The Second UNESCO/Japan Seminar on Environmental Education in Asian-Pacific Region

FINAL REPORT

UNESCO

The Second UNESCO/Japan Seminar on Environmental Education in Asian-Pacific Region
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Opening Remarks

Mr. Tomonori Kudo
Secretary General
Japanese National Commission
for UNESCO
Ministry of Education, Science,
Sports and Culture

Thank you Mr. Chairman,
Professor Okamoto, President of the Tokyo Gakugei University,
Professor Yamashita, Director of the Field Studies Institute for Environmental
Education,
Distinguished participants,
Ladies and Gentlemen,

It is my great pleasure to say a few words on behalf of the Japanese National Commission for
UNESCO and Monbusho (Ministry of Education, Science, Sports and Culture) at the opening of
the Second UNESCO/Japan Seminar on Environmental Education in Asian and the Pacific
Region.

First of all, I would like to express my warmest welcome to all the participants of the
seminar.

Last March, Monbusho and the Japanese National Commission for UNESCO held the First
UNESCO/Japan Seminar on Environment Education in Asian and the Pacific Region at the
United Nations University, Institute of Advanced Studies in Tokyo. Participants examined and
clarified present situations and problems on environmental education in the region, and discussed
how to further promote environmental education. This Second Seminar is held in cooperation
with Tokyo Gakugei University as co-organizer, focusing on environmental education materials
as suggested by the first seminar.

Today, International Organizations including UNESCO are working to find out best solution
to the environmental problem as one of global issues. With growing world-wide concern over
environmental matters, it has been recognized that education has significant role to make deepen
young people's understanding of the importance of environmental perspectives for achieving
sustainable development.
In Japan, the Central Council for Education, an advisory body for the Minister, made the first report on “The model for Japanese education in the perspective of the 21st century” in 1996. In that report, following three perspectives on environmental education are pointed out: that is, “learn from the environment”, “learn about the environment” and “learn for the environment”.

First, through a number of different hands-on activities, children need to cultivate a rich sensitivity toward the natural world and to develop an interest in the environment, so that they will “learn from the environment”.

Secondly, by deepening their understanding of the interaction between human and the environment as well as of the relation between environmental problems on the one hand and the socio-economic system and contemporary life-styles on the other, so that they will “learn about the environment”.

Thirdly, by acquiring an attitude which leads to concrete and practical action aimed at preserving and creating environment, so that they will “learn for the environment”.

Based on these suggestions by the Council, Monbusho has taken various measures on environmental education including seminars for teachers in charge and support for the model projects for promotion of environmental education.

The theme of this seminar, “Analysis and Evaluation of Environmental Education Materials: Toward the Development of Quality Education Materials” deals with a common key element for the promotion of environmental education in Asian and the Pacific region. I hope that this seminar will contribute greatly to the improvement of environmental education materials in the region and will strengthen regional cooperation in this field.

In closing, I would like to express my sincere gratitude to President Mr. Okamoto and all staff concerned of Tokyo Gakugei University for the preparation of this seminar. I wish you each a professionally and personally fruitful experience here in Tokyo and a most successful seminar for all.

Thank you.
Opening Remarks

Mr. Yasumasa Okamoto
President
Tokyo Gakugei University

Mr. Tomonori Kudo, Secretary-General, Japanese National Commission for UNESCO, Ministry of Education, Science, Sports and Culture,
Mr. Masayuki Inoue, Director, International Affairs Planning Division, Science and International Bureau, Ministry of Education, Science, Sports and Culture,
Mr. Takashi Ueda, Planning Director, Science and International Bureau, Ministry of Education, Science, Sports and Culture,
Professor Shuji Yamashita, Director, Field Studies Institute for Environmental Education, Tokyo Gakugei University,
Distinguished Participants,
Ladies and Gentlemen,

It is my great honour and pleasure to make a welcome speech at the opening ceremony of the Second UNESCO/Japan Asian-Pacific Seminar on Environmental Education. I express our hearty welcome to you all the participants from overseas and domestic on behalf of Tokyo Gakugei University, which cosponsors and coorganizes this seminar with the Ministry of Education, Science, Sports and Culture. I am grateful to all the people of the Japanese National Commission for UNESCO and the Field Studies Institute for Environmental Education, Tokyo Gakugei University who have been preparing for this seminar.

Today, environmental problems are becoming more and more urgent globally and locally, and the importance of environmental education is becoming the greater for it. It is to be regretted, but we can neither escape from the present critical global condition nor just stand by with folded arms, doing nothing. We are responsible to the next generation and posterity for the preservation and improvement of the global environment.

Our university, Tokyo Gakugei University, is a leading teacher-training university in Japan, and we have been putting a great deal of effort into environmental education, especially since the foundation of our former institute of the present Field Studies Institute for Environmental Education in 1987. We opened a new graduate course of environmental education for teachers in April last year. In February this year our Field Studies Institute organized an international symposium on environmental education in the global age, with good success, I believe, and it took part and played an important role in first UNESCO/Japan Seminar on Environmental
Education which was held in March this year.

The theme of this second seminar is 'Analysis and Evaluation of Environmental Education Materials: Toward the Development of Quality Education Materials.' It is crucially important to have good educational materials if we are to bring up environmentally responsible citizens. I hope this seminar will be an opportunity for exchanging and creating a good many ideas and insights.

I also hope this seminar will bring all the participants into a understanding and friendship with each other. Thank you.
Opening Remarks

Dr. Shuji Yamashita
Director
Field Studies Institute
for Environmental Education
Tokyo Gakugei University

Ladies and gentlemen, and distinguished delegates, it is my great pleasure to welcome you to this second UNESCO/Japan seminar. On the occasion of the opening, I would like to have a few words as Director of Field Studies Institute for Environmental Education of Tokyo Gakugei University.

Needless to say, environmental education is very much important. Nowadays its importance and necessities are so often told and insisted at every opportunity by almost everybody. But it is not so easy to do environmental education sincerely as it is said "Easier said than done".

As myself, an individual I like a saying "Silence is golden", however this is not useful nor practical in the present global society any more. At the present time it is required to exchange information broadly, to express ideas and opinions each other, to discuss and share them, and to act together for the environment.

According to the suggestions of the First Seminar on this environmental education, the main theme has been decided to be "Analysis and Evaluation of Environmental Education Materials: Towards the Development of Quality Educational Materials as our President Okamoto mentioned just before. Moreover, we set up the following four sub-purposes of this seminar: first is to share existing environmental education materials in the Asian and Pacific region; second to analyze and evaluate some of these materials ; third to discuss considerations in developing quality environmental education materials; and fourth to discuss the organization and themes for future seminar, in particular for the third seminar next year.

This time of the year must be very busy to everybody, however it a is great honor and privilege for us to greet you as delegates from all member countries and all Japanese members to the UNESCO/Japan Seminar on Environmental Education.

I appeal to everyone present here for your heartful cooperation, active support, and useful discussions. Then, perhaps we need much time, so I'd better quit my talk now. Thank you so much.
Opening Remarks

Mr. Masamitsu Oki
Deputy Secretary General
Japanese National Commission for UNESCO
Ministry of Education, Science, Sports and Culture

Professor Okamoto, President, Tokyo Gakugei University,
Professor Kobayashi, Vice-President, Tokyo Gakugei University,
Professor Yamashita, Director, Field Studies Institute for Environmental Education, Tokyo Gakugei University,
Distinguished participants,
Ladies and Gentlemen,

It is my great pleasure, to take this opportunity, to give a few words of greetings to all participants of this seminar on behalf of the Japanese National Commission for UNESCO and Monbusho; the Ministry of Education, Science, Sports and Culture, at the reception of the Second UNESCO/Japan Seminar on Environmental Education in Asian and the Pacific Region.

I understand, today, participants introduced their country reports on materials and resources relating to environmental education. I am sure these reports will be springboards of this seminar and fully contribute further discussion of next two days. As Mr. Kudo said at the opening ceremony this morning, environmental education is one of the key elements of education reform in Japan in accordance with growing awareness of environment and sustainability in global scale.

We need to take more effective and immediate action for environmental preservation and, at the same time, to seek strategies for the sustainable development of both environment and human well-being. Various crucial global issues, such as the ozone layer protection and climate change, have been studied actively under the international frameworks since 1992, when the “Earth Summit” in Rio de Janeiro was held. Japan, of course, has been taking part in these frameworks vigorously. Last December, Japanese government hosted the third session of the Conference of the Parties of the United Nations Framework Convention on Climate Change (COP3) in Kyoto.

Calling the attention of the people to hot issues of environment, at the same time, we should make every effort to strengthen the situation in which children feel the nature closer to them. In
this context, there is an essential need to promote environmental education particularly for younger generation. Various environmental factors are introduced in school programme towards “Eco-School.” It is necessary to develop quality environmental education materials for school activities. I am certain that different approaches and practices have been developed in each country and region. I hope that we can find new ideas and future direction through discussion in this seminar by examining how to make use of educational resources for environment and how to analyse and evaluate educational materials, and to contribute to further development of environmental education in Asia and the Pacific region.

I hope that this reception will be a good opportunity to exchange opinions in more relaxed atmosphere and to get along with each other, which will facilitate active discussions in the next two days of this seminar.

Lastly, I would like to extend my deepest thanks to all members who have devoted themselves to the organizations of this seminar. It is my sincere hope that this seminar will be fully productive for you and will give you many good memories and experiences during your stay.

Thank you.
Opening Remarks

Mr. Shiro Kobayashi
Vice-President
Tokyo Gakugei University

Mr. Masamitu OHKI, Deputy Secretary-General, Science and International Bureau, Ministry of Education, Science, Sports and Culture,
Mr. Masayuki INOUE, Director, International Affairs Planning Division, Science and International Bureau, Ministry of Education, Science, Sports and Culture,
Distinguished Participants,
Ladies and Gentlemen,

It is my pleasure to make a few remarks at this reception of the Second UNESCO/Japan Seminar on Environmental Education in Asian-Pacific Region 1998. This morning, Mr. KUDOH, Secretary General, Science and International Bureau, Monbusho, Professor OKAMOTO, President of Tokyo Gakugei University and Professor YAMASHITA, Chairperson of this Seminar gave all of us very warm greetings and encouraged us from Monbusho's and Japanese National Commission for UNESCO's standpoint, and from University's standpoint or on scholar's equal footing.

Last October, we, Tokyo Gakugei University, had another seminar of Asia-Pacific Programme of Educational Innovation for Development planned and sponsored by UNESCO and Monbusho. It is the seminar on Educational Technology which started in 1974 just 25 years before.

Today, all the people who join this Seminar are surely pioneers of this memorial seminar. That is to say, we are required and expected a kind of trail-blazing effort by the young generation. I expect that children of us would appreciate our first step to discuss on Environmental Education in this building.

By the way, everytime when I think of environmental education, a very short play comes to my mind. The title of the play is “This Is the Rill Speaking” written by Lanford Wilson. This OFF-OFF Broadway production was opened as part of La Ma Ma program at the Martinique Theatre in New York in 1966.

Main characters of this play are Willy and Judy, a young brother and an elder sister. He is 14 and she is 15 years old. They are just average son and daughter. He tries to smoke and drink
secretly with his friends. She wants to go to shopping or movie with bathing costume. They quarrel with their mother sometimes and everytime reflect on their conducts.

But at the end of the play, they speak of their future of their life.

Willy I thought I might be an artist. And if I write pieces for the paper too, then I could write pieces about Nature. And make people really notice Nature. You know?
Willy Only it'd be about the Nature around us and that we never notice. You know?
Judy That's be nice ....
Willy It would be just about the wonders of Nature. And I'd have a lot of characters and they'd all talk.
Judy Uh-huh.
Willy And the meadow would talk. And the brook would talk. And the hills would talk and the berry bushes like about the food they supply to valid animals and wheat fields and things.
Judy That's beautiful.
Willy And I figure they'd each one have a little speech that they'd just say out directly about themselves like: “This is the rill speaking over here, this is the small stream speaking. They've been tearing down and weeping that Nature is too tired and too old to ...

The play abruptly finishes here. When I saw in 1967, there was a long silence. After 15 or 20 seconds, all the audience clapped hands in applause.

The author could give a heavy and huge message on environmental problem just in 35 minutes play.

Let's drink to the health of all the people present here, our sons and daughters, and to Nature!
Keynote Speech

Ms. Karen Hollweg
North American Association
for Environmental Education

Because they have had the foresight and invested the resources to bring us all together, I would like to begin by thanking the Japanese Ministry of Education, Science, Sports and Culture, the Japanese National Commission for UNESCO, and Tokyo Gakugei University/ Field Studies Institute for Environmental Education, as well as United Nations University/ Institute for Advanced Studies and UNESCO Principal Regional Office in Asia and the Pacific.

