of society vertically as well as horizontally through undertaking strategic research, adopting and diffusing results, empowering partners and providing forums for the exchange of genius, knowledge and ideas amongst researchers and scholars from the Asia-Pacific Region (Abe and Bhandari, 1999).

The aim of the Project is to formulate a comprehensive regional strategy on environmental education in partnership with national collaborators from countries of the Asia-Pacific Region. The other aim is to facilitate its gradual implementation (see Figure 1). Its specific objectives as stipulated in the Research Project Plans (Abe and Bhandari, 1998) are mentioned below.

- 1. To develop and propose proven means of encouraging all countries in the region to develop appropriate environmental education programs.*
- 2. To design and support networks which provide generic assistance to countries and NGOs in the region to encourage and improve environmental education.*

- 3. To establish collaborative projects with other countries in the region to promote the implementation of environmental education model.*

Justification for the Preparation of a Regional Strategy

Firstly, the strategy will be the first document on environmental education ever prepared for the Asia-Pacific region in a participatory manner. Secondly, the strategy is expected to provide a framework for regional cooperation, partnership, collaboration and networking in the region and to garner cooperation between the north and the south, between the countries within and across regions. Thirdly, the strategy is expected to provide a basis for preparing national policies and strategies on environmental education and to enhance its smooth implementation. Fourthly, it is hoped that the strategy will provide an Asia-Pacific perspective to establish a sustainable society and promote eco-consciousness in all spectra of society. Fifthly, the strategy will be a contribution to “Rio Plus 10”, ECO ASIA (Environmental Congress for Asia and the Pacific), APEC (Asia-Pacific Economic Cooperation) and GEA (Global Environment Action) and assist in establishing additional environmental education forum in the region under the Common Agenda.

Approaches and Methodology

Works initiated by organizations in the region are its foundation for further works. Synergy, partnership and participatory approaches will be taken into account in undertaking studies. Its five-phased methodology includes assessment of the EE situation, identification of key issues and development of principles and guidelines, preparation of a framework, development of a comprehensive strategy, and publication and dissemination. Research tools such as collaborative studies, secondary information, field visits, interactive meetings, workshops, seminars, conferences, case studies, and reviews will be used as techniques to prepare the strategy (see Figure 2 for the methodology).

II. Diversity in the Asia and Pacific Region

Asia and the Pacific Region covers about 23% of the world’s total land and houses 58 % of the world’s population. Over 40% of its population are concentrated in China, India, Indonesia, Pakistan, and Bangladesh. The region also contains fifteen of the 25 cities with over 10 million populations. The Asian Development Bank (1998) reports that out of 15 polluted cities, 13 are in Asia).

It also covers a vast expanse of the Pacific and the Indian Oceans and contains a large and diverse range of ecosystems, including driest deserts; rain forests and biologically second largest rich forest cover in the world. Over

two-thirds of the world's coral reef and one-third of the world's mangrove area are also located in the region.

Economically Asia and the Pacific region is the fastest growing region in the world. Region's economic outputs tripled during the past 35 years. Yet

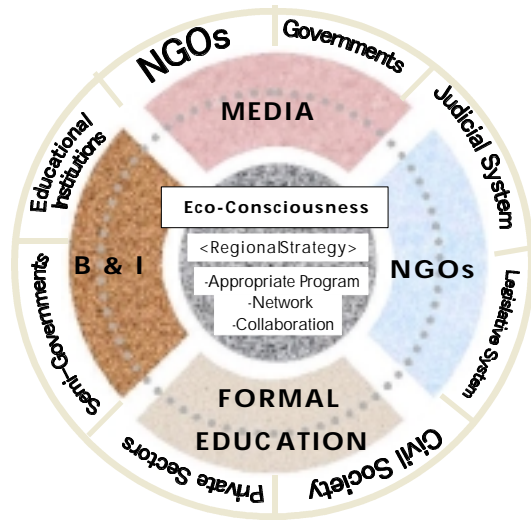


Figure 1. Diagram of the EE Project

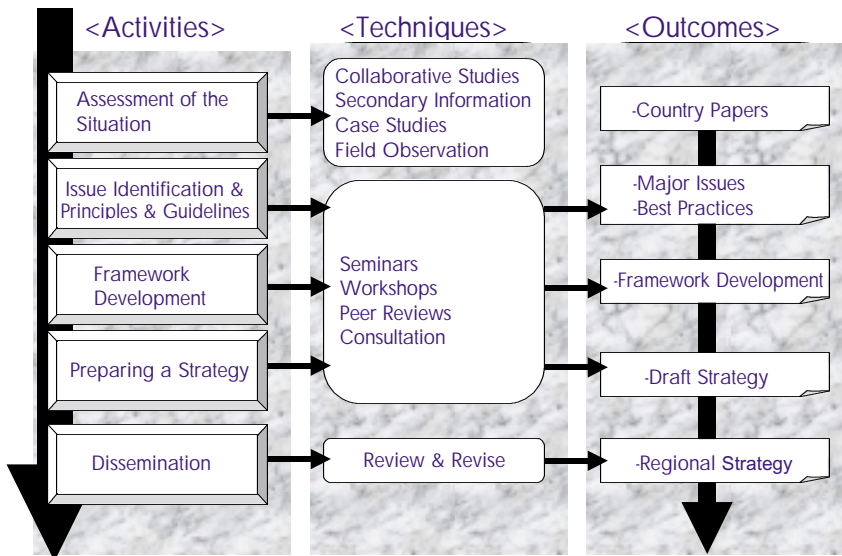


Figure2. Framework of a Strategy Development Process

there is a persistence of poverty. There is a great inequality between the rich and the poor. The region houses the high income economies like Japan, NIEs (such as Singapore, Hongkong, Malaysia, Taiwan, and Korea and China) and world's lowest income economies like Bhutan, Nepal, Bangladesh and Maldives (United Nations/ESCAP, 1995b). Also, it must be noted that the Region's economies range from nomadic to subsistence agricultural and from primitive to industrial.

As much as it is vast and diverse, it is also a region of sharp contrasts. It has two of the world's most populous countries, People's Republic of China and India, and some of the world's smallest island countries. It houses land-locked countries like Nepal, Bhutan, and Mangolia and sea-locked countries alike Maldives, Sri Lanka and majority of Pacific countries. Physical diversity of the region is so evident that it includes the world's highest mountain, deepest sea, deepest lake (Baikal), highest city (Lhasa), and driest deserts. There are many small one-island nations to archipelagian counties like the Philippines and Indonesia. Some countries like Nepal and Bhutan are mountainous, whereas country like Tonga has neither a river, nor a mountain.

The climate varies from tropical to temperate regions. This diversity poses daunting challenges for cooperation in achieving environmentally sound and sustainable development (United Nations/ESCAP, 19951b).

The Asia-Pacific region houses all the major religions of the worlds, Hinduism, Buddhism, Christianity, Muslim, Shintoism, and other minor religions. Nepal is a Hindu country, where as Pakistan is an Islamic country. Bhutan and Cambodia are the Buddhist counties and many of the Pacific countries have Christianity as their religion. India is a secular country, whereas Japan is a melting pot of all religions. Thousand of languages are spoken in the region.

The study area extends from Mangolia in the north to Tonga in the south, Japan in the east to Pakistan in the west and covers a total of 37 countries, of which seven countries are from South Asia¹, 10 countries from South-east Asia², five countries from North-east Asia³ and 15 countries and territories from the Pacific region⁴.

Politically India has got the largest democratic system as opposed to

1 1. Bangladesh, 2. Bhutan, 3. India, 4. Maldives, 5. Nepal, 6. Pakistan, 7. Sri Lanka.

2 1. Brunei Darussalam, 2. Cambodia, 3. Indonesia, 4. Lao, 5. Malaysia, 6. Myanmar, 7. Philippines, 8. Singapore, 9. Thailand, 10. Vietnam,

3 1. China, 2. Japan, 3. Korea, 4. Mangolia, 5. Taiwan.

4 1. Cook Islands, 2. Federated State of Micronesia, 3. Fizi, 4. Kiribati, 5. Marshall Islands, 6. Nauru, 7. New Caledonia (French Territory), 8. Niue, 9. Palau, 10. Papua New Guinea, 11. Samoa, 12. Solomon's Islands 13. Tonga, 14. Tuvalu, 15. Vanuatu.

the largest communistic style of government in China. Yet some countries have kings and emperor while others are republics. Some countries got independence only a few years ago. There is a high degree of economic and cultural dependence on the natural environment.

III. Major Agencies and Their Efforts

The basic thrust of environmental conservation stems from the *Third Ministerial Conference on Environment and Development in Asia and the Pacific* held under the auspices of ESCAP in 1995, which decided to implement a five year *Regional Action Programme* for environmentally sound and sustainable development in the AP region. The plan emphasizes ...*further promote public awareness, strengthen environmental education...* in the Region (United Nations/ ESCAP, 1995a).

Following this landmark conference, ESCAP prepared the “*Framework for the North-East Asian Subregional Programme of Environmental Cooperation* (NEASPEC), erstwhile Framework and Strategy for Regional Cooperation in North-east Asia to strengthen technical and managerial capacities in the north-east sub-region (ESCAP, 1996, 1998, Resource Management Associates, nd).

