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

March 18 - 20, Tokyo

FINAL REPORT



Japanese National Commission for UNESCO Ministry of Education, Culture, Sports, Science and Technology Tokyo Gakugei University

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Introduction

Introduction

The Sixth UNESCO/Japan Seminar on Environmental Education in Asian-Pacific Region was held, on the basis of the guidelines for the Sixth Programming Cycle of APEID Activities (1997-2000), from March 18 (Tue) to March 20, 2003 at the National Olympic Memorial Center for the Youth in Tokyo, Japan.

The Seminar was organized by Tokyo Gakugei University under the auspices of the Ministry of Education, Culture, Sports, Science and Technology and the Japanese National Commission for UNESCO in cooperation with the UNESCO Asia and Pacific Regional Bureau for Education in Bangkok, Thailand.

Theme of the Seminar was "Environmental Education and Sustainable Development." Under this, the following three purposes were set:

- 1) to share experiences in educational programs or activities to the global challenge of sustainable development,
- 2) to critically review the concept of environmental education and the newly emerged one of education for sustainable development, and
- 3) to discuss the future direction of environmental education.

What follows is greetings delivered at the opening ceremony, papers presented by each participant, and the record of the symposium, which took place on the last day of the Seminar.

Opening Remarks



Welcome Remarks

Mr. Toru Ishida

Director, Office for Planning and Coordination, International Affairs Division, MEXT, and Executive Secretary, Japanese National Commission for UNESCO,

Prof. OKAMOTO, President of Tokyo Gakugei University,

Prof. KOIZUMI, Director of the Field Studies Institute for Environmental Education of the university,

Ms. GREGOLIO, Specialist in Science and Technology Education, Asia-Pacific Regional Bureau of Education of UNESCO,

Distinguished Participants,

Ladies and Gentlemen;

On behalf of the Japanese National Commission for UNESCO and MEXT, the Ministry of Education, Culture, Sports, Science and Technology, I would like to extend my warmest welcome to all of you here.

I understand there are three purposes for this seminar. First one is to share educational experiences concerning sustainable development. Second one is to examine the conceptual similarities and differences between "environmental education" and "education for sustainable development." Third one is to review the course to be taken about environmental education. These issues seem to reflect the discussion in the World Summit on Sustainable Development held in Johannesburg last year.

As you may know, the Japanese Government advocated the "United Nations Decade of Education for Sustainable Development" in the Plan of Implementation of WSSD. After that, Japan proposed the draft resolution with more than 40 countries to the United Nations. As a result, the United Nations General Assembly adopted the resolution and designated UNESCO as the lead agency for the Decade.

In this meaning, I understand it is timely to hold the 6th UNESCO/Japan Seminar on Environmental Education in Asia-Pacific Region today. The new concept of sustainable development consists of broad and complicated elements on environment and seems to have no concrete definition and components so far. I believe that this seminar becomes a real challenge for our sustainable future, and that we can share fruitful outcomes.

In closing, I would like to express my gratitude to all the staff of the Tokyo Gakugei University who devoted themselves to the preparation for this seminar. Also, I seriously hope all of you enjoy staying here in Tokyo.

Thank you very much.

Greetings

Mr. Yasumasa Okamoto President Tokyo Gakugei University

Mr. Toru Ishida, Director, Office for Planning and Coordination, International Affairs Division,
MEXT, and Executive Secretary, Japanese National Commission for UNESCO,
Prof. Takeei Koizumi, Director, Field Studies Institute for Environmental Education, Tokyo Gakugei University,
Distinguished Participants,
Ladies and Gentlemen,

It is my great pleasure to have an opportunity of making a welcome speech at the opening ceremony of the Sixth UNESCO/Japan Seminar on Environmental Education in Asian-Pacific Region. I express our hearty welcome to all the participants on behalf of Tokyo Gakugei University, which cosponsors and coorganizes this seminar with MEXT (the Ministry of Education, Culture, Sports, Science, and Technology) and the Japanese National Commission for UNESCO. 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.

Now at the beginning of the new century, environmental issues are among the most urgent global problems. The Johannesburg World Summit on Sustainable Development last year depicts a quite depressing picture of the global conditions. It points out in its Declaration that:

The global environment continues to suffer. Loss of biodiversity continues, fish stocks continue to be depleted, desertification claims more and more fertile land, the adverse effects of climate change are already evident, natural disasters are more frequent and more devastating and developing countries more vulnerable, air, water, and marine pollution continue to rob millions of a decent life.

The Johannesburg Declaration on Sustainable Development lists among 'the worldwide conditons that pose severe threats to [the] sustainable development' not only natural environmental conditions but also social, political and other environmental conditions such as:

chronic hunger; malnutrition; forein occupation; armed conflicts; illicit drug problems; organized crime; natural disasters; illicit arms trafficking; trafficking in persons; terrorism; intolerance and incitement to racial, ethnic, religious and other hatreds; xenophobia; and epidemic, communicable and chronic diseases, in particular HIV/AIDS, malaria and tuberculosis.

The theme of the Sixth UNESCO/Japan Seminar is, I understand, "Environmental Education and Sustainable Development". It proposes (1) to share experiences in educational problems or activities to the global challenge of sustainable development, (2) to critically review the concept of environmental education and the newly emerged one of education for sustainable development, and (3) to duscuss the future direction of environmental education.

I do hope that this sixth seminar will succeed in attaining these important purposes. I also hope this seminar will bring all the participants into a deeper understanding and friendship with one another. Thank you.

Paper Presentation



Environmental Education in Otago (New Zealand) Primary Schools: Education 'for' the Environment?

Waitati Primary School New Zealand Tania Jan McLean

Abstract

This paper begins by briefly outlining environmental education in the formal education sector in New Zealand. It is suggested that education 'for' the environment is synonymous to 'sustainable education', 'education for sustainability', 'education for sustainable development' and 'education for a sustainable future'. Such education involves action, which is defined as situations where students are involved in the decision making process, and when the focus is the resolution of environmental issues. Education 'for' the environment improves the environment (or preserves pristine environments), and changes students' behaviours, attitudes and values. Real examples from New Zealand primary schools implementing such education are described.

The second part of this paper reports on a study conducted as part of Tania McLean's Masters degree in Environmental Education (Honours) during 2002. This study investigated the extent to which, and in what ways, Otago primary teachers implement environmental education, especially education 'for' the environment in their programmes. This was achieved in three ways through the identification of: examples of education 'about', 'in' and/or 'for' the environment; strategies used to implement environmental education, especially education 'for' the environment; and factors that assist teachers to implement environmental education, especially education 'for' the environment. The research methods used to conduct this study included a survey and case studies. The findings indicate the importance of in-service teacher education, as well as a range of other requirements to enable primary school teachers to implement education 'for' the environment.

1.0 Education 'for' the Environment

We are increasingly made aware of environmental issues both in New Zealand as well as overseas. It is widely agreed that education is the most effective means of confronting and working towards resolving our future challenges (Fien 2002, p. 8; UNEP 1999, p. 371; UNESCO 1997, p. 15). The Ministry of Education acknowledged the significant role of the school based sector with the publication of *Guidelines for Environmental Education in New Zealand Schools* (Ministry of Education, 1999). To introduce this document to teachers, the Ministry of Education coordinated a nationwide contract involving workshops and pilot schools in 2000, as illustrated in Table 1. This table also depicts other recent developments in environmental education across the formal education sector.

Table 1: Summary of Recent Environmental Education Developments Relevant to the Formal Education Sector in New Zealand

1995		 Environment 2010 Strategy (Ministry for the Environment, 1995) released. 	
1775		Draft Curriculum Guidelines for Environmental Education (I aw and Baker 1005)	
1000		Draji Curriculum Guidelines for Environmental Education (Law and Baker, 1993).	
1998	•	Learning to Care for Our Environment Me Ako ki te Tiaki Taiao: A National Strategy fo	
		Environmental Education (Ministry for the Environment, 1998) published.	
1999	•	Guidelines for Environmental Education in New Zealand Schools (Ministry of Educ	
	1999) published and distributed to schools.		
2000	•	Ministry of Education contracted Christchurch College of Education to facil	
	nationwide teacher education in environmental education as outlined in the Guidelines.		
	•	Release of the Enviroschools toolkit.	
	•	Consortiums of facilitators from 11 regions trained and 1 from each region trained in <i>Enviroschools</i> in preparation for work with pilot schools.	
2001	•	Training workshops held for teachers nationwide to assist in their implementation of the	
		Guidelines.	
	•	Pilot schools (2 or 3 from most regions) work with facilitators to develop and implement environmental education into their programmes.	
2002	•	New Zealand Association for Environmental Education (NZAEE) conference in Hamilton.	
	•	Further training workshops and pilot schools in most regions as part of the Ministry of	
		Education contract.	
	•	Six more regions have facilitators trained through the Ministry of Education contract.	
	•	Nationwide training of Enviroschools facilitators.	
	•	Funding allocated to Colleges of Education for the appointment of regional coordinators in	
	environmental education.		
	•	Ministry of Education contract reviewed and continues with Christchurch College of	
		Education.	
	•	Ministry of Education evaluation of environmental education in New Zealand schools	
		commences with a literature review conducted by the New Zealand Council for Education	
		Research (NZCER) and the Centre for Science and Technology Education Research,	
		Waikato University.	
2003	•	Regional environmental education coordinator positions commence with training bringing	
		together the environmental education experts from Christchurch College of Education,	
		Enviroschools, Auckland Regional Council and Masters of Environmental Education	
	degree recipients.		
	•	The Enviroschools Award scheme is launched.	

1.1 What Is Environmental Education?

In New Zealand environmental education is defined as A multi-disciplinary approach to learning that develops the knowledge, awareness, attitudes, values and skills that will enable individuals and the community to contribute towards maintaining and improving the quality of the environment (Ministry of Education 1999, p. 9; Ministry for the Environment 1998, p.8; Ministry for the Environment 1995).