I am excited to be here because I think we have a great opportunity to do some very important work together. When Atom contacted the North American Association for Environmental Education (NAAEE) and I was first invited to participate with all of you in this Seminar on the Analysis and Evaluation of Environmental Education Materials, I was thrilled. I was eager to learn from each of you, and I wanted to share with you what we have done and learned. In NAAEE we have been working on this subject for a few years now – and, as always, the more we know, the more we know we need to know. In other words, we have made progress, and I will tell you about that, but we also have many questions and know that there is still a lot to learn.

I have organized this speech around four questions:

1. We all have environmental education materials, and each country is displaying some of their best at this meeting. As we review each other’s materials, we will see diversity, because the issues that are most relevant to learners in each of our countries, the educational systems we have, and our forms of government are quite different. But, given that diversity, what makes environmental education materials “good”? In other words, how do we judge the relative merit of existing materials and define a standard to aim for in developing new materials?
2. Given a certain collection of environmental education materials, what combination is needed for a comprehensive environmental education program? That is, **what should school-age learners know and be able to do once they have been exposed to those EE materials?**

3. **Are we creating environmentally literate citizens?** From the time of the Belgrade Charter and Tbilisi Declaration in the 1970's, we have said we want our students to be aware, and to have skills and knowledge to understand the environment, and to behave in a way that solves environmental problems and prevents the creation of new ones. Are we doing that? or Are we just busily using EE materials?

4. I will conclude with some remarks regarding the question: **how should we be going about our work? . . . or what processes seem to work best?**

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**What makes environmental education materials “good”?**

About three or four years ago, NAAEE started addressing this question through the National Project for Excellence in Environmental Education, thanks to generous financial support from the Environmental Education Training Partnership, the United States Environmental Protection Agency, the National Fish and Wildlife Foundation, the National Environmental Education Training Foundation, and Northern Illinois University, where Bora Simmons, the head of the project is a professor. This support, over several years, has enabled us to use a process of draft, critique, and consensus to develop the document entitled Environmental Education Materials: Guidelines for Excellence.

I want to tell you a bit about this process, because I think it is as important as the document itself. It began with a writing team, which came together to discuss the ideas that should be included, and a writer, who produced drafts that they reviewed and revised. Once this group was satisfied with the initial product, it was widely circulated for review and critique. Project leaders
made presentations, conducted forums, held meetings with interest groups, and wrote newsletter and journal articles. Over 1,000 teachers, education administrators, environmental scientists and curriculum developers provided comments, suggested revisions, and shaped the consensus document that was finally published. Through this process many of us, in addition to the writing team and project leaders, thought seriously about what makes environmental education (EE) materials excellent. The process led us to believe in and support the resulting product.

There are six Materials Guidelines:

1. **Fairness and Accuracy** - In addition to being factually accurate and giving balanced presentations of different viewpoints, we believe that EE materials should give students opportunities to ask about and sample different viewpoints and explore in depth the reasons why different people see the same issue differently.

2. **Depth** - This is one of the most important and yet one of the most difficult guidelines for educators and curriculum developers to understand. We know that learners need repeated opportunities to grapple with a concept. Just reading about or hearing a few lectures on a concept like biodiversity won’t enable students to understand the concept. Young children need to be actively involved in investigating the diversity of organisms on their school grounds at different times of year. They need opportunities to experience the diversity within species as well as the number of difference species and the number of different habitats or microhabitats. At older ages, students need experiences that acquaint them with different ecological regions and places on the globe, with different economic, social and political systems, and with the degree to which biodiversity is valued in each, noting the costs and benefits of preserving biodiversity, and so forth. You get the idea. EE materials must repeatedly return to important concepts and issues at different ages, in different contexts, at different scales, and through different types of learning experiences.

3. **Emphasis on Skills Building** - Materials must enable students to build the lifelong skills necessary to address environmental issues – such as collecting, analyzing and presenting data in charts and graphs, explaining what it means, identifying problems that need to be addressed,
creating possible solutions, and working with others to implement and evaluate those solutions.

4. **Action Orientation** - In our country, we believe EE materials should promote civic responsibility and encourage learners to use their skills and abilities as a basis for action.

5. **Instructional Soundness** - EE materials must be relevant to learners, starting in their immediate, everyday environment and expanding from there. They must provide different students with ways to learn that are appropriate for their learning styles. They must clearly set forth appropriate goals and objectives for learners and suggest ways to measure or assess achievement of them.

6. **Usability** - EE materials should be well designed and easy to use. They need to be accompanied by professional development that introduces users to them and supports their intended use, field testing that proves their usability in varied settings, and evaluations that show that the goals and objectives are indeed achieved when the materials are used as set forth in the materials.

**What should school-age learners know and be able to do**

**once they have been exposed to a comprehensive collection of EE materials?**

It is clear to us that to achieve excellence in EE we must do more than just produce materials that meet the six Materials Guidelines. We must also make sure that our students are exposed to a comprehensive collection of EE materials, and we must clearly define the entire range of things that school-age learners should know and be able to do so that we know the outcomes we aim to achieve. To address this question the Project for Excellence, again under Bora Simmons’ leadership, is creating what we are calling the Learner Guidelines. These guidelines are now being revised, based on the last round of input from reviewers, and will be published early in 1999.

The Learner Guidelines are organized around the following four themes:
1. **Questioning and Analysis Skills** - which includes curiosity and asking questions, designing investigations, collecting and organizing information, and developing models and/or explanations.

2. **Knowledge of Environmental Processes and Systems** including
   - **The Earth as a Physical System** - geological and chemical processes and energy concepts,
   - **The Living Environment** - concepts of organisms, populations, heredity and evolution, and ecological processes,
   - **Humans and Their Societies** - understanding cultures, political and economic systems, global connections, change and conflict, and
   - **Environment and Society** - concepts of human and technological impacts on the environment, concepts of resources and resource distribution.

3. **Skills for Understanding and Addressing Environmental Issues** including:
   - **Skills for Analyzing Environmental Issues** - sorting out implications of issues and forming personal opinions,
   - **Skills for Investigating Environmental Issues** and for evaluating alternatives, and
   - **Decision-Making and Citizenship Skills** - evaluating the need for action, deciding what to do, acting and evaluating results.

4. **Personal and Civic Responsibility** which includes recognizing citizens’ rights and responsibilities in our democracy, accepting personal responsibility and the effects of their action.

   Under each of these themes, specific student outcomes are described for grade levels K-4, 5-8 and 9-12, and examples are given of the kinds of learning experiences that are appropriate at different grade levels.

   Recently, we put together three checklists, one for each grade range, on which we listed the skills and understandings that students should be developing through a comprehensive EE program. At a NAAEE Conference symposium with 50 to 60 people, we asked each person to think about
an EE program that they are responsible for or use, and for each skill or understanding, to check whether their program “fully,” “partly,” or “does not” address it. While we do not expect any one program to address all skills and understandings, we believe it is important for educators to know what is addressed by their programs. Then, for those areas not addressed, we either need to find complementary programs for our students or we need to supplement our existing programs to extend comprehensive EE opportunities to our students.

I would like to convey two additional thoughts, regarding these guidelines. First, as Bora has said, neither the Materials Guidelines nor the Learner Guidelines were designed to be static. We must allow them to evolve as we learn more. At the local and state level, they will be revised or altered to fit the needs of those who choose to use them. Second, I see the Materials and Learner Guidelines interacting with each other and think it would be useful to integrate the consideration of both by constructing a three-dimensional matrix. We could use such a device to analyze the multiple program elements included in EE programs at each grade range to ensure that learners have opportunities to develop skills and abilities that encompass all elements of our environment.

**Are we creating environmentally literate citizens?**

The need for us to pay attention to the multi-dimensional aspects of environmental learning to create a truly comprehensive EE program is great. It was underscored in a recently completed study. In *Environmental Literacy in the United States: What Should Be . . ., What Is . . ., Getting from Here to There*, Trudi Volk and Bill McBeth analyzed 38 evaluation studies of EE programs. The studies included programs for elementary school children, secondary and college students, and adults. They evaluated the effects of many different types of instruction from television programs and special events or field trips to workshops and in-depth year-long curricula. The studies measured one or more learner outcomes including attitude, ecological knowledge, socio-political knowledge, environmental issue knowledge, cognitive skills, and responsible
environmental behavior. The authors noted that some instruments used were valid and reliable, and others were not. They pointed to the need to improve the quality of the instruments used in evaluation studies. But despite this, they found that there is adequate data to conclude that longer term, logically planned and sequenced instruction that deals with multiple dimensions tends to produce more positive impacts. This indicates that we need to pay attention to the comprehensive nature of the EE programs we offer students.

**How should we be going about our work?**

As I close, I want to briefly describe one more project that was concluded this year, because it sheds light on the importance of involving teams of people in our work. *Changing What We Do: Constructing a Team-Based, Problem-Centered Professional Development Experience* describes a three year project in which teams of teachers, school district curriculum coordinators, university teacher educators, and nonformal educators from NGO’s working with schools, worked together to plan and implement ways of building hands-on/minds-on schoolyard investigations into the ongoing classroom curriculum.

The evaluation of this project documented the benefits of using teams. Both the evaluation and reports from participants highlighted three points. The project:

- **Led to professional growth for all types of participants** - for example, teachers changed the way they teach and students learn in their classes, district curriculum specialists became convinced of the effectiveness of spending funds on team-based professional development work (not just on conducting classes), university people learned new strategies for working with teachers, and participants from all types of jobs thought deeply about what they were teaching/doing and why.

- **Built buy-in and involvement** - by engaging participants in setting their own specific goals and empowering them to achieve those goals.

- **Developed leaders** who were enthusiastic, competent and capable of disseminating this work.
This, plus our experiences with the draft, critique and consensus process used to develop the Materials and Learner Guidelines, convince me that we must build in teamwork to involve educators as we analyze, evaluate, and improve EE materials. I think this is important no matter whether your education system is “top down” with a national curriculum or is based on “local control” where every teacher is free to choose the curriculum for his/her class. In either case, a process that involves others is powerful because it creates educators who are enthusiastic, have thought about the innovation and have bought-into it, and who can be advocates and leaders as the products are disseminated.

I hope that this summary provides you with some insights from our experiences in working towards excellence in environmental education in North America. I encourage you to consider both products and process as we analyze and evaluate EE materials here. I look forward to working with and learning from you/your experiences as we move towards the development of quality materials through this seminar and in the coming years.

Thank you for your attention.

REFERENCES CITED


I. The present situation and problems on environmental education in general

Environmental education is getting stronger in at least three ways:

I. integration of environmental education directly into a new curriculum area called Studies of Society and Environment.
II. appreciation of the relationship between education and sustainable development policy.
III. abundant curriculum resources.

The chief problem is lack of teacher education and inservice on how to use the available resources.

II. The present situation and problems on environmental education curriculum/program materials and resources

The chief problem is TOO MANY resources although there is a lack at the early primary school level and in non-traditional environmental education subjects such as Arts, Language and Health. Many organisations produce materials such as publishers, government departments, industry, NGOs and teacher associations - often duplication. There is very poor understanding of the link between materials development, teacher development and improved learning.

III. Examples of environmental education materials and resources

1) The Australian Teachers’ Guide to World Resources - 11 teaching units that develop enquiry skills and a conservation ethic. Oriented to junior secondary students.

2) Eco-Consumers - a primary school teaching guide on sustainable consumption.

3) ECOHOTline - a WWW guide to internet sites for environmental research by secondary school students.
I. The present situation and problems on environmental education in general

China is the largest developing country in the world. During the 20 year’s opening and reform (1978-1998), China’s economy has been developed at the top speed, country’s comprehensive power has been strengthened obviously. However, with the economic developing, a series of environmental problems appeared. Such as water quality pollution, forest cutting, soil erosion desertification and air pollution, etc. Therefore, it’s urgent to reinforce the environmental protection and to improve people’s awareness of environmental protection. Environmental education is especially critical for youth and children. Because it relates closely to our country’s future, environmental education is more and more important nowadays. The items of taking good care of environment and paying attention to sanitation are included in China’s primary schools and middle school’s student regulation. Schools have not only opened same environmental education curriculums and supplied some outside reading materials, but also held birds protection, trees planting and garbage disposal activities. Colleges have held lecture on economy and ecological environment, social economy sustainable development strategy as well, and have sent college students to countryside and industrial enterprise with the experts to propagate the environmental protection knowledge and guide the local people with technique.