UNESCO-APPEAL focuses on universalizing primary education, eradicating illiteracy, and providing continuing education in the region, whereas UNESCO -ACEID is active in the area of environmental education, particularly in teacher education to improve the knowledge, skills, and experiences of teacher educators and teachers with regard to including environmental education as part of the curriculum (UNESCO-ACEID and Griffith University, 1994; UNESCO, 1998). It also organizes regional seminars to explore ways of integrating environmental education content and professional competencies into the teacher education curriculum. In one of the seminars, it has recommended the development of prototype teacher education materials and their pilot-testing and region-wide implementation.

UNEP has launched a networking, called NEATTLAP (Network for Environmental Training at Tertiary Level in Asia) in the region and this network has been seminal in “enhancing the environmental expertise of decision makers, policy formulators and tertiary level trainers in the region through the establishment of a self-sustaining network of trained individuals in the region” at the higher education level (UNEP, 1998). Recently UNEP has refocused its existing environmental education activities around the concept of global environmental citizenship (Pradhan, 1998).

The U. N. Secretary-General, in the 6th Session of the Economic and Social Council Commission on Sustainable Development, highlighted the need to prepare a regional education strategy for the region (United Nations, 1998).

IUCN has launched a network, SASEANEE (South and Southeast Asia for Environmental Education) for developing an effective regional network of environmental education experts. Likewise, WWF has initiated another network *South Asia Regional Cooperation Programme Framework*, as part of the WWF Global Priorities to promote environmental education and capacity building on managing natural resources (CEE/IUCN, 1998). South Asia Cooperative Environment Programme (SACEP) has developed a sub-regional action plan on environmental training for the SACEP region⁵ (Wijayadasa, 1997).

The South Pacific Regional Environment Programme (SPREP)⁶ has prepared a draft *Action Strategy for Environmental Education and Training in the Pacific Region 1999-2003* (SPREP, nd). It has also underscored the importance of environmental education, training, and information systems in its *Action Plan for Managing the Environment of the South Pacific Region* (SPREP, 1997).

ASEAN (Association for South East Asian Nations) member countries have also enjoined their commitment and duties on promoting public awareness and environmental education (ASEAN, 1994:67, ASEAN, 1997). Similarly, there is another network in ASEAN region called ARNEE (ASEAN Network on Environmental Education)

The Common Agenda plans to develop environmental education through the establishment of a forum in the Asia-Pacific region to nurture environmental education experts (Ministry of Foreign Affairs, nd).

ASPBAE (1996) has developed a framework for environmental education in the Asian-South Pacific Region in order to promote the spirit and principles of the *Treaty on Environmental Education for Sustainable Societies and Global Responsibility* endorsed by NGOs attending the Earth Summit in 1992.

Asia Environmental Council (AEC), an environmental council of NGOs in the Asia-Pacific Region, has been organizing a series of conferences called the APNEC (Asia-Pacific NGO Environmental Conference) and has given emphasis on the importance of environmental education for environmental management (Awaji, 1998). Also, forums such as ECO Asia, APEC, GEA, APNEC, NEANPEF⁷ have underscored the importance of environmental

5 Countries of the SACEP region are 1. Afganistan, Bangladesh, bhutan, India, maldives, Nepal, Pakistan and Sri Lanka.

6 SPREP is an inter-governmental organization for environmental matters in the South Pacific Region. The member countries include 1. Cook Islands, 2. Federated State of Micronesia, 3. Fizi, 4. Kiribati, 5. Marshall Islands, 6. Nauru, 7. New Caledonia (French Territory), 8. Niue, 9. Palau, 10. Papua New Guinea, 11. Samoa, 12. Solomon's Islands 13. Tonga, 14. Tuvalu, 15. Vanuatu, 16. American Samoa, 17. Australia, 18. France, 19. French Polynesia, 20. Guam, 21. New Zealand, 22. Northern Mariana Islands, 23. Pitcairn, 24. Tokelau, 25. United States of America, and 26. Wallis and Futuna.

7 North East Asia and North Pacific Environmental Forum

education in creating sustainable society. Likewise, the works of the Environment Agency of Japan, JICA, National Institute of Educational Research, NHK and Ramsar Center Japan are not the less important on promoting environmental education in the Asia-Pacific region.

IV. Emerging Patterns of Environmental Education

A cursory review of the reports from 37 countries of the Asia and Pacific Region indicates that environmental topics have been included in their course of studies and teaching. However, these topics are not being taught as an environmental theme. Now a days environmental concerns are found integrated into different subjects such as Science, Moral Education, Biology, Hygiene, Geography and Civic Education. Also it was found that government, NGOs, educational institutions and media have taken some concentrated efforts to meet the growing environmental challenges in their respective countries. Attempts are widespread to greening the curriculum and environmental issues have been taken as campaigns. Activities such as green bank, green press, eco-clubs, eco-polis, eco-farming and eco-harvesting are emerging in the region. Special economic incentives (such as subsidy, tax-exemption and other incentives) are provided to schools in some countries where environmental education courses are offered. Even legal systems are prone to environmental concerns. It was found that in several countries, the formal education is under the control of MOE and informal education under the jurisdiction of the Ministry of Environment. Some recent trends are briefly summarized below.

1. EE is seen as a new approach to total education. Some see it as a holistic education (it encompasses all that is around us and brings various disciplines together), whereas other see it as a values education (meaning respecting nature and life, stewardship over natural resources, simple living, personal responsibility and gratitude for the lavish gift of nature). Still others think that it is a new perspective to education (meaning incorporating environmental considerations such as education in the environment, education from the environment and education for the environment).
2. Efforts are underway in localizing environmental subjects, where they use local examples, local skills, local materials and traditional media in the classroom teaching.
3. Composite course have been successfully adopted at the primary level, where as environments are either integrated into the existing subjects, or developed as a compulsory course at the secondary level. Some countries have introduced environment as an optional course. Separate degree courses with the provision of specialization have been initiated in tertiary

education and are complimented by co-curricular and extra-curricular activities.

4. Edutraining of environmental message in the traditional non-media has been quite popular in many countries.
5. Eco-restoration initiatives are also underway in many countries.
6. In the region as elsewhere, there is a mushroom growth of NGOs mostly donor-driven, donor-dependent, and project-based. Regardless of this, environmental concerns have been integrated in their plan of action. There are more pro-environmentalists now than before and NGOs and civil society are actively involved in promoting environmental education in the region.
7. Environmental journalism is getting popular and media have taken up the issue of environment.
8. The review of the country reports also indicate that there has been a shift form incorporating environmental matters in science to social science, liberal arts and humanities.

V. Major Issues of Environmental Education

There are a number of issues prevalent in the region. The major ones are briefly presented below.

1. **Environmental education marginalized:** Environmental education has always been marginalized amidst serious problems of poverty, lack of awareness, globalization, illiteracy, disease and so forth. Lack of a separate EE act, national policy and allocation of a separate budget line on EE at the national level has further complicated this situation.
2. **Congested curriculum:** Over-crowded curriculum, unavailability of instructional materials, less number of teachers, large class size, shortage of trained teachers, over-burdened teacher, teaching in various shifts, exam-oriented system and assignment of the teachers other than their own teaching work has posed another problem for promotion of EE in the region.
3. **Lack of understanding:** There is also a lack of understanding between concerned ministries about smooth implementation of the projects in which, when implemented produces poor results or there is a duplication of activities, or a competition on limited resources. Due to lack of institutional coordination between concerned agencies, it is extremely difficult to implement the program.

4. **Lack of equivalent words:** Another issue is the lack of equivalent terms in the local language. Many EE terms do not have easily translated equivalents in other language. Thus their intended meaning is easily lost or deviated.
5. **No continuity:** Also it was found that there is a lack of continuity. When the fund to the project ends, environmental education ends as well.

VI. The Way Ahead

EE is as complex and complicated as the term “environment” itself. It cuts across many disciplines, sectors, realms, eco-systems and spheres. Because of this, environmental education needs to be planned and implemented systematically for which some suggestions are given below:

1. **Distill best practices and lessons:** A large number of innovative practices and lessons already exist in the region. They need to be identified and replicated in other countries of the region.
2. **Review and revise the existing curriculum:** There is an urgency to review the existing curriculum in order to eliminate the dead woods and determine slots to incorporate environmental concerns.
3. **Reorient the pedagogical approach:** There is an urgency to reorient out existing teaching methods from “chalk and talk” and lecture methods to problem-solving methods, from activity and issue-based approach to field work and case studies, from “didactic” to advise-based” approach, and from rote learning to “attitude and skills” development and learning through participation and edutrain.
4. **Encourage traditional non-media:** Non-media (such as folklore, folk songs, story-telling, religious institutions, or traditional venue) should be involved to compliment the mass media to raise people’s awareness about environment.
5. **Synergize various efforts:** Develop a synergy of formal education, B and I, media and NGO for promotional activities.
6. **Establishment of a regional resource center:** A regional resource center should be established to coordinate environmental education activities in the region.
7. **Develop national policies:** Encourage and motivate national governments to prepare act, policy and national strategy.