Because knowledge about the environment and experiences in the environment are included as 'environmental education', to some extent all education can be considered environmental, as the 'environment' consists of our social, natural, built, cultural, economic and political surroundings. Consider, for example, a child writing a report about the moon, a teenager learning to drive a car, or an adult studying their family history.

So what makes environmental education different to other education? This educator would argue that it is education 'for' the environment, one of the three key dimensions of environmental education (Ministry of Education 1999, p. 14; Ministry for the Environment 1998, p.11; Lucas 1979, pp. 51-64).

Education 'about' the environment is concerned with knowledge about the environment and environmental issues (Ministry of Education, 1999, p.14). Education 'in' the environment offers learners experiences beyond the classroom, and often in the natural environment (Ministry of Education, 1999, p.14). Education 'for' the environment is the action component of environmental education, providing students with opportunities to make decisions and work towards the resolution of environmental issues (Jensen and Schnack, 1997, p.169).¹

1.2 What is Education 'for' the Environment?

While there are overlaps with the other two key dimensions, education 'about' and 'in' the environment, this paper is particularly concerned with the dimension of education 'for' the environment. This is because education 'for' the environment is transformative and is considered by many to be the only true environmental education (Gough 1997, p. 142; Fien 1993, p. 16; Huckle 1986, p. 13; 1983, pp. 99-100). The effective implementation of education 'for' the environment results in improving the environment (or preserving pristine environments) and in changing behaviours, attitudes and values.² In recent times, education "for" the environment has been equated to 'education for sustainability', 'education for sustainable development', 'sustainable education', and 'education for a sustainable future'. In effect, the use of the terms 'sustainable' or 'sustainability' distinguishes this type of education from the broader concept of environmental education,

¹ The term 'student' here refers to learners of all ages, including primary school children

² 'Environment' in this article includes the social, cultural, economic, political, built and natural environment.

which often emphasises education 'about' and/or 'in' the environment.

1.3 Action As Opposed to Activity

As education 'for' the environment is the action component of environmental education, it is important to define action. Two criteria are required for action as shown in Table 2:

- Students need to be involved with the decision making process, and
- Resolution of environmental issues needs to be the focus

	No student input	Students involved in deciding
		what to do
Activity focussed on the	ACTIVITY	ACTIVITY
symptom of an	Education 'about' or 'in' the	Education 'about' or 'in' the
environmental issue	environment	environment
Activity targeted at solving	ACTIVITY	ACTION
an environmental issue	Education 'about' or 'in' the	Education 'for' the environment
	environment	

Table 2: The Criteria for Environmental Action

Source: McLean (2002), p.21; Adapted from Jensen and Schnack (1997, p. 169)

To illustrate this further, consider a situation where students choose to collect litter. Although there is student decision making in this activity, it addresses the symptoms rather than the cause of the environmental issue. Similarly, for example, at Department of Conservation initiated tree planting on Arbour Day, students are not involved in the decision making process so this is an activity rather than an action.

1.4 What Does Education 'for' the Environment Look Like?

The Scenarios presented below in Table 3 illustrate some examples of education 'for' the environment. These are based on real examples from Otago, New Zealand, primary schools. Student and teacher roles are shown, and can be summarised as follows.

Students:

- Identify and choose an environmental issue to resolve (all Scenarios, Table 3)
- Think critically and problem solve to decide on courses of action to take. They plan using 'Action Planners' from the appendix of the *Guidelines for Environmental Education in New Zealand Schools* (for example, Figure 1, below; Scenario A, Table 3)

A nucer Etrencway flaver that is our vision? native plants. trees and por with. mack rock gots What skills will we need? Who could influence the decision? •We will need computer skill, writeing skills, drawing skills & · All of us the skills to cooperate, respect & Who makes the final decision? • All of US to be Kind! What are we going to do? are going to the entrence way Evaluation **Reality Check** We (Did your actions result in (Do these actions lead to your vision?) movement toward your vision?) redo How can we make people more How will we find out what people aware of the issue? think and feel? • We can tell people what we are doing by putting it in talk to ·ask and people. the envioromental ed newsletter Where will you find more information? From the 8 internet magervins

Figure 1: Example of an Action Planner Completed by Students

Students (continued):

- Take time to reflect on their actions (Scenario A, Table 3)
- ➢ Work collaboratively (Scenarios A, B, Table 3)
- Learn alongside community members (Scenarios B, C, D, Table 3)
- Have ownership (all Scenarios, Table 3)

Teachers:

- Allow students to have a role in determining their own learning (all Scenarios, Table 3)
- > Assist students to discover the symptoms and real causes of environmental issues
- > Develop students' critical thinking and problem-solving skills (all Scenarios, Table 3)
- > Arrange collaborative action projects in negotiation with students and community
- Focus on one or two issues in-depth (all Scenarios, Table 3)
- Ensure projects are multidisciplinary (all Scenarios, Table 3)
- > Take part in the learning alongside students and community members (Scenario B, Table 3)
- > Reflect, re-evaluate and think about their teaching (Scenario A, Table 3)
- > Utilise a facilitative, inclusive teaching style

Table 3: Windows on Education 'for' the Environment

Scenario	A year 5 class is taking part in an environmental action project. Ideas for action are			
А	brainstormed and investigated. After several days, a range of ideas are listed including: making			
	signs to put around the school to notify students of potential hazards; checking for and			
	replacing leaking tap washers; building a worm farm; creating signs to encourage unused			
	electrical equipment to be turned off; and, writing letters to companies and politicians about			
	local issues. The students choose groups of up to 3 students to work with, or work alone. Next			
	they utilise a matrix format to assist their decision making about the actions they will take.			
	Once decided on their vision, the students complete an action planner, identifying the steps			
	they will need to take so to achieve their vision. The teacher encourages the students to reflect			
	on the process by completing a learning journal and also keeps one.			
Scenario	It's environmental education morning at school. Students arrive with their parents and			
В	caregivers, complete with tools, straw, compost, and other items they need to begin			
	construction of their edible garden. The students have been planning this for weeks. They			
	worked in whanau (cross age) groups to investigate and survey their school environment, then			
	came up with a map detailing suggested improvements. Next, the students chose one			
	improvement they would like to work on, surprising their teachers by opting for an edible			
	garden rather than improved playground equipment. After visits to numerous local gardens,			
	assistance from experienced gardeners and plenty of research, the students designed their ideal			
	garden. The teachers have also learnt much about garden design from the project. Today, the			
	students' vision will begin to become a reality, and the students are eager to commence			
	construction. Their enthusiasm for the project has spread to the parents and teachers.			

Scenario	On entering the classroom one morning, a year 7 student comments to his teacher about the		
С	speed of traffic travelling past the school citing an unsafe incident involving his younger sister.		
	The teacher talks to the class about their feelings on this issue. They agree that the speed of		
	traffic is of concern. The teacher asks the students what they can do about it. They come up		
	with a list of suggestions and then prioritise these. Students choose tasks from the prioritised		
	list to act on. A week later, after several phone calls and some research, some local senior		
	citizens, a traffic officer and the council transport officer visit the class. Together, they organise		
	a roster to monitor the speed of traffic. A month later they have some data confirming the speed		
	of traffic past the school is unacceptable. With community assistance, the students decide to		
	collate the data, write a report and present their case to council. Speed humps are installed two		
	months later.		
Scenario	Students pass by a newly built effluent stop for stock trucks on their way to school. They		
D	decide it looks unattractive and ask what they can do about it. Their teacher suggests they		
	contact the stakeholders. With the council and Transit New Zealand they measure the area. The		
	students then visit a nursery and ask a parent with landscaping skills to assist them. Together		
	they come up with a planting plan to beautify the area. They draw on their maths skills to		
	calculate costings. They present their plans to council. Later in the year, the students work		
	together with council, Transit New Zealand and the community to plant the area.		
Scenario	The class have been discussing wai, the Maori word for water. The teacher describes waimate,		
Е	dead water. A student said that her local stream was dying. This 11 year old student remembers		
	playing in the stream, catching lobsters and other creatures five years earlier. The teacher sees		
	this as a learning opportunity. Students visit the 'dying' stream, write a report, liase with the		
	local iwi (Maori tribe) and council to conduct water monitoring. Subsequently the stream is		
	fenced off from farm animals and the students help to plant the riparian strip.		

2.0 Report on a Study of the Implementation of Environmental Education in Otago (New Zealand) Primary Schools

This study was conducted as part of Tania McLean's Masters degree in Environmental Education (Honours) during 2002. It is titled *Environmental Education in Otago Primary Schools: Education 'for' the Environment?*

As shown in figure 2, Otago is in the South Island and is the second southern most province in New Zealand.



Figure 2: Map of Otago, lower South Island of New Zealand Inset: Map of New Zealand

2.1 Significance of the Study

This study is significant for three main reasons. First, there has been no research in the field of environmental education across Otago primary schools, and little elsewhere in the New Zealand. Secondly, this research is important because it contributes to the understanding of environmental education within New Zealand. Finally, this study contributes to the international body of research in environmental education by providing information on existing programmes. Thus it is line with the real and immediate concerns of teachers (Robertson and Krugly-Smolska 1997, p. 325) and counteracts the small amount of research exploring teachers' practices (Grace 2000, p. 331).

2.2 Aim of the Study

This study aimed to investigate the extent to which and in what ways Otago primary teachers implement environmental education, especially education 'for' the environment in their programmes. This was achieved in three ways through the identification of:

- 1. Examples of education 'about', 'in' and/or 'for' the environment
- 2. Strategies used to implement environmental education, especially education 'for' the environment, and
- 3. Factors that assist teachers to implement environmental education, especially education 'for' the environment

2.3 Methodology

The research methods used to conduct the study included survey and case study methods. A survey of the 150 Otago schools with primary students was conducted, utilising a descriptive questionnaire as a data-gathering technique (58% return rate). Three case studies of primary schools were conducted. These cases offered an in-depth look at the ways teachers implement environmental education through unstructured small group interviews, participation observation and document investigation. The data collected were largely qualitative so much of the analysis was interpretative. In regard to the quantitative data from the questionnaire, descriptive statistical analysis was carried out. The study was rigorous, integrating procedures common to social science research and addressing ethical issues appropriately.