Actually, China’s environmental education has its problems. Shortage of funds made school environmental education activities and the conducting of environmental protection reading materials for different ages students become a big difficulty. Meanwhile, there is a problem of proportion of students entering schools, the purpose of school education in primary and middle schools is to entering university. Studying task is so heavy so that no schools, no parents are willing to let the students pay extra attention to environmental education. This situation makes China’s environmental education far away from our satisfaction.

II. The present situation and problems on environmental education curriculum/program materials and resources

Environmental education is different in China’s different areas. Beijing, Shanghai, Xiamen,
Dalian, Zhuhai, Guilin and Yantai have got achievement in environmental education. Citizens of these cities held various kinds of movements on environmental education. For example: formulate civilization rules -- No spitting; No dumping fruitskin and rubbish; taking care of woods; No smoking, etc. Our government also spent more in planting trees and managing the three wastes (waste water, waste air, waste dreg). Every March 12, is our National Tree Planting Day. From March to April, students from schools and colleges anticipate the tree planting movement and gain environmental education through this activity. In addition, with the United Nation’s World Environment Day movement and China’s Love Birds Week movement, school at all levels launch many environmental education activities; rehearsing performances and compiling books about environmental education; writing compositions in writing class on the subject of environmental education; making environmental pollution report after investigation, etc. Environmental education courses are not enough is a striking problem in primary and middle schools. Teaching materials written for primary and middle schools are simplistic and short in numbers. Some related activities such as environmental resources investigation, air pollution, noise pollution and water pollution investigations are limited under the condition of funds shortage, besides, many units are not for those environmental education activities, they don’t think they have the duty to help schools but treat it as a burden. A certain amount of parents and school teachers also worry a lot about it, for environmental education will of course occupy students’ studying time and affect their studies.

III. Examples of environmental education materials and resources

Here are 3 examples of China’s environmental education.

1. Students of grade 5, class 3, in Hongmiao primary school, Xicheng district, Beijing city, classified the garbage.

In China, primary pupils’ age varies from 6 to 12 years old. Children at this age are very imitative and they like to accept new ideas and things. To instil environmental protection thoughts is helpful for them to build good living habits and environmental protection concept in their minds.

First, teacher let students see up-to-date environmental protection movies and videos both
from abroad and domestic, they also invited experts to make lectures on environmental protection, so as to have the students gain some garbage classification knowledge and build bulletin to propagate environmental protection. Second, teachers demonstrated and taught the students how to do, and let those who have classified the garbage at home introduce their experience. Third, teachers asked their students to classify the garbage at home respectively. This class also held a garbage classification contest, choosing the garbage retrieving king among the students. Through this activities, the whole class collected waste paper 100kg, waste plastic 30kg, waste metal 50kg and 100kg batteries. One parent said: “It’s a miracle that my lazy pig become a diligent bee by taking part in this garbage classification activity.” A great many students not only did the job themselves, but also spread the method to their neighbors, and received prizes from the community. In 1998, June, Beijing Environment and Sanitation Bureau presented the garbage classification boxes to this primary school.

2. Beijing Aviation University attached middle school made environmental education and environmental investigation teaching activity report.

Students are in grade two of senior middle school. The central idea of this activity is to know and to take care of our environment by taking environmental education and environmental investigation. The teaching course is biology textbook, book 1, chapter seven. Biology and Environment (senior middle school textbook). This activity is divided into four steps. 1) to study the text, Biology and Environment; 2) to make group discussion on it; 3) to do on-the-spot observation and investigation; 4) to finish the investigation report. The whole activity is divided into 4 groups. The first group is to begin their investigation at Beijing Jian’an Xilu morning market north from China Children Studio. The second group is to make a comparison between Beijing Aviation University and Beijing Medical Science University attached No. 3 hospital. The third group to test the water quality at Beijing Pan Mountain area. The fourth is to look into the automobile parking situation in Ta’yuan living community. Then the four groups make reports on their findings. The first group made a quantitative investigation at “white” waste pollution (plastic bags and boxes), biological garbage (fruitskin and eggshells), noise pollution (hawking wares, bell rings and horn ring from the cars), water pollution (waste water of washing dishes), then they provided the solutions to these problems. The second group made a quantitative
investigation on two areas’ afforest, dust quality, air humidity and noise, then they produced a developing guidance for Beijing city, which suggested the concept of economic development and environmental protection are equally important. The third group made a composition analysis on Pan mountain area’s mineral water quality and concluded that water quality is good to drink, meanwhile they advised using and protecting this precious natural resource. The last group made investigation on the lawn which being crushed and flattened by automobile in Ta’yuan. They put forward a proposal of building a rationalized parking lot when build new houses. From these four reports, we can realize that we have only one earth. Once being destored we human being can’t live.

3. Introducing a series of books about primary school’s conducting sustained developing education. I Love My Hometown. Environment. which published from Science Universal Press in December, 1998. It’s a popular science book of environmental education for pupils to read. From the following list, we can get a general idea about the book. Chapter 1: Environment and Environmental Problem; Chapter 2: Constitution of Air; Chapter 3: There Is A Hole in the Air; Chapter 4: The Floating Air Pollution Source; Chapter 5: The Murder from the Air; Chapter 6: The earth got “fever” ... Chapter 8: Animals Are Mankind’s Friends ... Chapter 14: Cherish Water of Live ... Chapter 16: Garbage Surrounds City ... Chapter 26: Protecting City’s Greenland ... Chapter 28: Making a Quiet Environment ... Chapter 30: Leading a Way to Sustained Developing Road.
I. The present situation and problems on environmental education in general

Fiji environment is threatened by high population growth, pollution, over exploitation of resources and habitats and there is not recognised marine protected areas.

Mangrove forest, coral reef and rainforest are under threat from a variety and combination of factors and many of these are the result of human activities.

Lack of environmental controls result in estuary system and the adjacent coral reefs to be overwhelmed with salt and toxic industrial waste that escapes into the rivers.

Deforestation for logging, agriculture, industries and other purposes has reduced forest cover and is a threat to majority of endemic birds.

The Fiji Government has realised the importance of safe, healthy and resourceful environment. Great concern has been shown by the government for lack of awareness and mismanagement of environment. The Environment Department, established in 1993, is now mainly responsible for dealing with issues relating to environment.

As environment is of concern to everybody in the country, other Ministries and developments such as Agriculture, Forest, Fisheries, Lands, Mineral Resources, and Education have also incorporated the environmental issues and projects in their programs. Some NGOs such as National Trust, Fiji Dive Association, SPACHEE also mounted some environmental programs to educate the community and protect our environment.

Some technical groups have been formed to survey and give reports on Marine ecosystem, Rainforest, Botanical biodiversity, conservation on biodiversity and other environmental issues.
II. The present situation and problems on environmental education curriculum/program materials and resources

Environmental Education is not taught as a separate formal subject in Fiji Schools because of the number of other subjects formally offered to students. However, integrated approach has been taken to teach environmental topics and concepts at all levels beginning in Class one in primary schools up to Form 7 in secondary schools. Some subjects have more environmental content topics than others.

Primary school curriculum has been just revised and environment topics have been included in all subjects. Twenty percent of Health Education consists of Environment and it is examinable at Class 8 level. At the secondary level subjects like Social Science [Forms 1 - 4], Geography [Forms 5 - 7], Biology [Forms 5 - 7], English [Forms 5 - 7], Chemistry [Forms 5 - 7], Basic Science [Forms 1 - 4], Agricultural Science [Forms 1 - 6], Food and Nutrition [Forms 5 - 6], and Home Economics [Forms 1 - 4] do have a lot of environmental topics in them.

Every year schools have taken active roles in carrying out environmental awareness programmes and project activities as part of Arbor Week, Earth Day, World Food Day, Environment Week and the World Clean-Up Day. They have also taken part in poster competitions, Essay Writing, Debates and Oratory contests as part of their awareness programmes.

Environmental components have been also in-cooperated into Values Education which is compulsory in schools and UNESCO Associated School Project recently introduced in Fiji.

Most teaching materials and resources are from overseas, in the form of textbooks, poster, films and pamphlets. However, few local materials such as posters. Films and pamphlets are also available. It will be more appropriate to have local teaching materials relevant to environmental issues. More awareness workshops for trainers and teachers would help in better understanding and teaching of environmental issues. A fulltime environment officer at Curriculum Development Unit would be highly desirable to coordinate this programmes and produce local
materials for teaching of environment education. The environment projects in Fiji are mostly dependent on foreign funding agencies.

III. Examples of environmental education materials and resources

[1] TEXT BOOKS:

1. The Green Book For Fiji by Margaret Knox - Published by National Trust for Fiji [1990]
2. Life in the Mangroves by Neil Taylor and Derek Keats
   Coral Reef Community Published by Longman Paul [1995]
   Crabs at the Shore
4. The National Environment Strategy

[2] FILMS

1. Coral Reef - The Hidden World
2. Pluto’s Fire
3. Wake up California
4. Pacific Paradise in Pain
5. On a Paper Crane
6. Volcano Erruption
7. The Silent Provider
8. Coastal Environment of the South Pacific
9. Mururoa


1. Natural Forest for Local Needs
2. Protect Our Coral Reefs
3. Coral Reefs. Their Heath, Our Future!
4. Seas Our Source of Life
5. The Pacific Island Environment - The Choice is Yours
6. Ozone Layer
7. Lead Alert
8. Sustainable Development
I. The present situation and problems on environmental education in general.

In 1986, the Government of India announced the National Policy on Education which recognized the need for “integration of environment education in the entire educational process”. This was reinforced by a directive of the Supreme Court of India in 1991.

In 1987, the Ministry of Human Resource Development, Department of Education, Government of India introduced a scheme called “Environmental Orientation to School Education”. It supports programmes for development and testing of locale specific materials, school programmes and community activities. The major work under this scheme is being done by voluntary organisations.

The Ministry of Environment and Forests, Government of India also supports activities and programmes in the field of environmental education and awareness raising. A national policy on environmental education, its content, placement in the curricula and financial implications are yet to be formulated.

II. The present situation and problems on environmental education, curriculum/programme materials and resources.

The three main approaches to environment education that have emerged are:

1. Infusion approach in existing curricula. This is the official approach adopted by several states. More popular in the early stages of schooling (ages 6-10)
2. Separate subject in the regular school curriculum, particularly for middle and secondary stages (age group 11-16). At the University level this is the widely accepted idea.
3. Extra curricular activities: awareness raising activities like eco clubs, trekking, camping, audio visual materials etc.

Development of audio/video environment related programmes are also being undertaken by the department of education for use in educational TV programmes.
Different approaches lead to awareness generation, but for a sharp focus and to provide the necessary knowledge and skills, a separate subject approach looking at environment in a holistic way, highlighting local issues, and leading to attitudinal changes, may be more effective. However, this requires considerable curriculum modification and budgetary provisions.

Teachers training, both in-service and pre-service is an important issue.

Although considerable work has been done in the development of materials, evaluation and impact assessment remain a problem. There is need to develop comprehensive evaluation tools and assessment techniques, particularly for attitudinal changes.

III. Examples of environmental education materials and resources.

The Uttarakhand Environment Education Centre, Almora, a voluntary organisation has with the support of the state and National Governments introduced a separate course in the hill areas of the Central Himalayas in classes 6-8, age group 11-14. The purpose of the course is to place both environment and livelihood issues in the mainstream of the curriculum. Land degradation has been identified as the major environmental problem of the region. The course is practical in nature and students are taught the knowledge and skills required to manage their village ecosystem in a sustainable way.

The course is currently running in 356 schools involving some 50,000 students. More than 700 in-service teachers have been trained so far. A series of workbooks titled “Our Land, Our Life” have been developed along with a teachers manual. This is an unique example of a holistic, practical, locale specific course.

Community support activities are also organised. The Centre is running nearly 350 pre-primary education centres in villages with the involvement of local groups. Children are introduced to various aspects of environment through songs, puppet shows, dance, poetry, slogans. Use of
locally available materials such as mud, leaves, sticks, twigs stones etc is encouraged. Besides laying a foundation for environmental education at an early stage, an innovative strategy has been developed for forming women’s’ community organisations in villages. These organisations provide an opportunity for influencing attitudes towards issues of natural resources management like water, forests etc.

More sophisticated tools like videos, slides are also being considered. Logistical difficulties in remote and difficult of access mountain areas devoid of electricity and TV equipment is a problem.
I. The present situation and problems on environmental education in general

Environmental Education (EE) in Indonesia has been implemented formally at primary, junior, senior and vocational schools. The approach used is an integrative approach where the concepts of ecosystem are integrated into several subjects, except EE at the tertiary level for students teacher, especially at Jakarta Institute for Teachers Education & Educational Sciences (IKIP Jakarta), EE offered as a single subject for one semester. Coordination, teachers training, and evaluation & monitoring are our problems in implementation of EE and other problems which are not so important.