Conclusion

Education is a life-long, continuous process that occurs from birth to death and is important in all segments of a society. That is the reason why we should take a holistic approach to enhance EE in our society. The approach we adopt should be flexible as well as responsive to the changing needs of the society at all time like a sari (a fabric worn by Hindu women), which fits persons of all age and size, not like a tailor-made suit, which fits persons of the same shape and size only. Finally, let me stop here by quoting an African poem, which I found in one of the visiting cards given to me in one of these conferences. The poem goes this way:

In the end...

We will conserve only what we love,

We will love only what we understand,

We will only understand what we are taught.

- Annon.

References

Abe, Prof. Osamu and Bishnu B. Bhandari 1999. **Environmental Education at IGES: Conceptual Framework and Methodological Approaches**. Paper prepared for the Workshop on Media and the Environment in the Asia and Pacific Region, Shonan Village Center, Hayama, Kanagawa, Japan 16-17 February 1999 organized by IGES (the Institute for global Environmental Strategies) and the Japanese Forum of Environmental Journalists.

Abe, Prof. Osamu and Bishnu B. Bhandari. 1998. **IGES and The Environmental Education Project in Asia and The Pacific Region**. Proceedings of the 4th Asia and Pacific NGOs Environmental Conference, 26-27 Nov. 1998, Singapore.

ASEAN. 1994. **ASEAN Strategic Plan of Action on the Environment**. Jakarta: ASEAN Secretariat.

ASEAN. 1997. **First ASEAN State of the Environment Report**. Jakarta: ASEAN Secretariat.

Asian Development Bank.1997. **Emerging Asia: Changes and Challenges**. Manila, Philippines: Asian Development Bank

ASPBAE. 1992. **Treaty on Environmental Education for Sustainable Societies and Global Responsibility**. Rio de Janeiro, 9th June 1992. ASPBAE, Education for Life, September, 1992.

ASPBAE. 1996. **Evolving an Asian-South Pacific Framework for Adult and Community Environmental Education.** Prepared for the ASPBAE General Assembly, 1-8 December, Darwin, Australia.

Awaji, Takehisa. 1998. **Future Development of APNEC and AEC: International Environmental NGOs Experts in Asian Pacific Region Towards the 21st Century.** Keynote address to the Fourth Asian NGO Environmental Conference (APNEC-4), Singapore, 26-27 November 1998.

CEE/IUCN. 1998. **The SASEANEE Circular.** The Newsletter of the South and Southeast Asia Network for Environmental Education Vol6, No. 1 September 1998.

ESCAP. 1996. **Framework and Strategy for Regional Cooperation.** Third Meeting of Senior Officials on Environmental Cooperation in North-East Asia, Ulaanbaatar 17-20 September 1996.

ESCAP. 1998. **Emerging Issues and Development at the Regional Level: Environment and Natural Resources Development.** Fifty-fourth Session, E/ESCAP/1093, 23 February 1998.

Ministry of Foreign Affairs. nd. **U.S.-Japan Common Agenda for Cooperation in Global Perspective.** A bilingual information brochure and homepage on the Common Agenda.

Pradhan, Mahesh. 1998. **Introducing Environmental Education Activities of UNEP in Asia and the Pacific.** Paper read at the APEC Symposium on Environmental Education towards Sustainable Cities, Sendai, 20-21 September, 1998.

Resource Management Associates. nd. **Regional Project on Technical Assistance for Environmental Cooperation in Northeast Asia.** Report prepared for the ESCAP with funding support from the Asian Development Bank.

SAPREP. 1997. **Action Plan for Managing the Environment of the South Pacific Region: 1997-2000.** Apia, Western Samoa.

SAPREPP. nd. **Action Strategy for Environmental Education and Training in the Pacific Region: 1999-2003 (Draft Only).** 10SM/WP.8.2.3/Att.2

UNEP. 1998. **Environmental Education and Training: NETTLAP on the Web.** United Nations Programme-Regional Office for Asia and the Pacific.

UNESCO. 1998. **ACEID-News.** No 43. 1993

UNESCO-ACEID and Griffith University. 1994. **Final Report of the**

Planning Group Meeting for the UNESCO-ACEID Project, Learning for a Sustainable Environment: Innovation in Teacher Education. Brisbane: Griffith University.

United Nations. 1998. **Capacity-building, Education, and Public Awareness, Science and Transfer of Environmentally Sound Technology** (Chapter 34-37 of Agenda 21). Report of the Secretary-General on the Sixth Session of the Economic and Social Council Commission on Sustainable Development, 20 April-1 May 1998.

United Nations/ESCAP. 1995. **Declaration and Regional Action Programme.** Ministerial Conference on Environment and Development in Asia and the Pacific, 27-28 November 1995. Bangkok: ESCAP

United Nations/ESCAP. 1995. **State of the Environment in Asia and the Pacific, 1995.** ESCAP, United Nations and Asian Development Bank. ST/ESCAP/1585. Bangkok: ESCAP and Asian Development Bank.

Wijayadasa, K. H. J. 1997. **Cooperation in Capacity Building for Environmental Training in South Asia.** SACEP Environmental Publications Series No.1. SACEP in collaboration with NORAD.

Symposium/ Panel Discussion

CHAIRPERSON (Mr. Kazuo MATSUSHITA)

It is time to start the panel discussions. We would like to ask for a 10-minute presentation by each panelist to cover the status of environmental education in their respective countries. Suggestions and proposals will also be included on the issue of global partnership, as well as some expectations and proposals regarding IGES activities in the future. At this point I would like to introduce the panelists. I would like to start with Dr. John Fien, who is from the Center for Innovation and Research in Environmental Education of the Griffith University in Brisbane, Australia. Mr. Hyung-Shin Kang is the Director of the Environmental Education Division of the Ministry of Environment in Korea. The third panelist is Ms. Bing Hao, from the Environmental Education Center of the Beijing Normal University, in Beijing, China. Mr. Murugadas Loganathan is from Wetland International and is in charge of the Asia-Pacific Malaysian program in Malaysia. My colleague, Dr. Bishnu Bhandari, is currently a Senior Research Fellow at IGES and in charge of the Environmental Education Program. Before joining IGES, Dr. Bhandari used to work at IUCN in Nepal. We also have Professor Abe who has just concluded his speech. I would like to call on Dr. Fien to make his address.

Dr. John FIEN

It is wonderful to see many of us on a Sunday afternoon and spare time for discussions on environmental education. It is truly a very wonderful thing particularly when there is an opportunity to share ideas with colleagues from a great number of countries in order to identify ways to use educational processes to help build a sustainable world. Prof. Abe made a very wonderful presentation about the various meanings of sustainable development. While there are many meanings, he is able to identify three key characteristics, which include fairness between generations and fairness between people today, as well as fairness between people and the rest of nature. So while people might debate the various strategies for achieving these three aspects of fairness, these three things will be our goal as we think about how education can be reoriented. At the moment in Australia, the education system is displaying many innovations in environmental education. Those innovations are especially good at linking school children with the community in solving local environmental problems- Problems associated with water quality, air quality and the quality of farming land. We can identify projects for adults where the public media are used to promote broader environmental awareness, where conservation networks are formed to help conserve endangered species, and where environmental campaigns are used to educate people in ways of avoiding air pollution in cities. But all of these wonderful activities are at the moment insufficient in order to help change the Australian society into a sustainable society.

Prof. Abe earlier mentioned three characteristics of sustainability. I would like to suggest that there are two more. Those are the two features that are missing in environmental education in Australia at the present time. The first one is the recognition by most people in Australia that we as individuals and as a society are responsible for creating the future. We seem to think that the future is just going to happen and that we can't control what happens. We have been so used to decisions being made for us by government, by industry and by other people. We have lost the sense of what it means to take control of our lives and to participate in working to create a sustainable future for our families, our communities and ourselves. So one aspect that is missing in Australia is the aspect of public participation. Australia has an attitude of leaving it to the other person, believing that somebody else will fix the problem. And seeing the smiles in the room, I think that people are suggesting that this is the situation in their countries also. I suggest that one way of improving environmental education in Australia is to come to the recognition that we need to encourage participatory democracy and public involvement in helping to create a sustainable future. And this has great implications for the way schools operate and the way decisions are made by the government. At the moment, decisions in schools are made by education officials. They pass orders, down to the prefecture and the prefecture passes the orders to the school principal who in turn passes the orders to the teachers. The schoolteachers then pass the orders to the children. We are not very good at developing a sense of responsibility and a sense of action competence in young people at school, a sense that they can be active and play a role. We need a way of reorienting education to help educate for a sense of responsibility. So that is the first area where I believe we can improve environmental education and make society more sustainable in Australia. The second area where sustainability is important but which we have neglected in Australia is the issue of finding a balance between the needs of the economy and the needs of society and nature. We know that sustainable development means a compromise between these.