2.4 Research Findings

The research findings relate firstly to teachers implementation of the key dimensions of environmental education, secondly to the strategies they use, and finally to the factors that assist them.

2.4.1 The Implementation of The Key Dimensions of Environmental Education

Education 'about' the Environment: All Otago primary teachers surveyed include education 'about' the environment as part of their programmes. Often teachers educate about plants and animals, although water and waste minimisation are also commonly occurring themes. Education 'about' the environment is readily integrated into existing curriculum programmes, particularly in Science and Technology.

Education 'in' the Environment: The questionnaire results indicated that 98 percent of Otago primary

teachers implement education 'in' the environment. Examples include camps and outdoor education, field trips, litter pick-ups, physical education and sport, and activities utilising the school environment. Again, education 'in' the environment readily ties into existing curriculum plans and has links particularly with Physical Education and Health.

Education 'for' the Environment: The case studies and questionnaire results suggested that a small number of teachers (fewer than 5 percent) in Otago primary schools have accomplished education 'for' the environment in their programmes. Examples include improving sites within school and community environments. Here students are involved in decision making and their actions target local environmental issues.

2.4.2 Teaching Strategies to Implement Environmental Education, Especially Education 'for' the Environment

The teaching strategies employed by Otago primary school teachers to implement environmental education, especially education 'for' the environment were found to include:

• Involving students in decision making about their learning

Students need to be involved in deciding on the issue to be investigated and planning the actions to take.

• Action towards the resolution of environmental issues

Rather than targeting symptoms of environmental issues, the causes need to be examined and action needs to be taken towards solving them.

• Teacher and student reflection

Teachers need to become reflective practitioners and encourage students to reflect on their learning and actions.

• Employing a whole school approach to environmental education

Ideally the whole school (students, teachers, other staff, Board of Trustees, parents, whanau and caregivers and community members) need to be involved in environmental education.

• Utilising the 'teachable moment'

This is when the teacher utilises a situation to maximise opportunities for teaching environmental education (for example in Scenario Environment, Table 3)

• Utilising a multidisciplinary approach³

Environmental education should be integrated across the curriculum, and not limited to the realms of Science, Technology, Physical Education and Health. However, time needs to be set aside specifically for one or two issues to be focused on in-depth.

• Utilising the real local environment

Students need to experience their own environment and work towards the resolution of local issues.

• Visiting other schools conducting education 'for' the environment

³ The term 'multidisciplinary' is used here synonymously with 'interdisciplinary'

Students and teachers can learn from a great deal from their peers.

2.4.3 The Factors that Assist Teachers to Implement Environmental Education, Especially Education 'for' the Environment

Factors found to assist Otago primary school teachers with their environmental education, especially education 'for' the environment were found to be:

- *Teachers' own enthusiasm, commitment and attitudes to the environment and environmental education* Schools implementing education 'for' the environment have enthusiastic and committed teachers, with a positive attitude to environmental education and the environment. These teachers utilise many of the strategies previously listed. Some have discovered the strength of a whole school approach, setting aside regular time for environmental education. Others have utilised the 'teachable moment' to maximise opportunities for teaching environmental education.
- Support for environmental education from within the school, especially from other teachers and the principal

Teachers implementing education 'for' the environment have strong support for environmental education from within their school.

- *Community partnerships*, including those with:
 - o Parents, whanau and caregivers
 - External government organisations, such as local councils and the Department of Conservation
 - o Community groups.

Schools implementing education 'for' the environment have robust community partnerships with parents, whanau and caregivers, external government organisations and community groups. These community groups and organisations realise that they are positive partners in environmental education, and that they have an educative role alongside schools.

• In-service teacher education

The findings indicate that those teachers implementing education 'for' the environment have undertaken in-service teacher education on the *Guidelines for Environmental Education in New Zealand Schools* (Ministry of Education, 1999). Furthermore, the amount of teacher education appears to relate directly to the amount of quality education 'for' the environment that teachers implemented.

• The Guidelines for Environmental Education in New Zealand Schools (Ministry of Education, 1999) This document has been beneficial in that it has given teachers 'permission' to teach environmental education.

The findings in regard to the strategies and factors assisting teachers to implement environmental education, especially education 'for' the environment were compared to those found in the literature. From the italicised features of a model school (Table 4) it is clear that many of the strategies and factors highlighted in the literature as important for teachers to implement environmental education, especially education 'for' the environment are also evident in this study. The bolded features (Table 4) indicate two previously unidentified strategies for teaching environmental education, and one previously unidentified factor, found in this study.

Table 4: A Model School Implementing Environmental Education, Especially Education 'for' the Environment: Strategies Used by Teachers and Factors Assisting Teachers: Comparison To the Findings From This Study

Facilitative teaching strategies	The teachers facilitate by	Other factors required:
employed by teachers to promote	encouraging students to:	
change 'for' the environment:		
• Teachers are reflective	• Have a role in determining	• Enthusiastic, committed
practitioners. They think	their learning.	teachers with a positive attitude
about and reflect on their	• Have ownership of their	towards environmental
teaching.	learning.	education.
• Teachers utilise a	• Identify and choose issues to	• Support from within the school
multidisciplinary approach to	resolve.	(from the Board of Trustees,
focus on one or two issues	• Find solutions and work	Principal and other teachers).
in-depth.	towards the resolution of	• Community partnerships (with
• Teachers work with others in	environmental issues (rather	parents, whanau and
the school to employ a whole	than them being imposed by	caregivers, community groups
school approach.	an expert).	and external government
• Teachers utilise the school	• Discover the symptoms and	organisations.
and local environment.	real causes of environmental	• Governmental guidance i.e.:
• Teachers take part in the	issues.	whether environmental
learning alongside students	• Work alongside teachers and	education is mandatory or not.
and community members.	community members.	• Teacher education.
• Teachers utilise the	• Think critically thinking and	• The Guidelines for
'teachable moment' to	problem-solve.	Environmental Education in
maximise opportunities for	• Reflect on their actions.	New Zealand Schools
teaching environmental		(Ministry of Education,
education.		1999).
• Teachers arrange visits to		
other schools implementing		
education 'for' the		
environment.		

Italic = features present in this study

Bold = features identified in this study but not explicitly mentioned in other literature

Source: McLean (2002), p. 91

2.5 Conclusions

Primary teachers in Otago, New Zealand, are implementing environmental education, however, education 'for' the environment is not prevalent. Those teachers that are implementing education 'for' the environment are enthusiastic with a positive attitude to environmental education, and have undertaken in-service teacher education on the *Guidelines for Environmental Education in New Zealand Schools* (Ministry of Education, 1999).

The findings of this study also indicate misconceptions among primary teachers regarding environmental education. Very few teachers (less than 7%) had read the *Guidelines for Environmental Education in New Zealand Schools* (Ministry of Education, 1999) and many (almost 20%) were unaware they existed. In particular, education 'for' the environment was misunderstood. Most of the examples of education 'for' the environment given in the questionnaire were actually examples of education 'in' the environment, because students were not involved in the decision making process, and the activities did not work towards the resolution of environmental issues. This misunderstanding points to the need for teacher education in environmental education for all primary school teachers.

A number of other recommendations have arisen from this study for New Zealand national and local government, for further research, for New Zealand primary schools and for other institutions. It is hoped that this study is a beginning step towards assisting New Zealand primary schools in their implementation of education 'for' a sustainable future.

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Biographical Details

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Glossary of New Zealand Māori terms used in this paper: Whanau Wai Waimate

Educational Effect of "Environmental Regeneration" in Kawasaki

The society for the research of the policy on environmental regeneration (a sectional meeting on the regeneration of the pollution-damaged area) Japan Hironao Ozaki

Summary

This presentation discusses Environmental Education and Sustainable Development from the viewpoint of activities for "Environmental Regeneration" in the places where heavy pollution has damaged the living environment, health and life of inhabitants, local communities, and so on. The 20th century is said "a period of environmental destruction (caused by war and economical development) ", and pollution damage is a symbol of unsustainable system in former century. Instead of former policies based on economical development, in this 21st century, public policy to remedy, rehabilitate, restore or regenerate the environment is becoming more and more important. These policies of "Environmental Regeneration" are suggesting new types of local development, or local revitalization / rehabilitation. This trend is now extending throughout the world.

Recently in Japan, many Air Pollution Lawsuits are reached to the settlement through the decisions that award victory to the plaintiffs, pollution victims with health damage. Victims are now seeking their way of "Environmental Regeneration" and actually carrying out various plans for that purpose, since they realize the settlement in court is not simply the end of pollution damage. That will not automatically relieve Air Pollution and pollution illnesses.

Air Pollution Lawsuit was so long (10-20 years) in Japan and painful for pollution victims, but, at the same time, it had "a forum effect" that could publicize a fact of heavy Air Pollution through mass media and public opinion, which could gather people for supporting the lawsuit. Now pollution victims' movements have to try new subjects, they are making an effort at cooperating with government and companies, a lot of NPO, in the process of rehabilitating local community and regenerating their areas into pollution-free, good places to live. In this presentation, I think such meanings through a case of Kawasaki City, a core industrial area of the "Keihin manufacturing district" which is the greatest industrial area in Japan.

The structure of Air Pollution-damaged area of Kawasaki

1. Industrial city Kawasaki

Kawasaki City in Kanagawa Prefecture is a great city with 1.28 million people bordering on the Metropolis of Tokyo. Its extent is long and narrow due to the location between Tokyo, the east and Yokohama City, the west. (See fig.1) It extends east and west (the maximum distance:32.4km), and narrows north and south (the minimum:1.2km) along a stream of the Tama River because it has historical details related to the interests of taking waters of the Tama River. Waters are demanded for a lot of great factories advanced to the reclaimed land in the south of Kawasaki City. So Kawasaki has been a heavy-industrialized city from the beginning of urbanization.