II. The present situation and problems on environmental education curriculum/program materials and resources

We have already developed EE basic course outline, guidance book for teacher, and student book from primary school till junior, senior, and vocational secondary school since 1987/1988. In 1996 they have been revised due to national general curriculum changes in 1994. EE materials have also been developed for student teacher, lectures, and professor, at IKIP Jakarta and other IKIPs throughout the country since 1987/1988. Some problems that might be worthwhile to be discussed in this seminar as follows (1) how to monitor effectively that all subject teachers at the various level of education are aware to integrate those ecological concepts into their subjects; (2) is a budget problem which might affect the process of teachers training, the reproduction and distribution of those materials, and (3) how to improve teachers’ commitment.

III. Examples of environmental education materials and resources

(1) curriculum in term of EE basic course outline for all level of education, except at the general University.

(2) EE guidance book for teachers and lecturers and for students.

(3) Slide projectors about freshwater ecosystem in Jakarta
I. The present situation and problems on environmental education in general

II. The present situation and problems on environmental education curriculum/program materials and resources

Kogai-kyouiku, the Japanese name for pollution prevention education, and nature conservation education were the first form of environmental education in Japan. They were implemented in the early 1960's, when Japan's economy began growing at a high rate. Several other educational fields such as outdoor education, nature education, consumer education, science education, international understanding education, and learning for urban planning have been integrated into environmental education since the mid 1980's, when growing global environmental problems began to cause deep apprehension. After the integration of many fields in the environmental education, environmental education in Japan has become increasingly interdisciplinary and extensive.

In 1991, Monbusho (the Japanese Ministry of Education, Science, Sports and Culture) issued the guide book on environmental education "Guidance for Environmental Education Teaching" as a reference for schools. This guidebook was based on the concept of "The Belgrade Charter" created by the UNESCO environmental education conference in 1975, and also based on the "Tbilisi Recommendation". The Central Council for Education and the Curriculum Council, organized by Monbusho, have examined the environmental education and proposed a new policy for environmental education in school from 2002, when the Course of Study will be revised. The policy will be briefly described later in this report.

Education in school of Japan is controlled by the Course of Study, which was revised in 1989 and shows teaching subjects, educational objects, and educational qualities. Since the present Course of Study did not outline a clear plan of environmental education, Monbusho created the "Guidance for Environmental Education Teaching". Under the Course of Study, environmental
education is conducted through several subjects such as Social Studies, Science, Health and Physical Education, Homemaking, and Moral Education in school. There have been excellent examples of environmental education in schools, where the teachers discussed the concept and policy of environmental education using the "Guidance for Environmental Education", and created a comprehensive curriculum on environmental education that held the relation among subjects. However, such example created by teachers with high motivation, is still rare in Japan. It is important to create support systems for school curriculums and educational programs to achieve comprehensive environmental education.

Based on the reports of the Central Council for Education and the Curriculum Council, in November 1998, Monbusho has proposed a plan of the new Course of Study to be enforced from 2002. The new Course of Study does not provide for an "Environment" subject in school, as well as the present one, but it will be possible to implement the environmental education in the class hour in school under the name of "Period for Integrated Study". The new class hour called "Period for Integrated Study" will be implemented at the rate of three class hours (one class hour is about 45 minutes), and two or three class hours per one week, respectively in elementary and lower secondary schools. The objective of this new class hour will be to encourage the high motivation for study and problem solving-capabilities of students, and there are no rigid rules on the content of education. Therefore, each school will have the right to decide what kind of educational content is implemented in this class hour, although Monbusho has indicated the education of environment, welfare, international understanding, an information, as some examples of comprehensive education taught at the new class hour. Though this new class hour is not only for environmental education but also for some other educational fields, many teachers are interested in the environmental education holding the interdisciplinary. Thus it is important to closely examine educational methods and support systems for implementing comprehensive environmental education.

Though environmental education in local communities in Japan has been common, it has not been linked with school education. The final Report of the Curriculum Council in 1998 showed that the good relation between school and local community is essential, and it is necessary to create
ways for schools to use results developed in the local communities. Environmental educational activities conducted in local communities are classified as follows:

1) Environmental education activities in national children's nature centers and prefectural nature centers.

2) Activities such as training courses for the environment (e.g.: the program of reduce, reuse, and recycle) sponsored by the environmental section of local and prefectual governments.

3) Environmental education activities such as nature study training by museums or park management sections of local and prefectual governments.

4) Environmental education activities by NGOs or local organizations for environmental preservation. These organizations are classified into main three types.
   - Small, local organizations that observe and preserve nature, and improve the environment where people live.
   - National and charity organizations that preserve nature and improve the environment, such as Nature Conservation Society of Japan and WWF-Japan.
   - Consumer organizations such as cooperative associations (co-op) that teach preservation of the environment through campaigns and education (e.g.: non-plastic bags, safe foods).

The number of non-charity organizations for environmental education is increasing in Japan. These organizations profit through providing information, plans, and educational materials on environmental education to teachers.

III. Examples of environmental education materials and resources (The categories of environmental education materials from the viewpoints of educational contents in Japan)

Teaching materials of environmental education in Japanese schools and social education have been developed from the viewpoint of several educational fields and some school subjects, so I classify the categories of the practices of environmental education in Japan in terms of contents of education. The categories of educational contents on environmental education are as follows.

1) Experiencing the Outdoors with Nature Friendly Activities: It is important in environmental
education for students to communicate with nature and recognize its profundness. The traditional and playful methods using natural materials such as fallen leaves have been introduced in the school education. Recently, the Nature Game has also been used as the material of environmental education. Moreover, nature-friendly camping has been developed in the field of outdoor education. These types of activities in Japanese schools are implemented during Life Environmental Education, Health and Physical Education, Moral Education and Special Educational Activities classes.

2) Understanding the Structure and Function of Nature to Nurture Nature Preservation: To nurture nature preservation, an understanding of the structure and function of nature and the natural history from biological and geological points of view is essential. Moreover, this helps students recognize the relation between nature and human activities. In school education, the programs for understanding nature are conducted in the subject of Science, and the programs on nature preservation are implemented in Moral Education and Special Educational Activities classes.

3) Science and Technology Education: Science lesson in earth science, climatology, and chemistry help students understand environmental problems such as heat pollution, water pollution, and air pollution. Science education and technology education are necessary for understanding how to preserve the environment, and motivates students to learn science and technology for the environment. This type education is conducted in the subjects of Science, Industrial Arts, and Health and Physical Education in school.

4) Experiencing Traditional Life Styles and Culture: Traditional life styles have many nature friendly features, and offer excellent opportunities for environmental education, because students learn the foundation of human life and environmental sustainability. These programs are usually implemented in the class hours of Life Environmental Studies, Social Studies, and Special Educational Activities.

5) Geography of Local Communities: It is important in environmental education for students to examine environmental problems from several points of view such as nature, culture, and society. As geography is a comprehensive study field, the geographical learning on the cultural history and spatial understanding of local communities contribute to the comprehensive understanding of complicated environmental issues in local communities. These programs are conducted in
the subject of Social Studies.

6) Biotope and Learning through Landscape using Maps: By mapping the nature and culture of local areas, students can learn the landscape of local communities and recognize the improvement and regeneration of the environment in which they live. This program is similar to urban planning education and greening in urban areas. Performing activities to improve and regenerate the community leads to the good attitudes and high motivation among students for environmental preservation. This education is implemented in the class hours of Life Environmental Studies, Social Studies, and Special Educational Activities.

7) Education for Sustainable Consumer Habits: People must change their consumption patterns for future generations. The learning of lifestyles that promote environmental protection in both the home and school such as the program of 3 Rs (Reduce, Reuse, Recycle), is essential in environmental education. The extension of life skills to environmental protection in society is powerful way to solve urban environmental problems such as waste, transportation, and electric energy. This education is implemented in Homemaking, Social Studies, Science, and Special Educational Activities classes.

8) International Understanding and Global Education: Environmental problems are deeply related to the war and poverty, and are international as well.

9) Learning on International, National, and Local Environmental Policy: Agenda 21 was adopted as the final text of agreements negotiated by governments at the United Nations Conference on Environment and Development in 1992. Learning international agreements or conventions such as Agenda 21 gives students information of positive policies for sustainable development. Moreover, learning national and local environmental policies is also necessary. This educational program can be implemented in Social Studies.

The above practices of environmental education are typical cases, and are implemented in the advanced classes and schools.

The environmental education programs and materials described above are developed by the following people and organizations.
1) Elementary, junior high, and high school teachers who are interested in environmental education.

2) Researchers at the National Institute for Educational Research and those at regional research centers for education sponsored by prefectural education boards, the numbers of which reach 47 in Japan (most prefectures possess educational research centers).

3) Researchers at universities or colleges, mainly teacher colleges.

4) Interpreters of the nature and environment in museums, park visitor centers, and environmental education centers.

5) Educators at NGOs related to environmental preservation.

6) Consumer organizations such as co-ops.

Though there is a great variety of teaching materials for environmental education, there is no organization or network that organizes information on teaching materials and offers them to educators. Moreover, there is little cooperation among the above organizations or educational fields in the practice of environmental education and the development of teaching materials and program.

As it is necessary to extend the teaching materials developed by each organization though there is no comprehensive network for extension of environmental education, each organization extends the teaching materials using the independent networks which are as follows:

1) Teacher training by education offices and education research centers.

   Example 1) Teacher training (5 days) by Monbusho has been implemented annually for the past 5 years.

   Example 2) Teacher training by regional research centers for education (There are differences in the quality of training in each region)

2) Guide books published by regional research centers for education.

3) Conference for the exchange of environmental education (Japan Environmental Education Fair) by Monbusho.

4) Journals and newsletters published by academic societies and educational associations. (e.g.,
The Japanese Society of Environmental Education, The Society of Biological Sciences Education of Japan

5) Books that contain information on how to conduct environmental education.

6) Teacher training for environmental education conducted by universities and NGOs. (e.g.: Seminar of environmental education for teachers at Tokyo Gakugei University)

7) Information through the World Wide Web. (e.g.: Link to pages with information of environmental education, and the programs of environmental education using the Internet such as GLOBE and EILNet)
I. The present situation and problems on environmental education in general

Environmental education had been implemented and integrated across curriculum for primary and secondary schools in Malaysia. The present problems on environmental education in Malaysia are to be able to have good teaching aids (content and presentation), to have experienced and knowledgeable key personnel about environmental education in schools and the allocation of budget for environmental education activities.

II. The present situation and problems on environmental education curriculum/program materials and resources

Teachers’ Handbook for primary and secondary schools are in the final process of printing and to be distributed to all primary and secondary schools early next year. We have received a great support from the government and non-governmental organization. Some examples are The Marine Education Kit (Ministry of Agriculture) and the Mobius Curriculum (UMW). There are also posters about environmental awareness prepared by local agencies that can be used during teaching and learning process.

III. Examples of environmental education materials and resources

(1) The Marine Education Kit consist of informative fact sheets, education worksheets, interesting indoor activities, fun-filled outdoor activities, attractive posters, exciting mangrove snake and ladder game.

(2) The Mobius Curriculum: a teachers’ handbook for secondary schools consist of activities and facts about 3R activities, that is “Reduce”, “Reuse” and “Recycle”. This handbook gives guidelines and facts to teachers about how waste should be treated.

(3) Posters about environmental awareness that can be used during teaching and learning activities in or out of the classroom.
I. The present situation and problems on environmental education in general

The New Zealand Ministry for the Environment has just released a national strategy for environmental education which provides direction for all education sectors groups. This includes formal education, community education, local government and business education. A national coordinating team has been appointed to advise the Ministry for the Environment on how best to implement this strategy over the next two years.

The key issues related to environmental education that still need to be addressed in New Zealand are:

- a lack of environmental education curriculum guidelines for formal education. Hence environmental education remains on the fringe of curriculum development.
- an emphasis within formal, local government and business education on education ‘about’ the environment, rather than encouraging the social action skills that are required to address education ‘for’ the environment.
- a lack of quality resource material that encourages individuals to critically reflect on their attitudes, values and behaviours.

II. The present situation and problems on environmental education curriculum/program materials and resources

Many of the current resources produced by local government, NGO’s and curriculum writers that relate to the environment tend to provide information ‘about’ the environment rather than education ‘for’ the environment. The lack of quality resources for environmental education has resulted in the Ministry for the Environment, through the resource management fund, issuing a national contract to evaluate materials and provide a detailed directory and clearinghouse of appropriate resources that meet the objectives of the national strategy.

A national network of environmental educators is being established by the New Zealand Association
for Environmental Education and WWF New Zealand to communicate new ideas and provide
professional development programmes to avoid the duplication of resources across different
sector groups.