At the moment in Australia, people seem to be in different armies in a war, where the people who believe in economic growth believe in economic growth only, and the people who believe in conservation believe in conservation only. There hasn't been any recognition that we need to find ways of compromising, identifying limits, identifying priorities, identifying a common vision and compromising even if it means in the short term. No one gets exactly they want. This requires particular skills because in a school system we teach competition and we teach individualism. We are not very good at teaching the social skills of cooperation and consensus. The only thing that matters in school is passing the examinations and getting a good job and being financially secure. When you ask schools about where they teach cooperation, they will tell you that it is only taught in the sporting field. The

trouble is that we do not even assess what goes on in that sporting field. Until we can find ways of incorporating cooperation, consensus, compromise and social or group skills into the learning processes at schools, then we will not be able to have a truly sustainable society. It is only when we learn the skills of responsibility and cooperation that the three types of fairness, namely the fairness between species, fairness between generations and fairness between other people, will be achieved. So far I have identified weaknesses in the environmental education in Australia. But that doesn't mean that all of it is bad. There are many innovative programs there, and if there is enough time I would love to show you some case studies of the exciting programs that are taking place in the community, in the media and in schools. It is also important that when we speak as members of the Asia-Pacific family, that we also be honest and say that there are many good examples but they are not as widespread as we would like. And as a result of this particular meeting we are able to share our problems, and hear from other people from other countries and cultures, about their perspective on those problems and give us advice on how to move forward. In our discussions, I will be very interested in learning how everyone here is addressing the problem of teaching for active participation and teaching for social skills, group skills and teaching attitudes of cooperation. That is something that I would very much like to learn and bring home to share with my environmental education colleagues in Australia. I would like to thank you all in advance for all the wisdom that you are going to share with us in our later discussions.

The second thing that would be nice to mention this afternoon is some of the ways to secure international cooperation. In many ways I believe that I have answered that question. We have meetings such as this. I think we must be able to find ways of continuing the networking and the partnerships. Meetings such as this are important. We also need meetings in less developed countries so that more people can attend and so that the wisdom that is shared by having collaborative meetings can be shared with the people who need it the most. Certainly we are going to find that electronic communication or the Internet and e-mail are gradually gaining importance. I believe that there is a need for greater training programs. They should be face to face and multi-media based. I think these are things that we could work and develop together so that we will be able to share good experiences with each country. And so I would like to comment on the third point regarding the expectations and outcome of the IGES program of research in environmental education. I would say that my expectation is that we might be able to collaborate and develop a regional framework, which provides strategies for moving forward, and provide training skills for assisting us in resolving the problems that we share in common. Thank you very much.

Mr. Hyung-Shing KANG

Thank you very much, Mr. Chairman. I am very pleased to be here and be able to share with you the environmental education activities we have in Korea. The environmental education in Korea may be broadly divided into two groups: environmental education in schools and environmental education in society. Environmental education is actively taught and emphasized in various schools at elementary and high school levels. Furthermore I would like to say that since 1995, environment subjects have been taught in junior schools and environmental science subjects have been available in high schools as selective subjects. On the other hand, for environmental education in society we support NGO activities and professional education. The curricular environment education means that institutional education in schools has a dual system. A lot of the regular subjects include environmental topics or contents at kindergarten and elementary levels. Since 1995, subjects on the environment have been taught as optional subjects in middle schools. Last year, 343 middle schools (12.6% of the national total) had environmental subjects in their curricula and 287 high schools (15% of the national total) engaged in these studies. As the study of the environment increases in schools, more and more teachers are needed to cope with the demand for better-qualified faculty in these institutions.

The government has encouraged the upgrading of this field or area of teaching by establishing major courses of study in the field of the environment. During the summer and winter vacations, the teachers were taught a course of environmental education to help them obtain licenses in this field at the five designated Universities in Korea. In 1996, regular courses at four teacher colleges were established. This means that by next year, we can expect regular teachers to handle classes on environmental education in our schools. As I mentioned earlier the license for teaching is contemporary and the supplementary training of teachers is needed. The National Environment Training Center has provided teaching courses, textbooks and subsidiary materials for improved environmental subjects in middle schools. These subjects include environmental issues and practical problems. For high schools, the government has developed environmental science with five special fields. Examples are environment and technology, environment and agriculture, environment and ecology and so forth. Environment education for citizens is mainly done through the mass media in Korea. Educational broadcasting systems have a very enthusiastic approach to the teaching of environmental education. Since 1993 these broadcasting companies have made weekly programs, and many newspapers including major publications are dealing with environmental problems. At this point I would like to discuss global partnership and the relationship between countries with different perspectives. I would like to point out the importance of cultivating and understanding the oriental thought or frame of mind. Unlike western cultures, the Asian way of

thinking and going about the business of environmental management is largely based on its culture and civilization. Different countries view the natural environment in various ways. In the old days in Korea, empires and dynasties were built with careful attention to details in the topography or surroundings. Human existence was somewhat dependent on nature and their harmony was, in some ways, kept in balance. Going back to the subject of environmental education, there is a need for the exchange of information and data. Establishing a network in the Asian region is vital. We should be able to activate the role of NGO to build a network and promote environmental education. Two years ago, the World Environment Day was held in Seoul. This year, I think Japan will have the chance to host this activity which is concerned with the environment. The main focus we had was on environmental ethics. Industrialization has brought development and other conveniences to our modern world. Unfortunately, it also brought numerous environmental problems.

There is a need for a balance of spiritual culture and materialism. Twenty-seven guidelines for action, including environmental education, were adapted to enhance awareness and ethics. Sustainable consumption is also included in the study of environmental education. There is a need for environmentally friendly products. An international conference on sustainable consumption was held in Korea last January. The topic of that conference was traditional lifestyle, and cultural values that should be considered for sustainable consumption. A traditional lifestyle means harmony with nature, mutual health, frugality, caring and sharing, as well as strong friendly ties with others. In order to make a successful global partnership in the Asia and Pacific region, it is necessary to promote environmental ethics. In industry we should promote sustainable production and consumption as well as to accelerate NGO activities. It is also necessary to create a network among nations, and finally environmental cooperation must be promoted in this area. In 1996 the Japanese government promoted some Asian conferences for the Junior Eco Club and we are looking forward to this year's conference which will also be held in Japan. Japan's Environment Agency held the Asia-Pacific seminar on environmental education some time last year. This year, the Japan's Environment Agency has already held various international conferences such as the one we are having today and I believe that this should be highly valued and continued in the future. It is very helpful for us to be able to exchange precious data and information among our countries.

CHAIRPERSON

It seems to me that Korea has a more advanced system of environmental education than that of Japan. There are already special subjects in many schools as well as specialized training for teachers in the field of environmental

education. Environmental awareness starts at the kindergarten level, which is quite remarkable, and I have to say that we admire the accomplishments of Korea in this field. We would also like to give credit to the good management of Mr. Kang in his efforts to establish and promote environmental activities in his country. Mr. Kang mentioned the importance of a spiritual and oriental way of thinking in the establishment of a global partnership. At this point, we would like to introduce our representative from China, Ms. Hao Bing to give us a few words about the status of environmental education in her country.

Ms. Bing HAO

I am very pleased to have this opportunity to discuss with you the status of environmental education in China. There was a lot of good feedback and questions raised during yesterday's discussions. The present environmental situation in China is very serious. There are about 1.3 billion people in China, but we only have 70% cultivated land to support the vast size of the population. At present, more than 70 waterways in the country are either polluted or dried out. The people do not know much about the nature and causes of the problems. There is a widespread lack of understanding of natural conditions and problems associated with changes in the environment. People do not feel that they are directly concerned or affected by environmental problems arising in many neighboring countries and other crucial environmental issues facing the world. I believe that strong public awareness about environmental education in China must be developed. Environmental activity in China covers formal and non-formal educational areas. In the formal education area there are two main approaches. One is a cross-curriculum approach, since the curriculum is already too crowded. It is very hard to find space and specialized teaching inside the curriculum for this particular cause. We do have a few schools in line with this approach, but generally speaking, a lot things have yet to be done in this area. At present, the focus on environmental education activities includes publishing materials on environmental education and also teacher training for both in-service and pre-service teachers. In the non-formal area, two groups are very active. The first one is the NGO. The second is the Media. NGO is actually quite a new term in China. I want to introduce two typical environmental NGOs in China. The first one is the WWF, which is a well-known international organization. They have done a lot of programs in the past. They worked on several projects such as the Panda Program and also the Golden Monkey program. The WWF is very active and has good relations with the government, specifically with the Ministry of Forestry, the Ministry of Education and the State Environmental Protection Agency. Another NGO that I want to introduce to you is the Friends of Nature. This was established in 1994 and there are about 600 members now, with the majority of the members coming from Beijing. The members range from University Professors and some Officers to ordinary workers. This

group has concluded a series of activities in the area of environmental education in the past. They have organized environmental education groups and they have regular discussions on how to carry out environmental education in schools.