Kawasaki has the core industrial area of the "Keihin manufacturing district" which is the greatest industrial area in Japan. There are an industrial zone in the Southeast coastal area, and mixed area of housing and manufacturing in the central part, and a quiet housing area in the north part of Kawasaki. Even if these areas are in the same city, each area has a subtly different character from others. Especially the north housing area works as "a Bed-Town" for going to work to Tokyo. In contrast, no housing is on the reclaimed land in the Southeast, which is almost all owned by industrial enterprises. Then there is not any seashore where people enjoy sea-bathing.

2. Air Pollution in Kawasaki

Air Pollution in Kawasaki has continued from the beginning of industrialization at about 1910's. Until early 1970's, heavy air pollution had been caused by soot and smoke (including sulfur dioxide:SO₂) derived from chimneys of factories. At later 1970's, it was considerably relieved, with the result that strong pollution opposition movements had Government and Kawasaki municipal authorities taken measures to meet the situation during the 1960s and 1970s. But instead of that, exhaust gas (including nitrogen dioxide:NO₂ and suspended particulate matters:SPM) especially derived from automobiles was becoming the leading role of Air Pollution.

Recent Air of Kawasaki is polluted by colossal number of diesel cars on large main roads running in all directions through Kawasaki city. Exhaust gas from diesel cars is full of the roadside and around, where the density of Air Pollution often exceeds national environmental standard. In particular, *"Ikegamishincho-*Crossing" along the Industrial Road is notorious for one of the worst polluted area in Japan. Air Pollution of exhaust gas is an actual matter not having been solved even now.

3 . A new form of Pollution Lawsuit reconciliation

Kawasaki Pollution Lawsuit was reached to the 1st judgment at Yokohama District Court in January 1994. The case was decided in favor of the plaintiff, concerning that the defendants of 13 industrial enterprises were jointly liable for the Air Pollution. But the liability of the national government for constructing and managing main roads that generated exhaust gas pollution was not accepted. Plaintiffs had continued to independently negotiate with the enterprises despite they

appealed to a higher court against the decision. As a result, Plaintiffs realized the reconciliation with Defendants, 13 enterprises, presupposing that the enterprises apologized Plaintiffs.

If we describe the remarkable point of courses Plaintiffs took, it can be said as following.

- 1) Plaintiffs got a reconciliation treaty using another channels, independent negotiations with Defendants.
- 2) Plaintiffs required monetary cooperation of the enterprises to regenerate local community and environment. ("The Fund for Community Development")

It is a new trial of the settlement of Pollution lawsuit that victims as the plaintiff make efforts for themselves to regenerate local community and environment.

And the August 1998 decision in the 2nd-4th Kawasaki Pollution Lawsuit (in the district court) ended in victory for Plaintiffs. This decision is such a monumental achievement that recognizes NO₂ (derived from automobiles) damages human health by itself, and mentions harmful influence of SPM (from diesel cars) definitely, which forces the national government to take radical measures against exhaust gas from diesel cars. Plaintiffs had many times negotiations, and finally, reached a compromise agreement with the national government (the Ministry of Construction) and Metropolitan Expressway Public Corporation in May 1999.

It is a notable reconciliation in which a new compromise agreement is reached between the plaintiff and the defendant.

- Plaintiffs who are patients having suffered from pollution-induced illnesses make a treaty with Defendants in which Defendants (the national government and Metropolitan Expressway Public Corporation) promise to take measures against pollution on the street, instead of surrendering claims by Plaintiffs as compensation for their damages.
- 2) It is confirmed that "a regular conference for improving street environments" (we call it "Road Conference" as the abbreviation below) is created between the parties.

The latter can be described as "a new way of Inhabitants Involvement" in respect that pollution-damaged patients can participate in the process of policies from planning stages. That is a trial, now being tried, which is important for whether the collaboration between the administration and the inhabitants for actualizing the Environmental Regeneration can succeed or not.

Environmental Education in the Sayama Hills-the Totoro Forest

The Totoro Fund Environmental Education Committee, Saitama, Japan Masahiro Kadouchi

I. The Outline of the Sayama Hills and the Conservation History

I-1 The Sayama Hills—The Totoro Forest

The Sayama hills, known as the Totoro Forest, lie on the boundary of Metropolis of Tokyo and Saitama prefecture, about 40 kilometers (25 miles) west from the center of the Japan's capital city of Tokyo. The hills cover about 3,500 ha of woodlands, wetlands and farmlands and stretch 11 kilometers long and 4 kilometers wide across 6 municipals. The hills look like a green oval-shaped island embracing three reservoirs floating on the sea of houses when we see it from the sky.

The hills are thought to be a model of an animated film, "My Neighbor Totoro" produced in 1988 by Hayao Miyazaki. In this film, the animator depicted a heart-warming story of two sisters surrounded by beautiful *satoyama* landscape which we can still enjoy in the hills.



Fig 1. Locations of the Sayama Hills and the Places Mentioned in the Text

Satoyama is a Japanese traditional landscape consisting of *zoukibayashi* (wooded areas), fields of rice and other crops and farmhouses. People of *satoyama* were utilizing nature for their lives while coexisting harmoniously with nature. *Zoukibayashi* is a secondary forest used in various ways in our daily lives in the past. Its fallen leaves and undergrowth were composted for farming and wood was used as fuel, tools and building materials.



A feature of *satoyama* of the Sayama hills is small rice fields in dells watered by springs from the hills.



Miyazaki's latest work "Spirited Away" won the Golden Bear award at the Berlin Film Festival in February 2002, and the Oscar for Best Animated Feature Film at the 75th Annual Academy Awards in March 2003.



The hills provide habitats for rich wildlife. For example, approximately 1,000 species of higher plants, more than 200 species of birds, some 1,290 insects and 11 species of mammals have been recorded in the hills so far. Located on the Tokyo suburb under severe pressures of development, the hills literally form a treasure house of wildlife.

People in this region managed and utilized the forest for their daily lives and farming in the past. Such harmonious life of human beings and nature created the environment in which various creatures were able to thrive.

However, recent decline of farming has caused *zoukibayashi*, traditional style of woodlands, to be neglected. We are now facing problems of how to manage and utilize the woodlands for our modern life, in order to conserve the traditional landscape of *satoyama* and rich natural environment.

In addition to the rich environment, approximately 240 archaeological sites have been discovered in the hills and the surrounding areas so far. These are remains of ancient people's lives dating from the upper Paleolithic age to modern period. Furthermore, many historic buildings still exist as well as remains. Therefore, this region is also called the treasure house of cultural properties.

I-3 Conservation of the Sayama Hills, National Trust Movement

The Totoro Fund was established in 1990 aiming to protect the treasure house of wildlife and cultural properties. We chose a method of national trust to raise fund nationwide. As a result, more

than 10,000 people, some from abroad, have donated for us to buy up woodlands. In 1991, we acquired a piece of woodland and named it "Totoro Forest 1." We own four pieces of woodland as of April 2003.

Even before the establishment of the Totoro Fund, numerous grass roots groups had tackled problems to protect the Sayama hills. We have been proposing conservation plans and consulting with local authorities for decades. Now some places in the Sayama hills are ensured to be preserved in the form of parks, an Open Air Museum and our trust properties. The longterm campaigns have greatly contributed to the expansion of such protected areas.

II. Report on Environmental Education in the Sayama Hills

II-1 Addressing Environmental Education

These protected woodlands are the achievement of the citizens' movement. We reached the conclusion that the most desirable way to return our achievement to society is to provide our properties as sites for environmental education of next generation driving our future.

The symbol of our national trust movement is an animated character, Totoro. With the animator's kind consent, we could use Totoro to raise donations from all over the country. Many children gave us various kinds of encouragements. Some children saved up and donated their pocket money to protect the Totoro Forest. A class collected empty aluminum cans at school and sent the profits to us. Others sent us cute encouraging letters. In return for their support, we decided to offer opportunities to learn nature and wildlife of the Sayama hills, *satoyama* and local culture in a friendly atmosphere.

The fundamental ideas of the environmental education which we are going to bring into action in the Sayama hills are as follows:

- To understand the essence of *satoyama* in which natural system and human activities coexist in harmony.
- To understand the richness of *satoyama* nature through communing with living creatures.
- To acknowledge the greatness of the wisdom of the ancients through experiencing techniques in the traditional lifestyle.
- To promote greater affection for and pride in places where they live through understanding local history and features.

Based on these ideas, we planed to publish a handbook of the Sayama hills consisting of details of sites and facilities to utilize the hills, and information on nature and cultural properties. It was also designed as materials which teachers could use in class without any additional preparation.
Establishing Environmental Education Committee

In order to promote environmental education aggressively to enhance understanding of conservation of *satoyama*, our foundation has launched Environmental Education Committee consisting of teachers, museum curators, volunteers, researchers, college students and our staff members. The committee decided to publish and distribute a handbook of the Sayama hills

Contents of the Handbook

It was proposed that the book include detailed information about sites, facilities and nature, such as, what activities they can do in the Sayama hills, where suitable places are for the activities and how ecosystems work, as well as explanation of how we manage our properties and how *satoyama* and human beings have lived in harmony. It was decided that the book style should be worksheets. This style aimed to help teachers make their original environmental education programs by selecting and combining the sheets suitable for the purpose of the curriculum.

Table 1. Main Contents of "Living Teaching Materials—The Sayama Hills. A Handbook for Teachers"

I. Fa	cilities
I-1	Parks and Other Protected Areas in the Sayama Hills
	and the Surrounding Area
I-2	Museums in the Sayama Hills and the Surrounding
	Area
II. <i>S</i>	atoyama and Human Beings
II-1	People's Lives and Satoyama
II-2	History of Human Beings and Archeological Sites in the
	Sayama Hills and the Surrounding Area
II-3	Conservation Movement in the Sayama Hills and the
	Surrounding Area
III. N	Jature
III-0	Ecosystems
III-1	Plants
III-2	Mammals
III-3	Insects and Aquatic Animals
III-4	Birds
III-5	Geography

contains 60 worksheets

We noted from general to particular explanations in various areas, relevant areas, enquiries and other detailed information on a sheet, so that teachers can use the handbook without any additional preparation. On the other side of the sheet, we provided examples of questions for preliminary and further studies, and programs and questions for "learning-by-doing" on

the sites. Furthermore, we decided to revise and supplement the book in response to suggestions from the users occasionally. The title of the handbook, "*Living Teaching Materials—The Sayama Hills. A handbook for Teachers*" reflects our hope that the foundation will put environmental education into practice in the Sayama hills.