III. Examples of environmental education materials and resources

1. Experiential learning activities have been developed by the Christchurch College of Education’s
outdoor and environmental education centre. These activities have been designed to address
the need for resources that focus on helping individuals to critically reflect on their attitudes,
values and behaviours. These activities use a student centred approach, they require personal
experience to provide a meaningful context for the learner and they rely on reflection to identify
the issues and skills required to engage in education ‘for’ the environment.

2. Environmental Resource Directory. This resource provides an overview of topics related to
environmental science and the biophysical environment. This resource highlights the problem
and issues surrounding the lack of quality materials in New Zealand that encourage education
‘for’ the environment.

3. Ministry of Education video for schools on environmental education. This video provides an
overview of environmental education in New Zealand schools. The video explores the scope
of environmental education and the range of activities used to meet curriculum objectives
related to the environment.
I. The present situation and problems on environmental education in general

Population growth and human activities rate have a direct relation with the deteriorating rate of natural environment. Greater industrialization excessive exploitation of natural resources, intensification of agriculture, non judicious use of cloro-floro-carbons (CFC’s), waste disposal, pollution of land, air and water all contribute to the deterioration of natural environment and resources. Pakistan is no exception to it. The literacy rate in the country is nearly 40%. Universalisation of primary education is yet to be achieved. The face environmental deterioration is being felt through the pollution of land, air, water etc. together with deforestation and climatic degradation. Environmental Education is becoming an important component in the formal school system and young generation in the school is being provided with the necessary information/awareness and with suggestive means for its improvement. The media in the country is also providing a lot of awareness in the field of environmental sensitivity. The students are more knowledgeable and provided information about environmental concerns through modern communication facilities. Environmental Education Curriculum has not been developed so far, however, the concepts of environmental education have been incorporated in the existing textual material to supplement the awareness campaign. Through certain short term projects some of the teachers have been provided orientation/training in the area of environmental education and have been trained to integrate these concepts in various subjects during their teaching. Some supplementary material with a limited scope has also been developed and distributed among some teachers. Collaboration with active institutions/organizations including NGOs has been made regarding development of material and teacher training but the same can not be established on permanent basis. The Ministry has undertaken an exercise for the development of environmental studies curriculum at secondary level. This subject would be offered to students as optional subjects. Pakistan follows a centralized curriculum development system with a single textbook and examination oriented curricula can be considered as a hinderance in imparting environmental education. Moreover, non-availability of trained teachers, scarcity of supplementary material on environmental education and inflexibility in the school timetable can be attributed as
some of the problems for environmental education. The limited efforts of the Ministry of Education have now started yielding fruit and the students community in particular and the teachers and public in general now appear to be more informative about environment and its related issues.

II. The present situation and problems on environmental education curriculum/program materials and resources

Curriculum in environmental education is presently under preparation since environmental education/studies was not offered has an independent subject. However, the related concepts have been integrated in relevant subjects and textbooks. The Ministry is not only preparing the curriculum in environmental studies but is proposing some changes in the scheme of studies so that the environmental studies can be offered as a subject at appropriate level. Presently the absence of supplementary material is also one of the main obstacle in the implementation of the relevant programme. There is a need for detailed teacher training programmes to be organized so that the teachers are oriented/trained in conveying the messages of environmental education through all relevant subjects taking examples of the every day life and immediate environment of the learners. Once environmental education becomes a part of the school system the availability of material and resources can be explored and the relevant material can be procured/duplicated.

III. Examples of environmental education materials and resources

(a) The Ministry of Education has successfully implemented a collaborative project with the Ministry of Environment during 1988-1992 in which orientation/awareness programmes, were organize. Under the project an instructional package including teachers guides for primary, middle and secondary levels was developed together with a set of 20 instructional/visual charts in Environmental Education. Orientation/teacher training of limited number of teacher was organized throughout the country. After completion of the project the Ministry of Education is continuing with the activities within its limited resources, and necessary changes are being incorporated/integrated.
I. The present situation and problems on environmental education in general

The 1991 review of the state of environmental education (EE) in the Philippines reveal that environmental concepts are already being integrated in many schools in all levels. Many government and non-government organizations have also been conducting EE at the community level. However, the following problems still need to be addressed: (a) current procedures in EE are mostly focused on low cognitive level and less on problem-solving, creative thinking and attitudinal change; (b) there is currently no monitoring/evaluation of EE projects implemented across the country.

II. The present situation and problems on environmental education curriculum/program materials and resources

Environmental concepts and issues are already inferred in different learning areas from elementary to the tertiary levels. However, it is not very clear to teachers, that concepts and issues to be emphasized in the different subject areas and at different levels of schooling. It was also found out that there is overlapping of topics as the environmental issues are inferred into the subjects. Time allotment for each subject area is not enough to investigate EE issues holistically. Since many teachers have limited exposure to the content and processes of EE, there is a need for more teacher-training which should include among others strategies on how to use the environment for teaching and learning and preparation of suitable assessment instruments.

III. Examples of environmental education materials and resources

(2) TEACHING MODULES, ACTIVITY SHEETS ON ENVIRONMENTAL EDUCATION

The use of teaching modules and activity sheets on EE help address to use in infusing the environmental concepts. Modules can also be used for independent study of advance students.

(3) SCOPE AND SEQUENCE CHART

The scope and sequence chart gives a total picture of topics and skills to be taught and when
they can be taught. It can help decide what to teach at each grade level and in what subject.
I. The present situation and problems on environmental education in general

1. School EE (Environmental Education): EE is carried out and emphasized in elementary schools, middle schools and high schools through several classes for subjects related to EE. In addition, in elementary schools EE is carried out as optional courses, in middle schools and high schools ‘Environment’ subject and ‘Environmental Science’ subject respectively have been selected and taught independently since 1995. However, the rate that these subjects are selected is still low to be 16%, and the awareness, opportunities, and programs of EE are lacking.

2. Social EE: The number of registered organizations among environmental NGOs are about 350, and that of non-registered organizations are about 400. These organizations have increased since the late 1990s. The problems in social EE are similar to those in school EE and lack of basic facilities and financial support is a big problem.

II. The present situation and problems on environmental education curriculum/program materials and resources

1. School EE: The independent ‘Environment’ and ‘Environmental Science’ subjects for middle and high schools, the latter of which is changed to ‘Ecosystem & Environment’ since 2001, have their curriculum developed by the government, but EE for elementary schools does not have its curriculum developed by the textbooks for ‘Environment’ and ‘Ecosystem & Environment’ in the 7th revised curriculum, which will be carried out since 2001, is to be developed from now. Various data for school EE are lacking.

2. Social EE: Governmental institutes, GONGO, NGOs, etc. are developing and supplying EE programs and data, but they are not various in levels.

III. Examples of environmental education materials and resources

(1) Textbook in each level, publisher, and students:

For textbooks for elementary schools and high schools, the education office of each city and province examines textbooks published by private publishing companies and permits them.
Each school selects one of the selected textbooks. For the ‘Environment’ textbook for middle schools, the government publishes one textbook and several aides are used. College textbooks are published without any examination.

(2) Most of the data for social EE are issued by every kind of organization and some of them are issued under the support from the government or public institutions. Their kinds are various from printed matter to multi-data and recently CD-Rom titles or internet are also used.

(3) The Ministry of Education develops and supply textbooks and teacher’s guides of ‘Environment’ subject for middle schools. The Ministry of Environment mainly produces printed matters for elementary, middle and high schools, and social EE, and some institutions develop VCR programs. Also, local governments develop some data for EE. Professional institutions are asked to develop most data supplied by public institutions in the above. ‘The Korean Society for EE’ develops survey or research data such as the fact-finding survey and the master plan on EE in Korea.
I. The present situation and problems on environment education in general.

It can be analysed from the curricula being implemented in Thailand at the present time that environment education has been covered both in formal and non-formal education. The education aims and principles stated in the curricula show their concerns on environment and support natural resources and environmental conservation. Concerning curriculum structure for formal education, environment education has not been designed to be a separate compulsory subject. The design of 5 integrated learning areas at the primary level allow environment education to take place in form of learning objectives, activities, and/or content knowledge. At secondary level, studying about environment is seen prominently in some subjects especially sciences and social studies while elective subjects on environment are also provided. Environmental sciences has just been implementing as compulsory course at upper secondary level from 1997. However it is important to state here that description of the learning areas/course of studies written in the national curricula are so broad and flexible and adaptation for implementation is needed to be done by single teachers to meet the needs of their own students.

There are, at the moment, the needs for new curriculum for 12-year-basic education to comply with the new constitution recently promulgated. The proposed national curriculum framework, expected to be promulgated in the year 2000, employs higher degree of decentralization. It is then believed that environmental education would better meet the needs of localities and hopefully help increase environmental awareness and participation of local people and communities.

Present situation of environmental education in the Thai educational system has brought to the following weakness.

1.1 Inadequate support, academic and financial, to the promotion of environmental education implementation. Since administrative structure of educational bodies as well as development plans are, most of the time, subject-based, priority of the EE promotion, therefore, has been towards
the last.

1.2 Attitude towards environmental education need to be promoted. Many students, especially at secondary level, are interested in studying hard in subjects considered improtant for continuing their studies at higher level and not pay enough attention to environmental education.

1.3 A lot of support in curriculum implementation is needed in order that the national curriculum is well achieved.

II. The present situation and problems on environment education curriculum materials and resources.

Production of environmental education materials have been done by various organizations which can be categorized as follows:

2.1 Ministry of Education

Through related Departments, MOE produces curriculum materials, i.e; teachers, guide books, textbooks, and supplementary readings, for government schools and educational authorities throughout the country. The materials support curriculum implementation both in general and specific on environmental education.

2.2 Other ministries/governmental organizations

Different government organizations have been producing printed and non-printed materials mostly on specific area concerning their responsibilities. Thus materials and resources on environment are available for teachers.

2.3 Private agencies

In Thailand, privatization of educational material production have been implementing. Teachers find textbooks and materials suitable for their own lessons, teaching strategies and situation. Ministry of Education plays its role in approving textbooks and some types of
educational materials to be used in schools. On voluntary basis, many private printing companies need their products to be standard approved by MOE. Apart from these, through programs run by private organizations, there are variety of materials and resources to be access by school teachers.

The following are problems seen concerning environmental education resources and materials.

1) Inadequacy of materials in term of educational level, quality and quantity of production.
2) Accessibility of teachers especially those who are in remote areas.
3) There are the needs for more production of local materials in order that teaching and learning would better serve local communities and society.

III. Examples of environment education materials and resources.

Environmental education materials and resources to be mentioned here are as follows ;

3.1 Teachers, guide books including
- guide book on teaching-learning activities : a case study on community forest
- guide books on specific issues, for instance, garbage disposal, water pollution, school environmental management.

3.2 Learning packages on electrical usage and energy consumption.

3.3 Booklets, posters, and magazines on various specific topics.

3.4 Namelist of environmental materials produced by various organizations and namelist of non-governmental organizations working on environment.
VIETNAM

Dr. Hoang Duc Nhuan

I. The present situation and problems on environmental education in general

*The present situation of EE

- EE is experimenting to be integrated into every subject/activity from kindergarten to upper-secondary education, especially into Biology, Geography, Vietnamese language, Literature, Moral education, Civics.

- EE is also experimenting an optional programme of 11 topics on EE in secondary education and a programme of basic approaches on EE in some pilot T.T.C.

- In some provinces there were an applied programme on establishing a system of “Garden-Pool-Stable” at secondary schools in suburb areas.

- School network participates in carrying out the national programme “Growing plant”. Schools have achieved the plan of 15 million new plants for our country from 1991 to 1995. Now school network is continuing the new plan 1996-2000.

*The present problems:

- EE raised not yet enough awareness of students and communities and therefore not yet enough commitments to protect surrounding environment.

- EE is carried out in schools as supplementary activities, not yet be considered with the whole school approach.

II. The present situation and problems on environmental education curriculum/program materials and resources

*The present situation

- There are common curricula in general education and in higher education:

  + There are the chapter on “Ecology and Environment” in the curriculum of Biology 8 and curriculum of “Ecology and Biosphere in Biology 11.

  + There are two common curricula on EE in higher education: curriculum “Population, Environment, HIV/AIDS and drugs abuse” for TTC and curriculum “Environment and Human being” for the general stage of universities.
- There is the curriculum “Field practice in natural environment” for the faculty “Biology-Agriculture” of TTC

**The problems:**
- There is not yet a system of curriculum (including extra-curriculum) on EE through levels.
- It should be more significant if there would be a curriculum “Basic approaches of environmental education” for all TTC.