They also have programs in coordination with a small German organization in Hamburg called the SOF or Save Our Future, which sends 15 teachers every year to Hamburg to observe and participate in many activities. Other activities of this group include tree-planting programs, and campaigns to preserve endangered species such as the Tibetan antelope and snub-nosed monkeys. Their most recent activity involves work with restaurants. This activity mainly involves regulating the slaughter of wild animals for sale as exotic dishes in the biggest restaurants in Beijing. This project aims to eventually restore the number of endangered species to its normal state. The media is also fast becoming a powerful and effective means of promoting environmental education in China at present. There are now two main programs of the China Central TV that shed some light on the truth and perils of environmental destruction in the various provinces of China. The programs which both enjoy good ratings with the public seem to do a good job of creating environmental awareness in the ordinary Chinese citizen. In general, journalists have become more active and sensitive to environmental issues in China. In Beijing there is big center called the China-Japan Friendship Environmental Protection Center. Japanese experts use this center to introduce expertise in the field of environmental education in China. Cooperation between these two countries is vital because of the many similarities in their culture and history. That concludes my brief presentation of the present status of environmental education in China and I would be very glad to answer your questions later on. Thank you very much.

CHAIRPERSON

China is a very large country with a rapidly growing economy, and is representative of the issue of environmental problems commonly associated with rapid development. Ms. Hao Bing has enlightened us on many aspects of the activities of various groups in China and the importance of environmental awareness as seen from the Chinese perspective.

Mr. Murugadas T. LOGANATHAN

I would like to give an overview of the situation of environmental education in Malaysia. I would say that the concept of environmental education in Malaysia is relatively new. There is still a lot to be done in the area of environmental awareness in Malaysia. When we talk about a broad approach in addressing the issue of environmental education, we are actually dealing with a very large area. This process does not merely deal with an

isolated area of waste disposal but deals with a whole issue of environmental awareness in various sectors of business and society. It also requires consistent effort, cooperation and coordination among the different agencies with the country. In the early 1990's, the Malaysian Education Ministry introduced some environment related issues into primary school and secondary school curricula. A few schools were selected as model schools to implement this new curriculum and there was a very good response from teachers and students in the sense that it was an exciting experience for them because they were able to go outside and learn something different. At the end of 1997 there were approximately 100 of these schools with such a facility. The status of this program is not known for now. The reason why I said that environmental education is a new concept for Malaysia is that when our education policy was launched in 1979, the idea of the environment was not emphasized or given substantial attention. In 1998 the National Bio-diversity Policy was launched in Malaysia and I think that within a year the National Environmental Policy of Malaysia will be launched as well. At present we are trying to emphasize the need and importance of environmental education for the Malaysian people. In this regard we are talking about environmental education at all levels of society. With regards to the activities of NGOs in Malaysia, I would say that they are quite active. An example of this is the NGO that I work for, which does a lot of work on wetlands on an international scale. The work that we did was quite localized which, in effect, limits the scope of our environmental activities to a specific area only. We hope to see a broader range of activity on a nationwide scale. Then there are other NGOs such as WWF and MNS(Malaysian Nature Society). I believe that environmental education is something that local governments should look into seriously and by NGOs. However, the efforts are much dependent on priorities and availability of financial resources. Furthermore, Malaysia does not have Environmental Education per say offered as degrees at the graduate and post graduate levels. Only those involved in the sciences have ample environmental understanding. Areas of the arts, economics and business management hardly touch on issues regarding the environment. Sustainable development, for instance is a gray area to lots of people.

It has been very enlightening over the last two days to hear that countries like Japan and Australia have implemented very good post graduate programs, which I feel would be of use and assistance to Malaysia in the long run. We for see the government of Malaysia taking the lead with the support of some local NGOs and other sectors, namely universities in carrying out efforts to strengthen environmental education in the country. As an NGO organization, we have to do our part in promoting environmental education in Malaysia. The past few days have produced much discussion, and a lot of ideas and opinions have been considered and implemented in some parts of the country. These are going to be some of the selling points that would be

useful when persuading local governments to consider environmental education matters. The ultimate goal of environmental education is for a sustainable world. When we say a sustainable world, this has reference to nature and many other things. We have learned many things in this conference that can be incorporated and shared among countries. There is a possibility of IGES assisting Malaysia in various environment-related activities in the near future.

Dr. Bishnu BHANDARI

I would like to give you an overview of the developments in the region through IGES. First of all the purpose of the environmental education project at IGES is to promote Eco consciousness in the Asia and the Pacific region. Eco consciousness means to promote environmental awareness and literacy, global environmental citizenship and also to promote environmental ethics. So these things are involved whenever the term Eco consciousness is discussed. What is the objective of the environmental education project in IGES? The ultimate goal is to prepare a comprehensive regional strategy of environmental education for Asia and the Pacific region. In order to do that, we have divided our aims into three parts. One is through facilitating. There are many good practices in this region, so we would like to facilitate and transfer these from one country to another. Second is the need to create a network. The third is collaboration. These will enable us to train people, undertake research, and disseminate our findings. In order to do these things, we have selected four powerful sectors, which has been mentioned by Professor Abe himself earlier in the meeting. They are formal education, NGOs, Media, and business and industry. These are all very important and powerful sectors. Our targets will range from government to civil society, from the judicial system to elected leaders, from universities to the corporate and private sectors.

In order to prepare this strategy we have five activities to consider. First we would like to make an assessment of the situation of environmental education in the region. Next is investigating the key issues, measure issues, principles and practices or guidelines. We must also consider the outline of our strategy. After that comes preparation and dissemination. So at the end of three years we will have developed a comprehensive regional strategy. We hope that this regional strategy will add to a new Asia-Pacific perspective on sustainable development. This includes ecological sustainability, socio-cultural sustainability, and spiritual sustainability. We would like to present a new Asia-Pacific perspective. Furthermore we would like to make this a framework for regional cooperation. That document will be used to create cooperation between the north and the south, from Japan to developing countries and vice versa. Through this document we would like to also contribute ideas to APEC, ECO Asia, GEA or Global Environmental Action, etc. We hope that

this document will serve as a basis for national governments to prepare national strategies. Through all these processes we would like to ensure the active and informed participation of national collaborators. We have already contacted 37 countries in the region. Some are poor countries and others are rich countries like Japan. Some are mountainous countries like Nepal and some don't have mountains. Tonga is one place where there is an absence of mountains and rivers. Diverse topographical differences make up the unique attributes of the Asian region. The 37 countries will be helping us in the preparation of regional strategies. Through these countries we would like to form global partnerships. We have chosen national collaborators upon consultation with various institutions and sectors. Another way of enhancing global partnership is through networking of like-minded organizations and institutions. Collaboration is one aspect that we will have to work on. We should also focus on how we can act as a catalyst in promoting their activities. Other things to consider would be coordination or working together or independently within the accepted framework, establishment of networking and organizing workshops like the one we are having now. Certainly we can also enhance the global partnership through clearing houses that will contain necessary materials. Sustainable development needs innovation in order to succeed and we need to develop skills and awareness as well as ensure a collective responsibility. I would like to take this opportunity to thank everybody for all the support and special thanks to all the friendly people of Yokohama for having us here.

CHAIRPERSON

The panelists have all finished their presentations. We have heard their presentations regarding their perspectives on the promotion of environmental education as well as the status of environmental education in the various countries of the Asia and Pacific region. If you have any questions at this point, please feel free to raise them.

Questioner A

I work for the Tokyo Electric Company. I was particularly inspired by the presentation of Mr. Kang of Korea. He explained the solution for environmental problems and introduced the issue of environmental ethics. He also introduced and expounded the oriental ways and values. I was very impressed by that portion of Mr. Kang's speech. I would like to ask you to explain in more detail the educational system in Korea. I would also like to listen to the reaction of other panelists like Dr. Fien to the statements made earlier by Mr. Kang.

Questioner B

I am from an NGO named ECONET. I want to raise two questions. First, there was a comment on cutting down forests. Please elaborate on those details. In line with that, please elaborate more on the topic of wood products. I would like a representative of China or a Southeast Asian country to respond.

CHAIRPERSON

Mr. Kang has explained about environmental ethics and referred to the oriental way of thinking. Can you elaborate how we can implement this practically? Furthermore, we urge other panelists who would like to add something on these points to please make their comments. We would like to call on Mr. Kang for his response.

Mr. Hyung-Shing KANG

Thank you very much for your questions regarding my earlier remarks on the topic of oriental thinking. In response I would like to say that we have not been able to decide on any details regarding textbooks. I presented some declarations for setting up guidelines in 1997. The textbooks for students in environmental education were made in 1994. We revise our textbooks every five years and contents are changed a bit and new versions made. We are presently making revisions to the contents of textbooks for students. The Korean Ministry of Environment has published five books for the nation's citizens, which includes housewives and also members of the military. In the textbook we have included items about the environment as well as topics on environmental ethics and oriental thoughts. Frankly speaking it is not theoretically established yet. However we feel that topics or issues on oriental ethics or values should be included and this has been discussed in many conferences held in Korea. Last January, the International Conference on Consumption Patterns was held Korea. Ten countries participated in this international conference held last month, and many discussed the importance of changing peoples' behavior patterns as well as giving us advice on how to make the changes. We are now developing programs to help students adapt to some environmental ethics. We are also looking into the possibility of promoting a program that will conform with or adapt to our social setup in Korea. I think that the programs should reflect some characteristics of each country. Diversity was an important issue in that conference. In this context, I think that oriental thoughts should be considered.