Publicity Campaign

In order to let more people know the handbook and our fundamental ideas about environmental education, we held "Environmental Education Seminar for Integrated Study" in August 2001 in the Sayama hills. In the seminar, Dr. Eiichiro Harako, Associate Professor of Tokyo Gakugei University delivered his speech and Ms. Naomi Mitsukawa, a teacher of Takamatsu Elementary School in Nerima ward Tokyo, reported a case at her school. We also organized workshops using the handbook in the Sayama hills. After the seminar, we completed the kit of the handbook composed of three parts, "Facilities," "*Satoyama* and Human Beings," "Nature," in a specially made file (Table 1). We gifted them to public elementary and junior high schools, member organizations, museums, boards of education in the surrounding area and other persons and organizations who were interested in our activities. At the same time, we started marketing them and called on public to utilize the handbook through the press.

Our Goal

The publication of the handbook is not the ultimate objective of the Committee. The handbook is mere a starting point for our ideal environmental education. Our handbook should develop through revising process in response to the feedback and continue to be living teaching materials as the Sayama hills are.

II-3 Working Together with Local Schools

Background

To promote effective usage of the handbook in the integrated learning¹ officially introduced nationwide in April 2002 to elementary and junior high school curricula, it was necessary for committee members to use, test and spread the handbook by themselves. It was also necessary to suggest education programs using worksheets.

Recently, children have few opportunities to commune with and play around in neighboring nature. It means that children are losing contact with nature in their daily lives. Aiming to encourage children to go to nearby *zoukibayashi* and learn natural system and the wisdom of the ancients in beautiful nature, the committee planed to implement various learning-by-doing programs and to use the feedback to improve the handbook. Therefore, we decided to implement pilot programs at Arahata Elementary School in Tokorozawa city Saitama prefecture, with which we had been working together on environmental education.

¹ The integrated learning is a cross-curricular study in which teachers are allowed to practice their own creative activities. It is virtually only subject in which teachers are able to implement environmental education as of April 2003.

Pilot Programs

First, we started activities in which 5th graders looked for leaves, acorns, seeds, etc. on the forest ground and brought acorns to school, then planted them in flowerpots in February 2001. These activities aimed to make children feel the relations between children themselves and nature.

In next July, we engaged in a program with the same children, though they had been promoted 6th graders, playing Totoro investigators and looking for insects in Totoro Forest 2. Later, they depicted what they had seen, therefore they had to observe and memorize the insects carefully. They seemed to be surprised by the differences between the insects they could find in February and July. We could see how children watched insects with interests. One of them wrote later that he was looking forward to finding other insects next time. They wouldn't have realized those small creatures if they hadn't participated in this activity. Regarding the acorns they had planted, as of July, only two third of them survived. We transplanted them into bigger flowerpots.

Month Year	Grade	Site	Objectives	Activities	<i>Zoukibayashi</i> Management Work Done in the Program
Feb. 2001	5th	Totoro Forest 2 and surrounding area	•To realize the existence of relations between nature and children themselves	 Looking for fallen leaves, seeds, acorns, etc. Bringing acorns of konara oaks to school to grow them in pots. 	•Planting acorns
July 2001	6th	Totoro Forest 2 and surrounding area	•To study what kinds of insects live and where they live in <i>zoukibayashi</i>	 Looking for insects to observe at the site Drawing picture of insects based on memories in the classroom 	•Transplanting seedlings of konara oaks into bigger pots.
Oct. 2001		Totoro Forest 2		•Cutting konara oaks, sawthorn oaks and other trees	•Pollarding (by foundation's volunteers)
Nov. 2001	6th	Totoro Forest 2 and surrounding area	•To realize the difference between easy-to-climb and hard-to-climb trees •To become familiar with Totoro Forest	 Cooperating with each other to climb trees. Making handicrafts with what they found on the forest ground. 	·Planting out konara oaks seedlings to Totoro Forest 2
Nov. 2001	5th	Classroom	•To understand the meaning of <i>zoukibayashi</i> management	•Studying with slides in the classroom	
Dec. 2001	6th	Totoro Forest 2 and surrounding area	 To learn the wisdom of the ancients utilizing <i>zouki</i>- <i>bayashi</i> To realize the existence of food safety problems 	•Raking up, carrying and playing with fallen leaves	•Raking up and composting fallen leaves
Feb. 2002	6th	Nature Center and surrounding area	•To experience relations between our lives and <i>zoukibayashi</i>	 Burning charcoal Planting seeds of <i>shiitake</i> mushrooms into pieces of wood Watching winter buds 	 Burning charcoal Planting seeds of shiitake mushrooms into pieces of wood
Feb. 2002	5th	Totoro Forest 2 and surrounding area	•To realize the relations between nature and children themselves	 Playing bingos with what they found on the forest ground Listening a lecture about environment using what they found in the forest 	·Planting acorns
May 2002	4th	Totoro Forest 2 and surrounding area	∙To study plants of <i>zouki-</i> <i>bayashi</i>	•Studying plants using five senses fully •Observing konara oak stumps with new branches and seedlings that upper class pupils planted	·None
July 2002	6th	Totoro Forest 2	•To understand the meaning of <i>zoukibayashi</i> management	•Cutting undergrowth	• Cutting undergrowth

Table 2. The Environmental Education Pilot Programs at Arahata Elementary School

In November, we offered a program named "Let's climb trees!" for 6th graders to become familiar with the Totoro Forest. In this program, we divided them into groups and made them work together so that all the group members could climb trees. It seemed that they realized that it depended on trees whether they could climb easily or not, so they told easier trees each other. After this activity, we transplanted the seedlings in Totoro Forest 2, but at this time, survived numbers dropped to about one third of what we had planted. Prior to the program, volunteers of the foundation pollarded the trees of the site to make the space for transplantation in October. The forest was high time to be pollarded because it had not been pollarded for 30 years. The children had studied pollarding in previous class using the handbook, so they understood well the meaning of cutting and transplantation. In addition, we ran the activity named "Express the Totoro World Using What You Can Find on the Forest Ground," in which children made handicrafts in groups.

In December, the 6th graders raked up and played with fallen leaves in Totoro Forest 2, and carried them to nearby storage yards in an agricultural field. Those leaves were composted for vegetables in the field. Amid the recent food safety issues, we hope that this kind of activity can provide an opportunity for children to think about their food and learn the wisdom of the ancients utilizing *zoukibayashi* to farming. What is



One of the handicrafts children have made of leaves, twigs, acorns, etc.



Children raked up fallen leaves to compost. This picture shows the typical *zoukibayashi*, mainly consists of deciduous trees such as konara oaks or sawthorn oaks.



Children learn various sorts of things about nature and local culture through playing around in nature and experiencing *zoukibayashi* management work.

better, after the activity, some pupils participated voluntarily in our public event and swept fallen leaves in January 2002.

In February 2002, 6th graders carried wood, which was made in the process of pollarding, to a nearby charcoal kiln, and burned charcoal with members of a charcoal burning club and planted seeds of *shiitake* mushrooms into the wood. We also watched winter buds in the forest. The children were expected to grow these *shiitake* mushrooms at their homes and feel connection between their lives and *zoukibayashi* even after the graduation.

In the same period, 5th graders picked up seeds, leaves, etc. and played bingos. During the play, we explained the system of *zoukibayashi* and environment which is indispensable for human beings and other living things. We also made a rule to bring at least one germinated acorn while the play, and bring them back to school to grow them in flowerpots.

Children's reaction

Children's description of their impression shows achievements of our programs:

"I realized the wonder and greatness of nature through a yearlong program. I had thought that there was no need to manage forests and *zoukibayashi*, but I realized that there are people who help them to exist."

"I have been doing activities of Totoro Time for a year. And I felt happiness of playing



The children collected germinated acorns (center) and other things. They were instructed to collect something smooth, something rough and so on.



A stump showing traditional pollarding techniques. We can grow the twigs into new trees, faster way with higher survival rates compared with growing them from acorns. This enables us to use woodlands repeatedly without destroying them.



The children cut weeds to grow konara oak seedlings which cannot survive in the shade.

with nature. It was not what I was taught, but I have learned. I have learned important things not written in textbooks. I really appreciate teachers and staff to lead me and give me such opportunities. I want to make use of my experience and do something to conserve nature even in junior high school."

(The originals were Japanese)

These impressions made us confident that we could change play into learning by giving a few hints and opportunities.

We still engage in programs in the Arahata Elementary School. For example, we provided 4th graders with a program centering on plants in May 2002. We observed pollarded konara oaks (*Quercus serrata*) with growing twigs and oak seedlings transplanted by upper class pupils. 6th graders cleared scrub in the Totoro Forest 2 to eliminate other plants disturbing the growth of seedlings in July 2002. Despite the hot weather, they understood the meaning of scrub clearance and concentrated on the work although for most of them it was a first time to use sickle.

Programs for Teachers

We also started an environmental education course not only for pupils but for teachers. In this course, Arahata Elementary School teachers participated in and considered our program targeting pupils, on the premise that they would conduct the program by themselves. We also exchanged the views. This course aimed to motivate teachers to make the most of the resources (nature, culture, etc) hidden in the region and carry out programs closely connected local areas. Our committee is going to provide opportunities for children to enjoy learning what they have in the region by combining the worksheets of the handbook.

Networking

We are expecting to strengthen ties with inside and outside schools and extend them to a network of schools in the surrounding area beyond administrative boundaries through implementing our programs. It must benefit children to broaden their views. It is crucial for us to build a relationship of mutual trust with schools to achieve this aim. We are also trying to produce the original environmental education programs involving not only children and teachers but also parents.