### III. Examples of environmental education materials and resources

- EE is more and more important. We should provide EE for people from early stage of formation and development of personality. The new material in this direction is “Environmental Education in Kindergarten” (Hanoi, 1998)

- “Grow plant” is an important and significant action of school and student in environmental protection and development. There is a set of materials on growing plant.

- In many of provinces there were its own video tape, such as
  - + Forest Minh hai
  - + Biodiversity in forest Cat tien
  - + Domestic waste
The Institute of Advanced Studies of the United Nations University (UNU/IAS), established in 1996, is mandated to undertake research designed to promote the ecorestructuring of modern society in order to achieve a more environmentally sustainable future. To this end, the Institute has developed a multi-thematic research programme that addresses pressing global issues in a systematic manner by examining critical trends and significant impacts associated with globalization, industrialization and urbanization. This research activity is enhanced by post-graduate/professional training and education activities mainly targeted at supporting young academics.

There are three central components to the education activities at UNU/IAS. First, the Institute offers post-graduate fellowships to young scientists from around the world, and developing countries in particular, to provide them with an opportunity to expand their intellectual vision beyond the single scientific field that they may be engaged in. These fellows are normally undertaking research in areas closely related to the core research of UNU/IAS on ecorestructuring. Second, UNU/IAS, in collaboration with the Asian Institute of Technology, has developed a programme of short training courses on sustainable development. These courses take place once a year and target top level planners and policymakers in Asia and the Pacific. Third, the research findings from each project at UNU/IAS are being used in the development of curricula materials on environmental management. These will be employed in distance based education using information technologies through the Virtual University initiative at UNU/IAS (discussed below) and possibly in the development of a Masters Degree Programme.

New Directions

Recently, the work of the Institute, and of the UNU as a whole, has taken on two important new dimensions directly related to subject of environmental education. The first is a result of a new initiative from the UNU Rector, Professor Hans van Ginkel who is placing considerable emphasis on the importance of the notion of sustainable "human" development and on the need
for our institutions of higher education to take the lead as intellectual powerhouses in pursuit of a sustainable future. Professor van Ginkel addressed the UNESCO World Conference on Higher Education (WCHE) in October 1998 and called on universities around the globe to promote sustainable human development through measures designed to improve understanding of:

* The serious and pressing nature of problems facing the world;
* The inter-/transdisciplinary scope of their potential solutions;
* The international scale of their impact; and
* The ethical imperatives of self-knowledge, self-discipline, moderation, fairness and justice for all.

A series of actions were proposed at the Conference, with the UNU and UNESCO agreeing to take the lead in creating a "University Platform for a Sustainable Future" (UNESCO 1998).

The second important dimension was also presented at the UNESCO WCHE and relates to an initiative launched by UNU/IAS called the Virtual University. This project addresses the need for higher education establishments throughout the world to deal with the implications of new information and multimedia technologies in curriculum development, teaching, learning, knowledge generation and research. To date, the focus of this project has been on the development of the infrastructural base required in order to effectively utilize these new technologies for education purposes. A demonstration of the efficacy of this platform was made during WCHE when UNU/IAS with support from key partners successfully carried out a multi-point video conference and cyber conference which included Internet broadcasts of plenary sessions and thematic debates, video interviews with key delegates and online discussion forums. All of these measures exemplify the way that new technologies can be used to reach out to the global academic community providing information and knowledge in new and exciting formats.

From Global to Local

As mentioned previously, a crucial element of the UNU/IAS approach to research and
education is the focus on multidisciplinarity. This is complemented by an emphasis on tackling problems as they manifest at all levels ? global, national and local. Hence, the Institute conducts research on global environmental problems and future scenarios, on regional and national sustainability, and on local environmental issues. The Iwate Environment Network (IEN) project, a collaborative project between UNU/IAS, Nippon Telegraph and Telecommunications and Iwate Prefectural Government, is a prime example of how local approaches can be promoted to deal with pressing environmental problems. In developing this project, UNU/IAS acknowledges that solutions to many environmental are most likely to be successful if they are developed by local institutions - including local universities, governments, businesses and NGOs. Indeed, these institutions are closest in proximity to the problems and have the indigenous knowledge required to tackle them. The role of UNU/IAS in this process is to facilitate collaborations and to introduce new ideas, techniques and technologies.

The Iwate Environment Network places emphasis on, and explores the interrelationships between three key aspects - environment, information and education. The project was officially launched in September 1998 and the first phase will run to March 2002. It has the following aims:

* To contribute to the long-term goals of UNU/IAS as specified in the Institute's Statute by examining interaction of societal and natural systems in a given locality.

* To consider possibilities to utilize real-time environmental information in a virtual education mode involving local universities and schools.

* To further develop UNU/IAS=92s work related to Zero Emissions by applying the methodology to a local community in the host country incorporating both environmental education and information dimensions.

The IEN Project will promote local efforts to increase awareness of environmental conservation by providing opportunities for citizens to think about the global environment, and by encouraging people to adopt lifestyles in their local community that are environment friendly. Research will
also be undertaken on strategic approaches to the collection, storage, processing and provision of environmental, waste disposal and recycling information using communications networks. The joint project will also contribute to the promotion of "zero emissions" activities at the local/community level.

Key Elements of IEN

Environmental education is an important component of this project. All three organizations involved have considerable expertise related to the issue of education. For instance, NTT has developed a number of education related multimedia products and networks and in 1997 Iwate Prefectural Government undertook a survey of aquatic life (bio-indicators) in 161 local rivers. This involved 253 local organizations including a large number of schools and the results were made available by the prefectural homepage. Work has also commenced on the approaches to Acid Rain monitoring utilizing pupils for schools in the Iwate.

The project will build on these experiences and from an educational perspective the following objectives will be pursued based on the work of Fein (1996):

- Improve awareness of local environmental issues from a holistic perspective for school children and students in Iwate;
- Make the environmental education relevant to real world situations;
- Breakthrough the barriers between school subjects, between schools and other institutions
- Promote shift from passive to active/participative learning;
- Promote information technology based approaches to learning.

In order to implement these activities, close collaboration will be required with the Iwate Prefecture Education Commission, local universities and schools.

UNU/IAS has already invited pilot schools, via the Prefectural Education Commission to participate in the project and to develop websites utilizing environmental information provided
by NTT sensors and from other sources. The pupils will be asked to consider possibilities for the implementation of zero emissions related activities in their schools.

UNU/IAS envisages some form of collaboration with other similar projects in developing countries and economies in transition. It will seek to bridge the gap between schools and local sponsoring companies through site visits, research and teaching. It is imperative that environmental education places emphasis on linking what is taught in the classroom to real world situations and to local organizations. The IEN Project will involve:

* Collection of general environmental information on the locality and its natural resources;
* Evaluation of information provided by NTT monitoring devices;
* Collection and analysis of environmental information in collaboration with Iwate Prefectural Government,
* Networking via the Internet with other schools in Iwate, the local universities and schools elsewhere.

This latter activity could include collaboration with existing projects such as GLOBE (Global Learning and Observations to Benefit the Environment). GLOBE is a worldwide network of students, teachers, and scientists working together to study and understand the global environment. Students and teachers from over 6,000 schools in more than 70 countries are working with research scientists to learn more about our planet.

Education for the Community

This project will also adopt a community-based approach with measures designed to enhance local understanding of environmental issues on the part of prefectural residents. It will require measures to build upon the capacity of communities to address environmental issues. It will also involve measures to develop tools, information and data that will assist communities in addressing environmental problems, and ensure community access to credible scientific information. In order to achieve this, we may need to employ various methods including the utilization of focus groups sessions with members of the local community to identify their perceptions of the local
environment, potential opportunities and threats.

In this context, the basic objectives for the design, construction and operation of the prototype information system would need to include the capacity to:

* Provide opportunities for citizens to think about the global environment, and by doing this, increase awareness of the importance of preserving and regenerating the environment. In addition, promote initiatives that assist environmental preservation at home and the change to more environmentally conscious lifestyles.

* Advance fundamental and technical research on the collection, storage, processing and provision of natural environment, waste and recycling information that uses communication networks.

* Promote environmental education activities for citizens using multimedia technologies.

* Set up a system to provide reference cases and precedents for the formulation of wide spread education activities targeted at citizens through the prefectural environment centres.

References:
Asian/Pacific Copublication Programme (ACP) started in 1971 and its objectives are, to get Asian/Pacific countries to co-operate in supplying large quantities of low priced but high quality and attractive picture books, especially to the children of the various Asian/Pacific countries suffering from book shortages, and to advance international understanding through these books. So far under ACP 27 titles were published as master versions and 4,200,000 copies have been published in 37 languages in 27 countries.


Since the environmental issue has become serious problem in the region, many countries strongly proposed to launch the ecology book series under ACP. Based on such, we agreed to co-publish the book on ecology for children of 9-12 years old to give variety of information, message and something about ecological including scientific issue as well as cultural based in Asian/Pacific point of views. We chose “TREES” (1995) as the first title, because trees and forests exist in many member countries and are therefore familiar to everyone in every countries. Also, trees contributed so much to people’s lives. The book was highly appreciated and supported not only by Member States but also by UNESCO, and Latin American countries.

In 1996-97, the second book on ecology series under ACP, “WATER” was published. In this book 16 countries contributed manuscripts and the number of copies printed as master version is 2000. This title was chosen because of strong requests from Member States to share the information about the severe water pollution in the Asian Pacific region and the importance of the idea that water belongs to everyone; and to introduce people to Asia’s abundant water culture. The master version were sent to National Agencies, publishing houses and libraries in the region, UNESCO and its regional offices, and other related organizations and NGOs. We could include many interesting cultural information about water culture in Asia and the Pacific and this made the book very interesting for the readers. The book was highly appreciated by the Member States and other experts of children’s books that the cultural contents were solid and interesting. Also we received the comments that very few manuscripts about pollution were finally included in the book.

[TREES]

China (Chinese/Hunan Juvenile and Children’s Publishing House, 1997)
India (Hindi, and 12 languages/National Book Trust, 1997-9)
Indonesia (Indonesian/Pustaka Jaya, 1997)
Japan (Japanese/Shogakukan, 1997)
Malaysia (Malay/Dewan Bahasa dan Pustaka, 1996, second printing, 1997)
Maldives (Dhivehi/Non-formal Education, 1996)
Philippines (Tagalog/Children’s Communication Centre, 1997*, English/Anvil Publishing House, 1997)
Thailand (Thai/Book Development Centre, 1996)

[WATER] (book on ecology for children)

Philippines (English/Anvil Publishing House, 1999)
Thailand (Thai/Boo Development Centre, 1999)

[Folk Tales from Asia]

Nepal (Nepalese/Sajha Prakashan, reprinting, 1995-96)
Japan (Japanese/Koguma-sha Publishing Ltd., reprinting, 1996)

[Can You Find Me?]

Mongolia (Mongolian/1996-97)
Sri Lanka (Sinhalese/National Commission for UNESCO, 1997)

[Read Me A Story!]

Thailand (Thai/Book Development Center, 1998)

[The Last Ticket/The Wall (Literature for Young Readers)]

Sri Lanka (Sinhalese & Tamil/National Commission for UNESCO, 1996)
Thailand (Thai/Book Development Centre, 1998)

ACP started in 1971 and so far 26 master version has published between 1974-1997.

<table>
<thead>
<tr>
<th>Title of Master Version</th>
<th>year of publishing</th>
<th>a category</th>
</tr>
</thead>
<tbody>
<tr>
<td>6 Folk Tales from Asia (1-6)</td>
<td>1974–77</td>
<td>folk tales</td>
</tr>
<tr>
<td>7 Festivals in Asia</td>
<td>1975</td>
<td>festivals(culture)</td>
</tr>
<tr>
<td>8 More Festivals in Asia</td>
<td>1975</td>
<td></td>
</tr>
<tr>
<td>9 Let's Play Asian Children's Game</td>
<td>1978</td>
<td>games</td>
</tr>
<tr>
<td>10 Stories from Asia Today 1</td>
<td>1979</td>
<td>contemporary stories</td>
</tr>
<tr>
<td>11 Stories from Asia Today 2</td>
<td>1980</td>
<td></td>
</tr>
<tr>
<td>12—15 Asian Stories for Young Readers (4)</td>
<td>1983</td>
<td></td>
</tr>
<tr>
<td>16 My Village, My Family, My Asia</td>
<td>1981</td>
<td>picture book</td>
</tr>
<tr>
<td>17 Wonders of Our Asia</td>
<td>1984</td>
<td>picture book</td>
</tr>
<tr>
<td>18 Laughing Together</td>
<td>1986</td>
<td>humorous stories</td>
</tr>
<tr>
<td>19 Together in Dramaland</td>
<td>1987</td>
<td>damas</td>
</tr>
<tr>
<td>22 Read Me A Story!</td>
<td>1990</td>
<td>story telling book</td>
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<tr>
<td>23 The Last Ticket and Other Stories</td>
<td>1992</td>
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</tr>
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<td>24 The Wall and Other Stories</td>
<td>1993</td>
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<td>26 WATER</td>
<td>1996</td>
<td></td>
</tr>
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<td>27 THE SUN</td>
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</table>

[4] Vernacular language versions published so far
(see the table attached)

[5] Promotion of ACP

(1) Cooperation of National Agencies

ACP has been successfully carried out and promoted with the strong network and cooperation of 21 National Agencies in Asia and the Pacific. It depends on the countries’ situation that national agency would be private publishing house, or National Commission for UNESCO, or Publishers Association, or Ministry of Education etc. We selected them to have most effective and strong achievement within each country. The main roles of the national agency are:

(a) collecting draft manuscripts in English to be examined in the planning and editorial meetings, and to prepare final ones for inclusion of master edition.
(b) Promotion of publishing ACP national language versions within the country through local publishing houses etc.
(c) Sending most suitable expert to the planning and editorial meetings and to follow up the results as national level.