CHAIRPERSON

Thank you very much, Mr. Kang. Actually some of our participants have made comments on this and we have a question raised from the floor on

the issue of environmental ethics and values. We would like to ask Dr. Fien and Professor Abe to comment briefly on the topic of values and lifestyles. Other panelists are also urged to make their comments. Meanwhile, we would like to hear from Dr. Fien.

Dr. John FIEN

One of the interesting issues in education is the concern that teachers should always be neutral. Textbooks and syllabus as present a view of the world, which is being officially endorsed by government offices. It is seen as the role of the teacher to present that information to students in an objective manner. The school has an assessment system, which is based upon individual performance, individual excellence and competition. The school is based upon decision-making structures whereby decisions are passed down from top to bottom. The culture in which children live is a culture of entertainment, stress, and competition, and we need to think about the cumulative messages that finally arrive in children's lives. We don't even have to think about the nature of some of the messages that come from popular culture or the messages from television, the messages from computer games, the messages from some of the words in pop songs. It is hard to put all of these cumulated learning experiences together. It is easy to understand why we have poverty in this world and why we have conflict. It is also easy to understand why there is a lack of consideration for future generations and other people or other species. If we were to look at history since 1950, the baby boom generation was a generation that thought that the transistor radio was really wonderful. The generation of the 1980's thought that the computer was wonderful. And we became the computer generation. The generations of young people today are what we might call the Nintendo generation or the Play Station generation. And what do they learn from that? They learn to sit down and do something by themselves. In the process they cut themselves off from other people. If you are actually in a Play Station with somebody else, then it's a competition. And what are the sorts of games they are playing? The total round of messages that the Nintendo generation is receiving is a set of messages that helps us to understand why we need to put sustainable development at the core of the educational system.

Prof. Abe gave us three special characteristics, and I suggested two others, of sustainable development as a special characteristic that could be infused into the curriculum. People have great difficulty in learning things that they are not taught. It makes sense doesn't it? First, to learn something we need to be taught. We can even teach ourselves, but generally it is better if it is organized and taught to us by someone else. And if we would like those principles of sustainable development to be the ethics by which we live then those values need to become a core part of the education system. That has

three implications. The first implication is that teachers need to develop methods of teaching which are professionally ethical but have a strong values base. This sometimes seems like a contradiction. But I think the teacher who tries to be objective is the one who is displaying a decided values bias. We need to have ways wherein the values of sustainability can be built into the curriculum, but teaching methods developed, whereby teachers can do that in a professionally ethical way. Secondly, for us to put those values at the core of education, we need to start reforming education systems and structures. Environmental education is a way of improving the educational system. Education systems are like a giant train with no power. They are very hard to push. Education systems change slowly. I would suggest that we look at our education systems and find ways that when they do change they become reoriented towards promoting the values of sustainable development. What are the sorts of changes we need in education systems? First of all we need a decentralization of syllabuses to a local level. People can only learn to live in a sustainable way in their homes and in their neighborhoods. I am not learn to live a sustainable life in the world. I cannot be responsible for the world. I could be responsible for my home, garden, street, school or neighborhood, and that is a lot. We need to have curricula oriented towards the local environment, so we need to be able to decentralize decision making about curricula to the local level so that teachers can use the local environment and local problems as an avenue for teaching. We also need greater local teaching materials. I think this is a controversial topic in Japan. We think about the issue of how the textbooks are prepared and the need for special government committees to examine them. I do not want to suggest that there is a problem with that. However, we need to find ways where other materials, can also be accessed by schools. We need supplementary materials with a strong local and environmental flavor. We need space in the curriculum for dealing with these. Supplementary materials are seen as important as the textbooks, and this means that there is a need for decentralizing assessment.

We always think of Denmark as one of the most democratic societies in the world. Denmark does not have examinations until children are fifteen years of age. Until they are fifteen the only report card that goes home to parents is the one the parent receives when they come to school twice a year. The student prepares the report card. The student collects a sample of her work for the last six months, puts it in the portfolio and invites the people who are important to her to come and meet the teacher. So the child invites her mother and father and other relatives or friends to come along for a thirty minute meeting with the teacher. They will ask the child to show his work and ask him questions like, how do you like your work? Or they may ask the student to explain what is good about his work and what needs improvement. This seems to me so foreign, but it is an accepted part now of the Danish culture, which has been the practice for the last thirty years. That evaluation

becomes self-evaluation. Evaluation becomes diagnostic and it becomes a cooperative exercise. And I said to them, how do you know if the children know their work? Do you not give them tests? They said that it would not be fair for students who have learning problems. All that tests can do is test how good they are at literacy and numeracy. What about their social skills and artistic skills, their creative skills, and their spiritual life? Exams cannot assist that. And so we have examples around the world that we could look to where there have been reforms of the assessment system. When children are fifteen years of age in Denmark, they have an examination that every child in the country does in two subjects, namely the Danish language and mathematics. In addition to that the children give three oral presentations. That is the Danish Assessment system, and that is the way they decide what courses the children will do at college. Danish engineers, designers, architects, teachers, politicians, etc. are just as intelligent and well educated as in other parts of the world. They have never needed any rigid external assessment system to control the way that they learn. As a result of that, I find Danish people quite inspirational because they can think for themselves. They take responsibility for their neighborhoods. They are able to speak up for the things that concern them, not to complain, but in order to build community groups where they can work for change and social improvement as well as environmental improvement. So I think that we need to be looking to ways in which we can gradually move towards something like the Danish assessment system. Perhaps it will take Australia over fifty years to reach that level. I am sure other countries can change much faster than the Australian education system, because one of the problems in Australia is its centralized system that makes it hard to get decisions made. In this system, we need to have some educational officials and educational ministers with a vision. In this way change could come about more quickly. Some changes in the educational system are needed. As I mentioned earlier, to put the values of sustainable development in the core of the curriculum requires three types of change. The first change is a change in the recognition that teachers need to have teaching methods to be professional. Secondly, there is a need for changing the educational system. The third point is to recognize that schools cannot do everything on their own and that schools can only go so far. And so adult education, NGOs and the media are also very important for students to learn that the things at school are the same as in society, because if they see a difference then the lesson will only be half-learned. I am sorry for talking too long but I get so excited about education in Denmark.

CHAIRPERSON

Thank you very much. That was very interesting. I wish we could listen to you more but time is very limited and limited time is our common commodity. In order to give a chance to other speakers, I would like to remind

you to limit your comments to three minutes. Dr. Bhandari will speak next.

Dr. Bishnu BHANDARI

I would like to say something about oriental values and norms. Every society has its rights and wrongs. The right ones are what we may call values. In Nepal some plants are considered the divine form of gods. And that is why they are worshipped. In some areas in the pacific region, some plants and animals are considered divine and thus looked up to and protected. In this context Nature and men go together. They are one part, or we can call them two parts of the same system. If one diminishes, the other one will also diminish. So this basically explains what I have to say about certain value systems. In Nepal, for instance, taking animals to graze in certain areas up to a certain month is prohibited. You will be socially penalized for breaking this rule. These are some examples of the values and norms that have been practiced. I think there are the composite terms that have been considered oriental values. I would like to call them the Asia-Pacific values. And those values are the determining factors for conserving the remaining forests or natural resources in many developing countries. Thank you.

CHAIRPERSON

Perhaps we can come back to questions and comments regarding the topic of values later. In the meantime, we would like to move on to another subject, which is logging or the destruction of forests. Someone requested more information on this. Another question to discuss is the use of non-wood paper. Perhaps Mr. Murugadas Loganathan should answer this question because he has touched upon some logging issues. Could you please introduce your country's situation?

Mr. Murugadas T. LOGANATHAN

Thank you Mr. Chairman. I will do my best to answer the questions regarding the logging issue. Malaysia is one of the leading timber producers in the world. Government is responsible in issuing licenses to loggers to log specified areas for a time period. For instance they would be given one year to carry out logging activities in a specified area. The following year, they would be given another area and so on. In reality the loggers would finish their entire share in a very short period of time and ask the government for more. An areas that were supposed to be logged for a year would actually be logged over in one month. This use to be the common practice those days. However, in the broader perspective if you are given new areas, like pristine forests, every year, the time will come when there will not be any forest left to log. Basically what was needed was sustainable logging methods. Loggers

were supposed to only log trees of a designated size, also termed as selective logging practices. They were not suppose to log trees that have not attained certain size and height; trees that line river banks and lakes; and trees on higher slopes or contour. Furthermore, 'mother' trees should not be logged. When I say mother trees, I mean trees that produce seeds for future plants. Logging companies do not actually follow this advice but instead go about logging entire forests, including smaller trees and mother trees. Opting for non-selective logging practices enables them to cut costs and make the operation easier to cut large areas at one time. In the long run, there will still be an added pressure for new logging areas. The government is again under pressure as economic returns from the timber industry is generally very high. Therefore the people related to the timber industry need to be taught, trained and made aware of the importance of sustainable forestry.