In this point of view, we highly evaluate the fact that the children's handicrafts were introduced to Daiichi Elementary School in Higashiyamato-city Tokyo, another school which conducted Environmental Education in the Sayama hills. These handicrafts were made in our program "Express the Totoro World Using What You Can Find on the Forest Ground," conducted in Arahata Elementary in November 2001. They were also exhibited in the Higashiyamato City Museum. It was an invaluable first step toward the movement that children living in the region work together to learn the Sayama hills as a local environment beyond administrative boundaries. Inspired by these facts, Daiich Elementary and Arahata Elementary held a combined class centering on bird watching in March 2003 with the help of volunteers belonging to an environment education course run by the Higashiyamato City Museum. The environmental education based on hidden resources (nature, culture, etc.) of the region with participation of local people is going to spread slowly and surely beyond administrative limits.

III. Conclusions: Environmental Education in the Sayama Hills

Our fundamental ideas on the environmental education mentioned in this paper, will play a part in the achievement of one of our objectives: developing local culture centering around the Sayama hills.

Utilizing nature of the Sayama hills for people's daily lives have generated the *satoyama* landscape in which human beings and nature could coexist harmoniously. Thus, the existence of *satoyama* of the hills is attributed to the sustainable development.

However, the *zoukibayashi* is being neglected because we do not use neighboring nature in our modern lifestyle. Driven by changing times and lifestyles, we may have left behind something important while our mind was being occupied with pursuing convenience in our daily lives. It is undeniable that this has extensively caused not only environmental problems including that of *zoukibayashi* of the Sayama hills, but also various sorts of social problems we are now facing. The animator Hayao Miyazaki conveyed an impressive message—"I brought what you have left behind," in the opening of his film "My Neighbor Totoro" apparently based on the Sayama hills. It is high time we should realize what we have left behind and think seriously how it can be utilized in our modern society.

Therefore, the environmental education in the Sayama hills should also be implemented from the viewpoint of sustainable development of local areas. In order to promote environmental education for school children and other people in the region, we started continuative and diversified projects such as sending trained staff, organizing education programs for workshops, introducing other organizations and human resources in the region and training volunteer guides to the Sayama hills.

Needless to say, when we focus on children directing our future, the environmental education in school curricula is the most important in our projects. Given that, as we mentioned, it is necessary to provide children with education programs consisting of various sorts of learning-by-doing activities to let them realize what kinds of resources exist in their regions and how people have utilized them so far. At the same time, it is crucial for local communities to work together to create and provide educational environment in which children are able to obtain self-education ability. The self-education ability obtained in such environment would develop physical and mental health of children. The local people's participation in environmental education will promote sustainable development in the region. Our Committee considers that nurturing children's self-education ability should be an aim of the integrated learning in school curriculum.

However, it is difficult for teachers to implement their own environmental education programs single-handedly aiming sustainable development of local areas during the integrated learning courses. Therefore, the Committee is going to build up a system assisting people involved in environmental education in the Sayama hills. To accomplish this task, we should create learning-by-doing programs and develop educating materials of environmental education. We hope that children will ponder relations between *satoyama* and human beings spontaneously and learn the meaning and the spirit of conserving and managing the Sayama hills through our environmental education programs and hand them on to the next generation.



Past: Harmonious Relations



Present: Disappearance of Harmonious Relations

Fig 2. Relations Between Human Beings and Zoukibayashi

Environmental Education for Sustainability in South Korea

Ewha Womans University Republic of Korea Youngmin Lee

1. Educational Orientations for the 21st Century Korea

We, the people of global citizen, are living in the society of rapid change, which makes us sometimes feeling greatly confused. This society is changing in quite different fashion so far, which needs its members to adjust to new social, political, and economic paradigm. Addition to this global scale change, South Korea has experienced very fast economic growth for the last 40 years, and also in recent years, experienced a kind of swirling political democratization. It is in the more complex situation of change towards the new millenium.

The specialists of education in South Korea make diagnosis of the 21st century society as several aspects of globalization, localization, stressing knowledge and information, keeping sound environment, and unification of the divided countries.



Fig1. Aspects of the 21st Century Society (Orientations of Korean Education)

All countries and regions in this earth are closely interconnected along with the all-covering diffusion of capitalistic system of economy, that is globalization. The consciousness of world citizenship becomes regarded as very important. The intensifying interconnectedness of all regions under global capitalism requires each region to look for its own color of characteristics so as to survive itself in the keen competition of globalization. South Korea and its sub-regions are trying to

make proper strategies of localization.

New society of the 21st century observes the significance of knowledge and information. New kind of creative knowledge and information will play the important role of developing new technologies, which lead to sustainable growth of economy in harmony with environment. Environment is the critical basis of the existence of mankind, and the basis of sustainable development of economy. Without sound environment, we the people could not survive long time. Particularly South Korea, the rapidly developing country based on the secondary manufacturing industry, has taken advantage of its good quality of environment. Thus the environment so deteriorated that the people more feel at a crisis of environmental problems. These aspects in which South Korea is placed are being more complicated by one more peculiarity. It is the situation of being divided between South and North Korea.

The government of South Korea recognizes those new aspects of the 21st century as the core of school curriculum, and develops the relating contents and applies them to the educational activities of each school. Among those orientations, the education for keeping sound environment might be said the most important. The reason is that it is impossible to achieve the other orientations without keeping sound environment. Accordingly we should reflect what we have done in relation with our environment, correctly estimates environmental change by human activities, and urgently find appropriate programs for recovering environment.



Fig 2. Environmental Change by Human Activities

2. Economic Development? or Environmental Conservation?

Harmonious relationship between environment and humans has been one of the most important issues regardless of the Eastern or Western society. Unfortunately however the balance of environment has begun to be broken as humans' need for raw materials from physical environment increased for better life. The sought for convenience of material life led to the excessive development or exploitation of environment, which gave rise to pollution and destruction of environment. Especially humans have seen the earth environment more and more deteriorating since the 18th century of Industrial Revolution, the basis of which is the manufacturing industry to make secondary products of resources from physical environment.

The use and exploitation of physical environment apparently contributes to the more convenient human life and the growth of regional economy. It is undeniable that human ways of life in the present industrial capitalistic society is more progressive and more convenient in the aspect of material civilization than the ones in the past primitive and agricultural subsistence society. Also we should remember that the progress and convenience have been successful at the cost of environmental deterioration such as the global and local scale change of climate and the disturbance of ecosystem. Here we are confronted with the dilemma of the continuous growth of economy for better life and the conservation of environment for basic survival.

This dilemmatic issue of the concern over the stability of ecosystems and sustainability of the existing lifestyles is never and should be never limited at the forefront of public concern. In recent years, there has been growing world-wide concern over educating for sustainability or ESSD(environmental Sound and Sustained Development) in each school. South Korea has been also tried to develop and intensify the school curriculum concerning the issue of sustainability for the last two decades.



Fig 3. Effects of Environmental Development



Fig 4. Conflict of Environment and Economy

Education for sustainability addresses quality of life issues through combining environmental conservation education and economic development education. Environmental conservation education is largely concerned with the balanced and sound quality of the physical environment,

while economic development education has traditionally focused on the quality of material life of humans through economic development. In fact, the more developed our economy and material life become, the worse the environmental problems become, such as climatic change, deforestation, land degradation and desertivication, depletion of natural resources, loss of biodiversity, overpupulation, food security, drought, poverty, urban decay, and so on. These problems are the concerns not only for environmental education but also for economic education or development education.

3. Aims and Subjects of ESSD Education in South Korea

ESSD(Environmentally Sound and Sustainable Development) includes conflicting meanings of Sound environment and economic development without recession. The two meanings doesn't look like being in harmony with each other, but those aims to accomplish the same goal, "good quality of human life." ESSD could be attained on the assumption that the both meanings should be compromised.

The existing sound environment and earth resources should be efficiently kept and managed for the both present and next generation. The environment to be already damaged should be recovered with the best effort, because next generation should live in environment as clean and sound as our generation. Accordingly ESSD can be summarized as followings; to fulfull the present needs within the limits of not preventing the next generation to fulfill their need. That is, the need which can not but lead to utilizing physical environment or resources, should be nearly same in now and future.

	Area	Contents
Humans and	Environment surrounding humans	What is environment?Elements consisting of environment
Environment	Change of Environment	 Environmental change by human activities Conservation and development
	Importance of Resources	Human life and resourcesGrowing need and shortage of resources
Environmental Problems and Countermeasure	Environment to be protected	 Clean and pleasant air Clean and sufficient water Recycling garbage
	Global Environmental Problems	 Earth to be heated Diminishing forest and expanding desert Disappearing biological species
Environmental	Strategies for Environmental Conservation	 At home At school At neighborhood
Conservation	Making Pleasant Environment	Pleasant environment and quality of lifeRebirth of environment

Fig 4. Major Contents of "Environment" (Middle School Textbook)

Area	Contents
Humans and Environment	 Physical environment and humans Causes of environmental problems
Ecosystem and Environment	 Basic principles of ecosystem Balance of ecosystem
Environmental Pollution	 Air pollution Water pollution Pollution and depletion of soil Pollution of waste articles
Global Environmental Problems and Countermeasures	 Warming of earth Acid rain Depletion of O3 layer Radioactive contamination
Environment and Society	 Environmental philosophy and ethics Environmental policy Environment and economy
Environmental Conservation	 Energy resources Keeping Bio-diversity on Movement for environmental conservation Overcoming the crisis of environment

Fig 5. Major Contents of "Ecosystem and Environment" (High School Textbooks)

Learning Stage	Subject Matters
Pre- school	• Home environment
Kindergarden~Lower grades of elementary school	 School environment Near environment of neighborhood
Upper grades of elementary school	• Wide- all environment of neighborhood
Middle school	• Nation- wide environment and its problems
High school	 Nation – and world – wide environment Interdependence of the environments

Fig 6. Subject Matters of Environmental Education by School Ages

Several aims can be introduced in order to achieve ESSD. First is the preservation of physical environment both in the local scale and in the earth scale. Korean government invests more and more

money to protect the existing sound environment to be polluted, and to regain the sound quality of the damaged environment. Also it try to set up new curriculum of environmental education. Education must be the most useful way to change the people's consciousness and behavior.