(2) Assistance for publishing vernacular versions

The final goal of ACP is, to get as many children as possible to providing and reaching ACP books in their own languages.

For this goal, it has been assisting and promoting them in several ways. One is, to provide positive films for printing and the other one is, to assist the country financially within the total amount of assist ACP programme, and some of them are successfully supporting us by providing a certain amount of budget for printing and distributing vernacular versions. In order to promote book THE SUN, we need special funds as well as promotion activities through the national agencies in respective countries.

[6] Future Directions of ACP

ACP started in 1971 with a view to providing children everywhere suffering from book shortages with books in low price but high quality. So we published Folk Tales from Asia in 6 volumes, and Festivals in Asia and More Festivals in Asia. Under these circumstances we tried to produce as many national versions as possible to provide the children in the region who were suffering from a drastic book shortage with cheap high quality books, and sought to foster a spirit of mutual understanding. In the 1980s we tried to provide not only cheap high quality books but also interesting and fun picture books and stories. So we published contemporary short stories, picture books like “My Village, My Family, My Asia” and “Laughing Together” etc. In the 1990s we aim to share the report on problems common to all Asia and to reach children values.

After more than twenty-five years, publishing and news reporting in Asia have changed greatly, so at this point it is necessary to verify (confirm) why and for whom this co-publication programme exists. At the same time, there existing large gaps between children who can obtain books and cannot within one country. Environmental problem is becoming very serious in the region. How can we solve this problems through ACP books? This is also one of the crucial problems. Therefore, concerning future directions under ACP, various needs are being raised by each country and much new topical subject matter, in fields in which the ACP has not yet covered and which is reflecting social problems, and will be well-received and supported is being sought.
[Translation or content not provided]
GROUP A: Australia, China, India, Japan (Reporter: John Fien)

Issues I
What sort of resources for countries
- without electricity in schools?
- without central curriculum leadership?

Different views based on:
- type of government processes
- type of education processes
- types of economies

Issues II
Are resources...
- official or non-official?
- core texts or supplementary?
- for pupils or teacher guides?

BUT Resources are only the means or the vehicle for learning

* form of curriculum  * extra-curricula  * infused or separate?

Evaluation: short term (course achievement) & long term (changes in society)
Support for EE: moral & financial
Reorienting towards ed for sustainability
GROUP B: Fiji, Indonesia, Japan, Thailand (Reporter: Karen Hollweg)

Group B reviewed EE materials brought by representatives from Indonesia, Thailand, Fiji and Japan. The materials included guidance for principals/headmasters, supervisors, teachers (including cognitive evaluation materials and sheets for observing students), general guides for teaching EE, specific guides for teaching a variety of environmental issues (e.g. water pollution, recycling of garbage, plantation), a teacher trainer manual, case studies/reports of exemplary pilot projects and special teacher-developed units or classes such as Community Forestry with community involvement and environmental impact of bananas, and supplementary materials such as posters, brochures, videos and games produced by government agencies and businesses. The group then discussed and listed problems they faced in the development and use of these materials, talked about the steps needed in developing materials, and finally grouped the problems under the steps as follows:

Need Assessment / Goal Setting
- What kinds of materials are most cost effective for each target group?
- What kinds of materials are need for parents? for higher level officials?
- How do we have to handle political conflict?

Development Start and Revision
- How to make sure content is accurate and does not lead to misconceptions?
- How to keep content up-to-date?
- How to find the right people to participate in materials development (including people with ideas, money, expertise in scientific accuracy and educational approach)?
- Time and money needed to try out and revise materials.

Getting Materials Used, Distribution and Monitoring
- How to get content teaching reduced and education for the environment used more?
- How to get evaluation and observation sheets used?
- How to deal with teachers' objections to replacing subject matter/content and reluctance to implement materials?
- Teacher Professional Development - What is needed? Is ongoing help of other people needed?
- Production and distribution problems and expenses
- How to promote local adaptations of materials?
- How to share / learn about good materials?

Evaluation for Effectiveness and Improvements
- What do the materials accomplish once produced?
- What types of materials are most cost effective for specific target groups?
A discussion of ways to address these problems led the group to make 3 suggestions:

(1) Get the “right people” to participate in materials development – 2 alternatives
   Centralized: environmental scientist
                ecologist & other subject matter experts
                psychology of learning specialist
                instructional design and evaluation specialist
                curriculum designers / developers
                teachers
                instructional media expert
   Grass Roots: local community members with expertise in some area
                teachers
                academic specialists (especially on environmental concepts)
                if needed, instructional material experts

(2) Figure out what materials are most cost effective
    and what the materials accomplish once they are produced

(3) Establish a network (local-national-international) to access good materials/resources
    (network center or primary input & usage should be local)
GROUP C: Japan, Malaysia, New Zealand, Vietnam (Reporter: Barry Law)

(1) Cooperation between education, NGOs, local government, business education in the development of resources. This cooperation should also happen internationally.

(2) Materials should emphasize the aims of EE rather than nature studies.

(3) It is important that resource materials are integrated and linked together across the curriculum.

(4) Materials should be age or level and culturally appropriate.

(5) Teacher guidelines, workshops and seminars are important to explore the use of resource materials:
   a) teacher ownership and investment
   b) appropriate teaching and learning strategies

(6) Flexibility in the use of resources to allow for both student-centred learning and teacher-directed learning and guidance.

(7) Resources should reflect a balance of biophysical, social, economic and political issues within holistic eco-system
   (controversy should be viewed as an educational opportunity)

(8) Resources should promote an environmental ethic.

Materials
* Presentation is important
* Reference to local examples and link these to global issues
* Materials should encourage interaction between students and content, students and teacher, students and students, students and environment/community

Practicality of Resources
* Flexibility in different levels and in different settings
* Provide students with hands-on experience
* Cost effectiveness to produce resources
GROUP D: Japan, Korea, Pakistan, Philippines (Reporter: Brendan Barrett)

I. Tentative suggestions or considerations regarding materials development

(1) Content:
- Need for locally-specific tackling of environmental issues
- Interdisciplinary perspective
- This could be handled by teachers but time constraints key issue.
- Reflect on regional, national and international dimensions of environmental issues.
- Fairness and ethical dimensions should be included (tackling biases)
- Appropriate handling of information/data accuracy
- Promoting common citizenship

(2) Sequential structuring relating educational tiers, age group and complexity of issue.

(3) Writing Style
- Material to be written in styles that appeal to various age groups
- Clear communication of concepts

(4) Presentation:
- Clear and meaningful illustrations

(5) Action oriented/Problem solving:
- Work sheets/activity sheets/problem solving
- Field surveys/Case studies/Direct Experience/Decision making
- Studies such as environmental assessments
- Promoting interaction between pupils - group work, debates, etc.
- Promoting interaction with local community.

(6) Teacher Guides should be included: raises issue of teacher training

(7) Non-text book based supplementary materials:
- CD ROMS - Cassettes
- Videos - TV Programmes
- Internet (lists of websites on environmental issues/education)
II. Broader research issues impacting on environmental education materials preparation

(1) EE materials should where possible adopt a comprehensive/integrated approach re. various study/working use of text, audio/visual, data, styles, fieldwork, etc.

(2) Funding - quality materials cost money. Distribution alone is expensive.

(3) Inter-institutional partnership approach - involve various ministries, NGOS, teachers, experts, universities; promoting the idea of "co-sharing" in materials development

(4) Problems of keeping information up-to-date and relevant - dealing with complex and new environmental issues (specialist studies?)

(5) Exploring the way in which the national curriculum is transferred to EE teaching materials

(6) School programmes could be linked to community issues - how can this be handled? "role of school management committees / PTAs?"

(7) Incorporation of EE in the school curriculum - optional or not? new integrated courses? trans-disciplinary? avoiding duplication? other issues?

(8) Teacher training

(9) Special Groups - National Forums promoting EE materials - their development, funding, etc. Are these structures in place? Are they needed?

(10) Instituting a system of regular, effective monitoring of EE materials, promoting feedback and plugging gaps

(11) Lifelong approach to education (the link between schools, university and adult EE). Role of distance learning?

(12) The relationship between field studies and EE - not only text books

(13) The challenge of the Internet - how can this be included in EE?

(14) Looking at EE materials preparation in the context of linking initiatives (GLOBE and Eco-clubs, etc.)

(15) A Regional Forum? The Asia Environmental Education Centre? Is such a centre needed to develop an Asian perspective on EE materials, research, networking, training, etc.
Rapporteur’s Report
Mr. Alexander Kippen Cates
Foreign Teacher
Tottori University

I Conference Overview:
Theme:  *Analysis and Evaluation of Environmental Education Materials: Toward the Development of Quality Educational Materials*

Purpose:  (1) to share existing environmental education materials in Asian-Pacific area
(2) to analyze and evaluate sample environmental education materials
(3) to discuss considerations in developing quality EE materials
(4) to discuss the organization and themes for future seminars

II EE Teaching/Learning Materials: The Educational Context
* Dimensions of Program Development (Kniep 1987)
* Planning framework for EE teaching and learning (Palmer 1998)

III Country Reports
* regional differences
* cross-national commonalties

IV Sharing Experiences in EE Materials Development
* regional differences
* cross-national commonalties

V Suggestions for Improving EE Materials
* Working group suggestions: Group A, Group B, Group C, Group D
* Points in common
VI Personal Recommendations and Possible Future Directions

Key words: appropriate, relevant, flexible, user-friendly, localized, affordable, accurate, up-to-date, attractive, effective

General Considerations
* materials design should be informed by current thinking on EE teaching/learning
* materials should be seen as a means, not an end
* materials should be student-centred and teacher-friendly
* materials should involve active learning and promote student interaction
* materials should be flexible in use and adaptable to different situations

Materials Design
* materials should be appropriate for learners, teachers & teaching situations
* materials should be designed and assessed using criteria from guidelines such as the *NAAEE Guidelines for Excellence in EE Materials* (fairness & accuracy, depth, emphasis on skills building, action orientation, instructional soundness, usability)
* materials should address local, national, international dimensions of environmental issues
* materials should be assessed in terms of effectiveness and learner outcomes

Materials Production
* materials should be designed by teams involving cooperation between textbook writers, classroom teachers, environmental experts, ministry/government officials, business and NGOs
* funding should be allotted to ensure quality design and effective diffusion
* materials should be carefully reviewed, trialled and revised

Teacher Training
* teaching guidelines, handbooks, workshops and seminars should be provided to:
  - enable teachers to effectively use individual EE materials
  - enable teachers to understand environmental education aims and approach

Recommendations
Current state of EE Materials in the Asia-Pacific Region (“where we are now”)
* Further sharing of EE materials and experiences in the Asia-Pacific region
* Documenting EE materials now in use in the Asia-Pacific (e.g. directory)

Possible Future Directions (“where do we go from here”)
* Discuss the possibility of drawing up and disseminating:
  - an official set of guidelines for designing and assessing EE materials
  - guidelines for individual subjects (science, social studies, art, languages...)

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Dimensions of Program Development

Participants from each country and resource persons were requested to submit a short country/resource persons report. “Hopes for Future UNESCO/Japan Seminars on Environmental Education” is one of the points covered in the reports and mentioned as follows:

AUSTRALIA  
Dr. John F. Fien

Understanding that:
1) Environmental education must link to sustainable development.
2) Curriculum materials are not very useful without teacher education.
3) Ideas for materials from other countries to adapt for Australia.