In the last decade, a healthy situation has developed in Malaysia in the timber industry. During the early 90's, there were lots of demand from the European market who wanted wood that were produced from a sustainable logged forest, therefore prompting local government to re-evaluate the logging operations that are currently being adopted. This include providing certification on sustainable managed forest throughout the country, which apparently has been implemented in some forest reserves. Interested clients on the other hand are willing to fork out to pay for the extra costs incurred in producing wood from sustainable managed forests. Thank you.

CHAIRPERSON

Thank you very much. Some aspects of logging activities have just been explained. Logging issues should not only be dealt with by the producing countries but also by the consuming countries. In other words, the supply side as well as the demand side should work together for sustainable forest management. Thank you very much for the information.

Other questions have come up from the audience but let me answer them so that we can effectively go on. Some questions were about partnership. I am actually working in a partnership among administrations, business and people, but there are still barriers among them. So do you have any good success stories on partnership among citizens groups, administrations and businesses? Or are there any good examples of coordination between schools, communities and NGOs, for example in Australia or any other country in the area of environmental education? The question raised comes from a teacher. What do you think about developing teachers or leaders? Also, we are now in the process of trial and error in developing teaching methods and materials in schools. So do you have any comments or advice on these issues? With regard to the curriculum, should we have environmental education as an independent subject? Or should we handle environmental issues in a cross-

curricular way? That is, should we allocate certain class hours for comprehensive studies and learning and should we use those classes to teach environmental issues and thereby increase awareness? Do you have any examples from which we can learn? The next question is addressed to Professor Abe. You mentioned that the evaluation of environmental education was discussed yesterday. Was this the evaluation of environmental education projects themselves or was it the evaluation of the learner's achievement? If the answer is the latter, I would like to know more about that. Perhaps some countries have some good examples to share. Now let us go back to the question of partnership. Perhaps you could give us advice on how to succeed in working out partnerships with citizens, administrations, and businesses. Anybody may answer this question.

Prof. Osamu ABE

Thank you very much. With regards to partnership, yes I am particularly interested in other countries' situations and I hope that other panelists from various countries can share their views and opinions. Environmental education and learning based on partnership in a broader sense involves all activities related to sustainability. The creation of a sustainable community is a broad goal and I think that environmental education is a means of realizing that. There are many existing examples in Japan. The Asahi towns of Yamagata City and Towa town of Iwate and Mishima City of Shizuoka Prefecture have been implementing initiatives where the local governments, citizens and businesses work together to create conservation-centered communities. They take into consideration the sustainability of ecology, society and spirit, as well as welfare, human rights, environmental issues and so forth. Of course these three towns are not the only examples. Local Agenda 21 has been formulated in many localities. Citizens should work together with local governments in devising Agenda 21. Shiki City in Saitama prefecture formulated an agenda, based on citizens' initiatives. Thank you very much. I really appreciate other countries' opinions too. So far only Japanese examples have been shared, so I would like to solicit examples from other countries as well.

Mr. Murugadas T. LOGANATHAN

I would like to highlight a success story in Malaysia. It happened about two years ago, when Wetlands International-Asia Pacific, representing an NGO, formed a partnership with the Hongkong and Shanghai Bank Corporation Malaysia, representing a corporate sector and the main local English daily newspaper in Malaysia (The News Straits Times), representing the media called Wetland Wonders which comes out on the last Sunday of each month. The partnership worked in such a way that the Hongkong bank provided the space for the article as well as the publicity while Wetland

International contributed the article. It was first launched in 1996. The articles were targeted at different levels and age groups in society, like children, adults, teachers, civil servants, and gave a large array of information about things that are happening in the country and in the region, global perspectives on wetlands and so on. The following year Hongkong Bank received an award for outstanding contribution to environmental awareness through this article in Malaysia. Consequently they decided to prolong the partnership and publications of the article have continued ever since. We are now going into our third year of publication. I do hope that this will go on for some time. Thank you.

CHAIRPERSON

Thank you very much indeed for that very specific example. I would like to go on to the next subject about leadership education or how to develop teaching materials. Would you please give us advice on this issue?

Dr. John FIEN

I would like to make a comment about writing teaching materials and some points about locally produced materials. It is quite possible for materials to be prepared by commercial companies and NGOs. However, I think that teachers will remain technicians so long as they remain people who implement the curricula and materials written and prepared by others. We need to develop professional development strategies where by teachers can develop skills for writing curricular materials themselves. Yet these are skills that teachers already have. Teachers do take the textbook and make decisions about what sequence they will put the information into students. And they will make decisions about perhaps incorporating something from the local newspapers that morning which would make it more relevant, or whether to use a video or a computer program to assist them. So teachers are very good at developing lessons that have a variety of teaching approaches in them. That strength that teachers already have is something that could be built upon. And I think a very good way of doing that is to have teachers work in small teams, for example in a primary school with teachers at a certain year level. In a secondary school it could be just the teachers of Geography, in one school or some teachers from three or four schools and they could work together to develop some materials that could be of common use. This requires some assistance. It requires some time in which to do it. Perhaps one afternoon, or a night per a term for them to work together on that project. Perhaps it requires a day release at a teacher service center. It certainly takes time to do that. Certainly it requires people who can be facilitators of the teachers' work and can encourage them to work together. The great advantage of that occurring is that, not only are you getting curriculum development but you are also getting professional

development at the same time, because curriculum development and professional development always go hand in hand. Professional development, which teaches art, working at improving their curriculum, is a waste of time. And similarly curriculum development done by experts without professional development for teachers will be a waste of time. So effective curriculum development goes hand in hand with teacher-professional development. An example of this is a program I had on eco-schools, which I offered to primary schools. Schools that took part in this program had to decide if they wanted to have a school environmental audit month. We had four workshops: The first workshop took place between 4:30 and 6:00 after school one day and we just discussed the environmental performance of the school. We ended by asking the teachers to come back with some ideas about what they might do to teach environmental auditing. Then we came back for the second workshop a week or two later, at the same time, and we discussed their ideas and came to an agreement whereby different teachers of different year levels would select a different topic. That would be their goal during the environment audit month. Teachers of grade one for instance might decide to improve the school garden. On the other hand, teachers of grade two might want to monitor the use of electricity at schools. Furthermore, teachers of grade three might decide to monitor the waste stream from the school while teachers of grade four might want to monitor the use of water and the teachers of grade five might look into paper use, and so forth. They were able to choose. The homework that we gave the teachers from that workshop was to meet at the year levels in small groups over the next few weeks and to make up some common lessons for all the grade five teachers. We made up some lessons on paper use to do in their language class, their mathematics class, in their science class and so on. And then we also developed strategies whereby they can have the students collect information about how much paper is used and how much of it is wasted.

In the process the students developed data collection techniques. They developed checklists and worksheets for data collection. Finally we came back together for a very important third workshop in which teachers of different year levels shared feedback and advice on different matters. This enables them to improve what they were going to do and also coordinate the different years. After that we made sure that the parents and the local newspaper knew about what was happening. The teachers incorporated their environmental auditing activities into their teaching for one month. It was not every lesson, but over a course of a month, children were learning about and incorporating their data. And finally, at the end of the month, the students reported to the school. Different schools of course have different ways of reporting. Some have special local government committees, that hears reports from the students about what they had done to monitor and make plans for saving resources. Others made reports to parents, while others put displays in shopping centers and some of

them put up displays in the City Hall so that they were able to share their information. And then we had a fourth meeting for teachers. Once again, we evaluated what happened, and discussed strategies by which we can continue the environmental management for the rest of the year and not just for a month. In the course of that time the teachers were making up their own curriculum materials and also gaining good professional development at the same time.

CHAIRPERSON

Thank you very much for that very specific explanation regarding the development of materials by teachers themselves. You have pointed out some very important points. I believe that some teachers are saying that they are very busy with their activities. At this point I would like to proceed to the next theme regarding the evaluation for environmental education which will be discussed by Prof. Abe.

Prof. Osamu ABE

The evaluation of environmental education is a very important topic not only for Japan but also for other countries. Is this evaluation of projects or is it evaluation of learners? If it is evaluation of learners, then more information is requested in this regard. On the other hand, if we are talking about evaluation of environmental education, first of all we must have objectives and purposes. Accordingly we have some activities and evaluation should be conducted. However, the evaluation of materials or projects is separate from the evaluation of learners. If we are targeting learners we must understand what is expected from learners. The objectives for learners should be clarified. And later on, against those objectives, we should have evaluation. In the past, we had that kind of evaluation and this does not match well with the evaluation of environmental education. I think that the overall evaluation of environmental education is very difficult compared with a case by case basis of evaluation. And we would like to continue discussion on this point afterwards.

CHAIRPERSON

Thank you very much. The next question is directed at Ms. Hao Bing. The question concerns the extent in the relationship of environmental education and human rights education in China.