Secondly, population should be checked to proper level. High level of population in a limited space puts more stress on its environment because of growing demand of various resources. It is needed especially in the case of South Korea, which has too large number of population(more than 47 million) even in the small area of national territory(about 100 thousand km²). This population is the highest level in the Asia-Pacific region except the city-country, Singapore or Hong Kong.

Thirdly, energy resources and raw materials should be intensively carefully consumed. This is related with the advanced technology that can decrease the input of energy and raw materials per unit. Of course, it is very important to develop new resources which can be recycled. The advancement of science and technology concerning environment must be of consequence as greatly as economizing the demand and supply of energy and raw material from physical environment.

The last is the most important aims for ESSD. We should induce people to be aware of the limit of economic growth in this earth by environmental education, more narrowly by ESSD education. Although capitalistic world economy tries to take continuous economic growth of wealth, the carrying capacity of environment is limited. The reason is very simple. Our production and consumption is carried out in the small earth which possesses limited quantity of material. This kind of education should not confined to the regular school education system. More broadly, social organizations and institutes concerning environment should develop the continuing program to realize peoples after graduation of regular school.

4. Process and Conditions of ESSD education in South Korea

The process of ESSD education is summarized as recognition of the significance of environmental problems, aquisition of adequate actions and skills, and application of the skills to the real world. That is, the final point of ESSD education arrives at the stage of responsible actions by each student. The change of thought and actions through educational activities is of course related with the pupils' personal characteristics as well as economic and social conditions.

As mentioned above, ESSD education seeks to provide students with personal responsibility towards the environment and attempts to equip pupils with skills and knowledge to give effect to this responsibility. In other words, this arouses students' awareness and curiosity about the environment and encourages active participation in resolving environmental problems. This should be a kind of action-oriented education with participatory goals. And this can be attained by involving students in real environmental issues which display not only on local but also on global setting.



Fig 7. Conditions of ESSD Education

It is important to let students recognize the influence of social and economic structure of our capitalistic society to environmental problems. Poverty is often at the root of environmental exploitation and degradation. One of the important problems facing us in the present is surely to decrease the people in poverty. Accordingly, it does inevitably collides with environmental conservation. They call for the reconciliation between environmental conservation and economic development. It is needed to promote a form of ESSD education which integrates the complementary disciplines of environmental and development education. It requires that students explore the socio-economic as well as the political dimensions of environmental problems.

Finally, I would like to conclude this essay by taking remarks from an article by Calder and Smith¹."For the survival of the World and its people teachers must do far more than just teach about global issues. We must find ways to change hearts and minds. This can be a response to reasoned argument and evidence or to experience where empathy will lead to commitment to action. Teachers hol the responsibility for educating their participants to work for future change that will help create a better world for all. Together we must work towards a more ecologically sustainable and socially just society locally, nationally and globally."

¹ Calder, M. and Smith, R., 1993, Introduction to development education, in Fien, J., *Teaching for a Sustainable World*, Brisbane: Australian Association for Environmental Education.

Educational Response to the Global Challenge of Sustainable Development: Stories of Sustainable Communities from Nepal

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Abstract

This paper examines the educational response to meeting the global challenges of sustainable development through local actions. The stories of sustainable communities in Nepal have been highlighted. The Annapuruna Conservation Area Project (ACAP) and Sustainable Community Development Programme (SCDP) in different parts of Nepal provide the success stories and the challenges in building sustainable societies. Environmental Education or education for sustainable development has become a driving force in ACAP and SCDP for sustainable communities. Educational programmes that have been designed with local communities incorporating their indigenous knowledge and skills have always been effective in developing sustainable communities. They have addressed the basic needs of people and the root causes of environmental degradation in an integrated and holistic manner. In the context of ACAP and SCDP, the needs of people and environmental issues are addressed through Integrated Conservation and Development Programmes (ICDP) and integration of three pillars of sustainable development. This paper concludes with how these programmes have contributed in building sustainable communities in Nepal through partnership and synergetic approach.

What is Sustainable Community Development?

The perspective on sustainable community development could be different from one country to another based on their social and cultural values. Generally, sustainable communities can be defined as those communities that have managed their well being by maintaining harmony with the natural environment. In the Global Challenge of Sustainability, John Fien and Daniella Tibury (2002) stressed that:

"Sustainable community development is a process of local empowerment that enhances the ability of people to control their own lives and the conditions under which they live. This involves learning and action to ensure that as many people as possible participate in making decisions about the issues and problems that need addressing and work collaboratively to implement them. Sustainable community development means taking action to ensure that poverty is addressed by actions that both redistribute wealth appropriately and generate productive and stable employment" (Fien and Tibury, 2002: 6).

As stated above the heart of sustainable community development is people and their ability to manage their own development and environmental affairs. It is a people-centred development. Gurung(1999) reviewed the roles of environmental education adopted by various environment and development agencies in Nepal to promote sustainable community led initiatives are discussed in support of creating sustainable communities. ACAP and SCDP adopt some of the best practices that use environmental education as a tool in heightening the people's awareness on nature regarded as a crosscutting toll in response to the local, national and global challenges of sustainable development.

The Brudtland Commission defined sustainable development as 'development that meets the needs (WCED, 1987). In the context of Nepal, sustainable development is defined broadly. "The over-arching goal of sustainable development in Nepal is to expedite a process that provides to its citizens and successive generations at least the basic means of livelihood with the broadest of opportunities in the field of social, economic, political, cultural, and ecological aspects of their lives (HMG/NPC: 2003: 1)". A wide range of choices can only be achieved on integrating social, economic and environmental considerations by enhancing their management capacities.

In the next section, this paper highlights the stories of successful community initiatives that have demonstrated significant impacts on poverty reduction. The initiatives are (1) The Annapuruna Conservation Area Project (ACAP) managed by Nepal's largest non-governmental organization- the King Mahendra Trust for Nature Conservation (KMTNC) and (2) The Sustainable Community Development Programme (SCDP) implemented by National Planning Commission of His Majesty's Government of Nepal with assistance United Nations Development Programme/ Capacity 21 in partnership with local governments and non-governmental organizations.

Annapurna Conservation Area Project1¹

The Annapurna Conservation Area Project (ACAP), under the aegis of the King Mahendra Trust for Nature Conservation (KMTNC), covers the largest protected area in Nepal. The 7629 square kilometer Annapurna Conservation Area (ACA) is arguably the most geographically and culturally diverse conservation area in the world. Over 1,200,000 people of diverse ethnic backgrounds inhabit in its steep terraces and barren plateaus, where agriculture and trade have flourished for hundreds of years. Most of the people are subsistence farmers and poor. The area is also rich in habitats for a wide variety of flora and fauna that reflect Nepal's biological diversity.

ACAP was launched in 1986 as an innovative concept in protected area management. This conservation innovation embraces the principles of multiple use resource management, combining environmental protection with sustainable community development. Traditional sustainable activities

¹ The section is heavily drawn from the case study published in the Education and Sustainability Responding to the Global Challenge, IUCN, 2002.

are woven into a framework of sound resource management, supplemented by small-scale conservation, development and alternative energy programs to minimize the negative impacts of tourism on the local ecosystem and enhance the local people's quality of life.

ACAP's Activities

ACAP promotes integrated conservation and development programs (ICDP) that gradually enhance the quality of the life of the local people without depleting the natural resource base. In developing countries, people's survival comes first and conservation comes second, although conservation and development are two sides of the same coin (Gurung, 1992). For this reason in oeder to realize its aims/goals; the ACAP includes the following major activities:

Resource Conservation

The Natural and cultural resources of the ACA must be protected for the benefit of the present and future generations. To this end, forest nurseries have been set up, local forest management practices promoted. The promotion of nature conservation has been supplemented through with appropriate technology such as solar water heaters, back-boilers, low-wattage cookers and micro-hydro electricity. To save the forest, kerosene and gases have also been used in areas where the demands for energy have been high.

Community-based ICDP has been promoted though the formation of grassroots institutions such as Conservation Area Management Communities. Indigenous resource management practices also include programs to increase the skills and knowledge of the people to allow equitable participation at all levels of decision-making.

The Annapurna region is unique for its rich biological diversity. The ACA is also rich in cultural diversity. Restoration of sites of historical, cultural, religious and archaeological importance has been carried out. Traditional and local culture has been promoted through awareness programmes and special events. Restoration of Buddhists monasteries in Upper Mustang, for local people is important ways for conservation of cultural heritage.

Community Development

The community-managed development initiatives encourage nature and environmental conservation. Experience from Nepal's protected area management system has repeatedly taught that local people's basic needs must be addressed first to encourage maximum participation in conserving bio-diversity. ACAP has shared its experience of integrated conservation and development programs with international conservation communities. An example from Gurung(1993) in a report on the way the project has developed describes how in the first year ' we went there, we never talk(ed) about forest protection. We never talk(ed) about the animal protection. We talk(ed) about drinking water.' (Gurung 1993 p.23)

In considering the needs of local communities, the ACAP has become an alternative model, putting people first and insisting on conservation for, of and by the people. ACAP supports local people's initiatives for environmentally sustainable, small-scale development activities such as provision of drinking water, trail construction and repair, irrigation projects, health posts, and the provision of easy loans for the development of local enterprises and income generation. Women are encouraged in the mainstream of conservation and development, creating a greater role within the conservation movement. For example, adult environmental education and skill development are provided for illiterate women. Women's groups such as Mother's Groups (*Ama Tolis*) have demonstrated major works that have benefited many people including children and socially and economically deprived women.

Tourism Management

Community-based tourism management is promoted through the formation of local Lodge Management Committees (LMCs). The LMCs are responsible for promoting quality tourism through environmentally friendly services. ACAP also supports the production of educational materials such as brochures, posters, T-shirts, video films to generate awareness among domestic and international trekkers, and to provide hotel and lodge management training for lodge owners. ACAP has strategically established tourist information centers throughout the major tourist routes to monitor impacts from tourism and provide interpretation services to tourists on the local natural and cultural history. The growth of tourism demands better management of the environment through community education and waste management.