CHINA  
Dr. Wu Yan

I wish the future conference can discuss more about how to guide the students to anticipate environmental education activities. And publish a constructive book after each meeting and submit the book to each representatives’ government so that the government can give effective support to schools’s environmental education.

FIJI  
Mr. Suruj Gulab Singh

Environmental Education is getting very important in every country. Seminars and workshops should be an on going program. It is hoped that knowledge gained in Seminars will help us to improve Environmental education in our countries. We hope the sponsors will give continued support for seminars, inservice training, workshops etc. so that every country in the Asia/Pacific could achieve its goal.

INDIA  
Dr. Lalit Pande

UNESCO/Japan seminars on environmental education have provided an opportunity for interaction and dialogues with experts from the Asia Pacific region- their approaches, problems etc. This interaction is very valuable and can be carried forward in two parts:

1. Influencing policy at the international and national levels to give support and recognition to
environmental education in both moral and financial ways. As UNESCO/Japan has already provided the leadership and initiative for environmental education, this could be further strengthened by means of seminars and exchange visits in the Asia Pacific region.

2. Identify opportunities for cooperation and specific programmes between selected countries and individual experts. This will broaden the understanding of global and local issues, the diverse socio-economic conditions of different societies and how this can be adapted in the national curricula and education systems. How best to develop programmes, materials and teacher training.

**INDONESIA**

Prof. Dr. Made Putrawan

1) Evaluation Strategy on Environmental Education (EE)
2) EE research findings and
3) Environmental Values Education

**JAPAN**

Dr. Toshihiko Higuchi

1) Programs in teacher training.
2) Curriculum and materials for a comprehensive understanding of the environment.
3) Environmental education with partnership between schools and local communities.

**MALAYSIA**

Mr. Zahid Sofian bin Othman

For the future UNESCO/Japan Seminar on Environmental Education I hope that participants will be able to share good teaching aids that can be used by the practitioners from all over the world. The future seminar will also give us ideas about how to make environmental education more enjoyable and meaningful for all.

**NEW ZEALAND**

Mr. Barry Law

Suggestion 1

I would like to see a seminar that explores appropriate teaching and learning strategies that assist
individuals to critically reflect on their attitudes, values and behaviours towards the environment. What are the essential skills that promote positive social action for the environment.

Suggestion 2
I would like to see a UNESCO seminar that combines country representatives from community education, teacher education and central government to explore the networking, cooperative planning and framework required for the effective implementation of quality environmental education programmes.

PAKISTAN  Mr. Munir Ahmed
Today the globe presents an international community surrounded by a unifield environment. Any environmental problem in one part is likely to effect the rest of the world. The future of mankind is one; the issue is global in nature. All nations of the world, therefore need to make joint efforts to spread Environmental Education and take environment into consideration while formulating the development policies and programmes. The forum of the seminar can provide an opportunity to share our concern and experiences, also to take advantage of achievements made in different countries/organization of the region. It will review and analyze the efforts made by different countries in the fields of Environmental Education, specially in light of discussion and decisions made during the first seminar of March 1998. It can also help in formulating the future course of action for the spread of Environmental Education in individual countries as well as collective efforts to be made by member states. UNESCO’s role and involvement in development of Environmental Education material and Human resources development (specially teacher training) can also be reaffirmed. Role of individual country in Environmental Education can also be defined and cooperation with regional countries can be explored and sought. Exchange of material and expertise in Environmental Education can also be possible after the seminar.

PHILIPPINES  Dr. Aurora Franco
I hope that future UNESCO/Japan Seminar on Environmental Education could serve as a potent avenue for addressing issues and problems that would be identified in the Second UNESCO/
Japan Environmental Education Seminar for a more effective EE in the whole of the Asia-Pacific.

**REPUBLIC OF KOREA**

Dr. Suk-jin Choi

- Collection and exchange of information and data on various EE.
- Collection and exchange for the best selected EE teaching & learning.
- Common use of practical program including curriculum, data, and experience on ‘EE in (through, within) Environment’.
- Information exchange and network formation on the condition and orientation of EE in each country within Asian-Pacific region.

**THAILAND**

Ms. Koontrolrat Ratanasing

Topic for the future seminars is expected to be either on school-based curriculum development, school and community participation in environmental education, or teaching-learning strategies and approach to environmental awareness and behaviour.

**VIETNAM**

Dr. Hoang Duc Nhuan

1) To discuss about the basic approaches in EE
   - for general education
   - for non-formal education
   - for higher education

2) On specific method of learning and teaching EE

3) To discuss about the mode of action in learning and teaching EE
Closing Remarks

Mr. Masayuki Inoue
Director,
International Affairs Planning Division
Ministry of Education, Science, Sports and Culture
Japanese National Commission for UNESCO

Professor Arao, Vice-President, Tokyo Gakugei University,
Professor Yamashita, Director, Field Studies Institute for Environmental Education,
Distinguished participants,
Ladies and Gentlemen,

On behalf of the Japanese National Commission for UNESCO and Monbusho, Ministry of Education, Science, Sports and Culture, I would like to congratulate you on a highly productive outcome at this UNESCO/Japan Seminar on Environmental Education in Asian-Pacific Region.

I heard that an active exchange of opinions and fruitful discussion on analysis and evaluation of environmental education materials have been made during these three days.

I would like to extend my sincere gratitude to all the participants who have contributed through the reports and discussions. I heartily thank Mr. Harako for his dedicated chairpersonship and Mr. Cates for his hard work as a rapporteur.

I understand that the organization and themes for future seminars were discussed today. I am sure that third seminar held in 1999 fiscal year will make a valuable contribution to the promotion of environmental education in Asia and the Pacific Region and the development of regional cooperation in this field. I sincerely ask all the participants for your continued cooperation to the seminar.

In closing, I would like to thank again President Okamoto and all members concerned of Tokyo Gakugei University for their excellent management of the seminar. I thank again all the participants for your active contribution and wish you a safe journey back to your home.

Thank you very much.
Ladies and gentlemen, it is my pleasure to stand before you and make closing remarks.

Our time has been limited, but I hope that you had good discussions and have been inspired. I believe that these discussions and the results will help us produce better environmental education materials in the future. In this process, I hope that we will cherish our friendship and continue our collaboration.

After three days of intensive program, we Japanese would say Otsukare-sama, which means, “You must be tired.” You may be a little tired, but I hope that you are tired from good discussions.

I’d like to take this opportunity to tell you a little story.

Last month, in Japan, and allover the world, people were talking about a “meteor stream” or “meteor shower” coming from the constellation Leo. On the night of the 19th, I went to the Lake Sagami area, which is about 50 kilometers west of here. It was 3 a.m. The skies were dark but clear, the air was crisp on my cheeks. The shooting stars were mysterious and very, very beautiful. It was such a deeply moving experience. I felt as if I were in a dream.

Then, a cold reality struck me on my way home. The place was far away from town, and it was late at night. So, most of the people had come by car. The roads under the dawning skies were jam-packed.

The people there had been able to see the shooting stars thanks to the clean and clear air of the place. But the very same people were now polluting the precious air with the fumes and emissions from their own automobiles. To tell you the truth, I myself was one of such people.

Throughout my snail-paced drive home, I kept thinking of this irony.

I regret what I did on that night, and I believe that each of us should seriously think about many environmental issues that surround us, however small they may look. There may just be a simple step you and I can take in a right direction now.

Thank you, and please have a safe trip home.
Implementation Guidance


II. **When:** 9-11 December, 1998

III. **Where:** National Olympic Memorial Center for the Youth

IV. **Organizer:** Hosted by the Ministry of Education, Science, Sports and Culture, Japan (MONBUSHO), and the Japanese National Commission for UNESCO. Co-hosted by Tokyo Gakugei University. In cooperation with the United Nations University, Institute for Advanced Studies (UNU/IAS)

V. **Theme:** Analysis and Evaluation of Environmental Education Materials: Toward the Development of Quality Educational Materials

VI. **Purpose:**
   1. introduction, analysis, and evaluation of existing environmental education materials in the Asian and Pacific region
   2. discussion on the organization and theme for the next seminar

VII. **Schedule:**

<table>
<thead>
<tr>
<th>Day</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>Opening&lt;br&gt;Keynote Speech&lt;br&gt;Country/Resource Persons Reports&lt;br&gt;Welcoming Reception</td>
</tr>
<tr>
<td>II</td>
<td>Group Work I&lt;br&gt;Group Work II&lt;br&gt;Roundtable Discussion I</td>
</tr>
<tr>
<td>III</td>
<td>School visit&lt;br&gt;Roundtable Discussion II&lt;br&gt;Rapporteur’s Report&lt;br&gt;Closing</td>
</tr>
</tbody>
</table>

VIII. **Participants:**

   - From the Asian and Pacific Region (13)
Administrators or experts on environmental education materials/resources from the
Asian and Pacific countries as follows: Australia, China, Fiji, India, Indonesia,
Japan, Malaysia, New Zealand, Pakistan, Philippines, Korea, Thailand, and Vietnam

- Resource persons (2)
  From UNU/IAS and USA

- Observers
  From UNU, Asia/Pacific Cultural Centre for UNESCO and MONBUSHO,

IX. Co-chairpersons and Rapporteur:

- Co-chairpersons
  Dr. Morihiro Aoki, Miyagi University of Education
  Dr. Munetsugu Kawashima, Shiga University
  Mr. Fumiaki Taniguchi, Konan University
  Ms. Keiko Ueda, Tohwa University
  Dr. Shigeru Asanuma, Tokyo Gakugei University
  Dr. Etsuzo Furuta, Tokyo Gakugei University
  Dr. Nobuyasu Katayama, Tokyo Gakugei University
  Dr. Mikio Kimata, Tokyo Gakugei University
  Dr. Kiyoshi Ogawa, Tokyo Gakugei University
  Mr. Masao Tsukahara, Tokyo Gakugei University
  Dr. Shuji Yamashita, Tokyo Gakugei University

- Rapporteur
  Mr. Alexander Kippen Cates, Tottori University
# Agenda

## December 9 (Wednesday)  Day 1

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>9:30 - 10:00</td>
<td>Registration</td>
</tr>
<tr>
<td>10:00 - 10:30</td>
<td>Opening Ceremony</td>
</tr>
<tr>
<td>10:30 - 11:00</td>
<td>Keynote Speech</td>
</tr>
<tr>
<td>11:00 - 12:30</td>
<td>Country/ Resource Person’s Reports</td>
</tr>
<tr>
<td>12:30 - 14:00</td>
<td>Lunch</td>
</tr>
<tr>
<td>14:00 - 17:00</td>
<td>Country Reports (Break inbetween)</td>
</tr>
<tr>
<td>17:00 - 18:00</td>
<td>Break</td>
</tr>
<tr>
<td>18:00 - 20:00</td>
<td>Welcoming Reception</td>
</tr>
</tbody>
</table>

## December 10 (Thursday)  Day 2

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>9:30 - 10:00</td>
<td>Orientation for Group Work</td>
</tr>
<tr>
<td>10:00 - 12:00</td>
<td>Group Work I</td>
</tr>
<tr>
<td>10:00 - 12:00</td>
<td>Sharing experiences in environmental education material development</td>
</tr>
<tr>
<td>12:00 - 13:30</td>
<td>Lunch</td>
</tr>
<tr>
<td>13:30 - 15:00</td>
<td>Group Work II</td>
</tr>
<tr>
<td>13:30 - 15:00</td>
<td>Discussion of suggestions for improving environmental education material development</td>
</tr>
<tr>
<td>15:00 - 15:15</td>
<td>Break</td>
</tr>
<tr>
<td>15:15 - 17:00</td>
<td>Roundtable Discussion I</td>
</tr>
<tr>
<td>15:15 - 17:00</td>
<td>Sharing of group work and discussion for producing a list of suggestions for the development of quality environmental education materials</td>
</tr>
</tbody>
</table>

## December 11 (Friday)  Day 3

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
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</thead>
<tbody>
<tr>
<td>8:00 - 13:00</td>
<td>School Visit to Kanazawa Elementary School in Itabashi-ward</td>
</tr>
<tr>
<td>13:00 - 14:00</td>
<td>Lunch</td>
</tr>
<tr>
<td>14:00 - 15:30</td>
<td>Roundtable Discussion II</td>
</tr>
<tr>
<td>14:00 - 15:30</td>
<td>Discussion of plans and themes for the next seminar</td>
</tr>
<tr>
<td>15:30 - 15:45</td>
<td>Break</td>
</tr>
<tr>
<td>15:45 - 16:15</td>
<td>Rapporteur’s Report</td>
</tr>
<tr>
<td>16:15 - 16:45</td>
<td>Closing Ceremony</td>
</tr>
</tbody>
</table>
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