Questioner C

A symposium for environmental education between China and Japan was held on the occasion of the inauguration of the Environmental Protection Center of Beijing. A Nature Trail contest is held annually in Japan, introduced

during that symposium. Last year and the year before, ten entries were sent to Japan from teachers of Junior High schools in China, and were awarded. We are now in the third year and schoolteachers in Beijing have told us that they do not send work systematically. Without asking for explanations or reasons, I sent a message to them expressing our apologies for our inability to help with environmental education activities in China. We also raised some questions regarding human rights education issues there. We did not expect to receive any work from China, yet individual students sent three pieces of work to us and we were able to award them. China is widely criticized for having an authoritarian regime. However I have the impression that China is trying to liberalize its political system and there is more freedom of speech and press. There have been many developments.

Ms. Bing HAO

Based on my experiences in Germany and Britain, there seems to be very little information about China. I saw history books about China in Germany and I found only three pictures. One was of the Cultural Revolution of China, and it was terrible. The second one was a big poster of the 1980's regarding China's modernization. The third one was, sadly, of the Tiananmen Square incident. This is a brief summary of the history of modern China. But actually it is not accurate. It does not contain sufficient information about China's history. The facts may be there but certain points are different. I am also aware of the nature trails project through a teacher in Beijing. Her name is Ms. Hong and she encouraged her students to join this project. I don't know why you have not received the entries yet but I will follow up this matter. There should be no problem. In response to the first question regarding the relationship between environmental education and human rights in China, I think that it is a very difficult question for me particularly at my age. From my experience, I do not see many links between human rights and environmental education in China at the present. I am not sure about the situation in Japan and other countries with regards to these links. However, I think that environmental education has a political side. I have been to various poor areas in the mainland provinces as well as in Tibet. There I saw one family that cooked their own food together with a pig's food in one big pot. It is really a difficult life out there. And if you come from a place like that, the meaning of human rights will obviously be different compared to that of people living in bigger cities. There are also differences in the way of thinking between people living in China and those outside China. So I think there is a need to consider these points in order to better understand human rights and environmental education issues. I hope that it will be a part of environmental education in the future. Thank you very much.

CHAIRPERSON

Thank you very much for your answers. We appreciate your very candid response to the delicate questions. I am very glad to have this chance to talk about these things with you. We would like to have more opportunities like this so we can have a more constructive partnership toward the future in the areas of the environment and sustainable development. Thank you very much.

Now let us finish with the questions raised from the floor. Unfortunately, we have to skip some questions. We have to proceed and end this session. However, panelists who wish to make additional comments are requested to limit their statements to two minutes.

Prof. Osamu ABE

There was a question raised by Mr. Kobayashi regarding the topic of the oriental way of thinking towards nature. Let me focus on this topic for two minutes. Mr. Kang introduced this concept and reflected on environmental ethics. This is also related to sustainability. Mr. Kang mentioned that environmental ethics are related to values. Dr. Fien has touched upon those points as well. I agree with Dr. Fien's views. I have been interested in the topic of environmental ethics. Japan has its own perspective towards nature and there is always the big question of how to incorporate this in our study of the environment. We are still looking into this at present. When we think of advancements in research on environmental education, we have to keep in mind that it takes time and we need enough time to develop it. There is a need to objectively look at the issue of environment. We have been looking at environmental ethics in Asia and Japan. In a short time, we have been trying to develop at a fast pace. We have these traditional ethics for nature on one side and the market economy propulsion on the other side. This is IGES. Compared to other places in Asia, Japan advanced quickly in the area of industrialization. However we have been facing some conflicts. The development in Asia was also very rapid. Although there is diversity in the different countries, there is also a sense of harmonization between people and nature in each country. So I think we should look back on our lifestyles and how we were able to integrate this. Through Asia, we see Japan. So I think we can do that. However, I cannot go into details due to the limited time. I would like to call on Dr. Bhandari.

Dr. Bishnu BHANDARI

I think many points have been raised. Basically the concept of environmental education, whether we are in Japan, Nepal, India or Pakistan has been traditionally linked to our systems. However, environmental

education was not really recognized as an important issue until recently. In Nepal for instance, people boil water when someone gets sick. Although unaware of it, a lot of people in Asian countries are actually practicing the ideas and concepts in a very natural process. So I think that the concept of environmental education is growing in developing countries and I am very happy to tell you that we have received reports from all 26 countries. Most of them say that they have been practicing environmental ethics and values but under certain compulsions, they have not been able to properly follow those practices.

Mr. Murugadas T. LOGANATHAN

To add to Dr. Bhandari's comments, I would like to contribute something from the Malaysian perspective. What I would like to see is more effort from the respective local governments promoting environmental education. It is time to organize a broader approach to addressing matters concerning environmental education. This development will enable them to work with a variety of people and sectors in Malaysia. It should be a concerted effort and we should bear in mind that future generations must not be denied these natural entities. This should be the goal of an environmental education. Thank you very much.

Ms. Bing HAO

I would like to make a point regarding the development of teaching resources. Last year the People's Education Press, which is the main and only press for publishing textbooks for Chinese students, held workshops on Education for Sustainability. They invited experts from WWF as well as experts from outside China. In this workshop, they challenged the research staff and editors to try to include the meaning of the concept of education for sustainability and also helped them to build methods for teaching ESS. After that these researchers and editors prepared packages or reference books according to our subject. I think that this is very typical of centralized education. One of my friends worked in this educational press and now he is rewriting geography textbooks. His ideas were different and it made the books look different. I think it is a good idea to develop teaching resources in countries with this kind of educational system. Thank you very much.

Mr. Hyung-Shing KANG

Korea has launched experimental projects aimed at separating the environmental subjects. It is still too early to tell whether the projects are successes or failures. We are still in our fourth year. Furthermore, environmental subjects are optional. During the first year, very few schools

selected this subject. However, last year about 13% of schools nationwide selected the subject. To some extent I would say that it is successful. But many problems still exist. I anticipate that interdisciplinary environmental education will be possible in this subject and oriental values and thoughts can be included in the subjects. Everything is still ongoing right now, so I look forward to more presentations in the future regarding the results of these projects. Thank you very much.

Dr. John FIEN

One of the interesting innovations in this area in Australia is that the emphasis upon sustainability has meant that as part of the curriculum planning process a new teaching area has been developed for students from year 1 to year 10. The centralization of education does not mean that any teacher can do anything they want, but rather it is the role of governments to provide broad frameworks into which teachers are able to develop their programs. And as part of the broad framework, the Australian government has developed 8 key learning areas. These are English, other languages, mathematics, science, technology, health, the arts, and a new one, called studies of society and the environment. To each of these areas, the government has prepared broad guidelines, which they call a curriculum framework and also attainment targets, which are assessment outcomes that the students should be able to achieve at different age levels. So that provides a framework into which teachers can plan their work. However, the teachers are able to choose whatever methods they use, what resources they use, and what case studies they use. I find that that method of curriculum development combines the best of the centralized structure but leaves the important day to day teaching decisions to local schools. And so in that context, I have described the example of a school deciding to have an environmental audit month, where they can prepare the materials and develop the thinking skills, the scientific monitoring skills, the problem solving skills that are important attainment targets in the study of society and environment syllabus. Thank you.

CHAIRPERSON'S SAMMARY

I believe that the presentations were well summarized. As for the topics of this symposium I believe they are difficult to summarize. However I think there were four major points. First, for environmental ethics or values, the question would be how to evaluate them. The prerequisite for this is the diversity and tradition of each nation. And we have to take these into consideration for a sustainable future and try to utilize those traditional values for education. The second point is related to formal education and adult education in society, and how we can effectively enhance environmental education. There were many cases presented and also some barriers and

obstacles were introduced. To study these cases I think it is important for us to gather such information and to know those episodes, at the same time have a system in society that decides what kind of framework is necessary to promote this. What about materials or curricula? Is there a necessity for an independent subject? How should we deal with this problem? I believe that in the future we should consider this matter. Regarding methodology, success and also case studies, I believe that there is a lot of information on these. We will try to compile such data and come up with a successful result. For the third point, I think that the facilitation of such information requires a small information center or clearinghouse. In the Asia and Pacific region, conferences on environmental education should be regularly held as well as networking for information exchange in order to achieve its goals. Fourth is the evaluation of environmental education. A comprehensive or broad type of evaluation is very difficult. However, to promote this kind of education, we need to consider and reform education itself, and to nurture students who will be leaders in this field and to support them. I have tried to summarize the discussion into four points. I may have missed some points, however, let me close today's symposium. Thank you.

Information

Environmental Education Project
Institute for Global Environmental Strategies

Research building of the Shonan Village Center
1560-39, Kamiyamaguchi, Hayama-machi,
Miura-gun, Kanagawa Prefecture, Japan 240-0198
Phone: +81-468-55-3840
Facsimile: +81-468-55-3809
E-mail: iges@iges.or.jp
URL : <http://www.iges.or.jp>

[Tokyo office]
Nippon Press Center Bldg. 8F 2-2-1, Uchisaiwai-cho,
Chiyoda-ku, Tokyo, Japan 100-0011
Phone: +81-3-3595-1081
Facsimile: +81-3-3595-1084

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Editor: Osamu ABE

Editorial Staff: Michio TAKAKU, Bishnu BHANDARI, Masahiro TAKAHASHI
Masahisa SATO, Ko NOMURA, Kayo MORIMOTO
Ryoko FUKUHARA, Susan HENDY

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