ACAP's tourism management program has demonstrated that the adverse impact of tourism on the environment can be greatly reduced. Environmental problems like deforestation and pollution were much more severe in mid 1980s when only about 25,000 trekkers visited. In 2000, the number of trekkers reached $76,407^2$ but the negative effects were greatly controlled. Gurung (1995) pointed out that experience has proved that tourism itself is not the problem, the problem is poor management of tourism.

Conservation Education and Extension

In traditional societies, the informal education system consisted of in various forms and means have been practiced through their existing cultural values and beliefs. For instance, Buddhism and Hinduism embrace many cultural beliefs related to nature conservation and sustainability issues.

²ACA is one of 10 most popular trekking destinations globally and the international trekker numbers have dropped dramatically after the Maoists insurgency in the country. The number of trekkers declined by 65,313(14.51%) in 2001 and by 38,277(50%) in 2002. However, the numbers of trekkers are expected to increase after the recent cease-fire. The figure also excludes the visitors for Upper Mustang.

The informal beliefs such as worshipping sacred forests, mountains, animals, reptiles, lakes and waters, and stones have (show) high respect toward the natural world. In ACAP, these educational means have been greatly incorporated to promote sustainable development.

The paradigm of traditional environmental education has recently been shifted towards helping people in achieving the goal of sustainable development. In the context of ACAP, environmental education has been practiced for conservation and management of natural resources along with sustainable community development programme since the rural livelihoods are so dependent on local natural resources. This is because the management and protection of the environment is strongly linked with the question of people's survival. Education itself is not a panacea for natural resources management or local environmental problems, rather it is a means for bringing peoples in the mainstream of sustainable development efforts.

The education processes become more effective with formation of social capital in the communities leading institutionalization of local Conservation Area Management Committees and women's groups. The issues and understanding in about and for sustainable development by the communities have been translated into sustainable actions. The actions are carried out on individual and collective basis. The local people work collectively when they see the benefits through empowerment of their traditional resource management systems. Furthermore, the education process is strengthened through alternative and complementary strategies linked with the basic needs of people. This has been experiment issues. In ACAP, conservation education and environmental education is used interchangeably and linked with extension strategies.

ACAP's grassroots philosophy involves local people in all aspects of the conservation and development process, empowering them with appropriate skills, knowledge, technical and financial assistance, with the goal of improving their quality of life. The heart of ACAP is the Conservation Education and Extension Program (CEEP). CEEP is a driving force to generate awareness and win the heats and minds of people toward resource conservation, tourism management and sustainable community development. The success of ACAP depends on the strength of CEEP (Thakali, 1995). CEEP is the paradigm through which all of ACAP's activities attain relevance (Gurung, et.al, 1995).

CEEP as a crosscutting programme links other programs of ACAP and involves a wide range of activities, including both formal and non-formal education programmes. These play a kry role in the success of ACAP's major programs, and include conservation and outdoor education, adult education, clean up campaigns, conservation awareness and tree plantations.

Unless and until local people become fully aware of the need for biodiversity conservation, government efforts alone cannot be successful. Support for conservation can be achieved through various educational activities. ACAP, since its inception, has been using conservation education as a vehicle for educating the local people in protected area management.

Adult environmental education is designed for women who have been considered as the primary managers of natural resources management. They have dual responsibility of looking after the family and children as well as collection of firewood, fodder and agricultural work to sustain their livelihoods. The adult education programme has two major objectives; to make the women literate so that they can read and write; and. educate them about environmental concerns, women development, and sustainability towards environmental management and sustainable development. Experiences have shown that have made a tremendous impact on improving their livelihoods by carrying various community development activities such as tree plantations, trail repair and construction, establishment of child day-care centers, carpet weaving, vegetable farming, village clean up and many income generating activities. The collective actions have contributed a lot in local sustainable development initiatives/efforts (see Box 1) in the Annapurna region.

Box1:Harvesting Conservation Fruits!

In the past, the hardship of lives forced many rural communities to migrate to urban areas. However, after the establishment of ACAP, local people's efforts have brought dramatic changes. The Ghandruk's Conservation Area Management Committee late chairperson Mr. Min Bahadur Grung described these changes: '...there was no high school, no health clinic, no electricity; the trails were dangerous and the bridges were poor. Now things are much better. Ten years ago, when the Gurkha soldiers retired from the army, they did not want to come back here; they stayed in Pokhara. But now they are returning and buying land they sold before. They can see that Pokhara is polluted and Ghandruk is prospering. In material terms, we might not be a lot better off, but the facilities- health- care, education, water are far better than were before.

(Smith-Pye, 1994:35).

ACAP's Response to Principles of Sustainable Living

Conservation and development are two sides of the same coin. The notion of sustainable development in the Annapurna region has long been practiced through careful and well through practical strategies along with indigenous knowledge and wisdom. Conservation of biodiversity is a difficult task, but the people of Annapurna region, encouraged and helped by ACAP, are saving that magnificent part of the Himalayas from the destructive activities which, not long ago, threatened to ruin it for ever (Pye-Smith, et. al, 1994).

ACAP's effots in the past sixteen years have brought a lot of changes in the lives of the poor people and have helped achieve sustainability both ecologically and socially. The following activities (see Table 1) are carried out by ACAP in keeping with a number of principles of sustainable living (Gurung and Macleod, 1996).

Principle of Sustainable Living	What ACAP Does
Qualitative Development	The project fouses on community development programs and uses basic needs of the people as its mission. ACAP recognises that environmental and social problems are inseparable. ACAP's philosophy is one of conservation for people. Qualitative baseline data used to evaluate the project.
Adopting a Global Perspective	Its eco-tourism project uses expertise from around the world.
Ensuring Efficiency	ACAP encourage the use of alternative energy such as kerosene, gas, micro-hydro electricity and solar power schemes as well as more efficient stoves for firewood burning, bijuli dekchis and back-boilers.
Ensuring a Resilient Economy	ACAP's philosophy of people participation in change means that the changes will be self-sustaining. Fees from trekkers ensure that the project will not require a constant injection of funds from other sources.
Ensuring an Externally Balanced Economy	ACAP focuses on education programmes for trekkers to encourage the use of local goods and so reduce dependency on impacts.
Community Participation	ACAP's grassroots philosophy of people participation ensures empowerment of the localpeople to manage their own affairs. Success is noticeable with ACAP's introduction of drinking water schemes, which have been more successful than previous government-imposed schemes. Local people are encouraged to bring suggestions for improvement to locally developed committees.
Ensuring Social Equity	ACAP's Women Development Programme ensures that women have gained more involvement in decision-making on environmental issues. Community Development Committees are representative of all castes.
Ensuring Intergenerational Equity	ACAP's forest conservation and regeration programs, with the establishment of tree nurseries, mean sustainable forest resoources. Education and training programs provide skills for conservation for future generations.
Preserving Constant Natural Capital and Sustainable Income	Forest nurseries allow local prople to live off the interest of the forest. Micro-hydro electricity schemes rather than large-scale hydro electricity power provide a sustainable source of alternative energy. The trekkers' fees sustain ACAP's projects.
Supporting an Anticipatory and Precaautionary Policy Approach	The traditional committee structure and prople participation ensures long term and equitable planning. ACAP's methodology of dialogue with the people ensure a 'slow' approach to projects but with more sustainableoutcomes.
Limiting Natural Resources Use	ACAP has many programs to focus on alternative energy and conservation. Educational programs for trekkers reduce the use of fuelwood, e.g., smaller households and the use of warm clothes.
Ensuring Cultural Equity	ACAP's educational programs encourage trellers to respect cultural practices. ACAP also manages a number of projects to restore and promote cultural heritage, e.g., the Upper Mustang Conservation and Development Project and the maintenance and repair of Buddhist temples. The Apache philosophy of conservation for development also encourages the revival of traditional resource management practices.

Sustainable Community Development Programme³

SCDP is a joint undertaking of the National Planning Commission (NPC) and United Nations Development Programme (UNDP) aimed at building local capacities to integrate the principles of Agenda 21 into national development. Nepal's Sustainable Community Development Programme (SCDP) aims to reduce human poverty. It promotes environmental sustainability by helping reverse the resource degradation undermining poor rural communities. It starts with social mobilization, helping communities take control of their development and offering training to help them build their social, economic and environmental capital. The SCDP has built on important trends in Nepal- decentralisation, democratization and economic integration. When SCDP was planned, Nepal already had good national policy, but needed more initiatives defining what sustainable development should look like in rural communities. SCDP design reflects models emerging in Nepal by the mid-1990s. Some focused on social development, some on micro-economic development and some on environmental management. The best ones converged over time, moving towards sustainable community development (Dixit, 2002: 29)".

SCDP was launched at the end of 1996 and initially worked in Kaikali, Surkhet and Dang districts. The project was piloting several different approaches to sustainable development at community level (all combined the economic, environmental and social entry points). Phase of SCDP ended in 1999 and Phase is being implemented from 2000 to 2003. SCDP Phase has three broad goals: 1) continue experimenting the local approaches in new physiographical conditions (hence programme expansion to three new districts, Okhaldhunga, Myadgi and Humla), 2) consolidate the results – reach real sustainability – in the initial three programme districts Kailali, Surkhet and Dang and 3) support NPC in formulating a policy related to sustainable development.

Principles and Approaches of SCDP

SCDP has promoted three pillars of sustainable development- social development, economic development and environmental management through an integrated and holistic approach. It attempts to combine increased stakeholder participation, information sharing and the integration of economic, social and environmental priorities (see Figure 1).

The fundamental principles of the SCDP approach to development are:

Participation of all stakeholders from national to local levels

Integration of environmentally sustainable socio-economic development into development plans and activities and,

³ This section is heavily drawn from the paper presented during the national strategies for sustainable development (nssd) dialogue workshops at national and regional levels, 2001 as SCDP was presented as a best practice for sustainable development.

Information sharing to ease adaptation/replication of the experience of the Programme, both within the country and abroad

Since the beginning of SCDP implementation, a social mobilization process was adapted for building local institutions, mobilizing local capital and resources, and improving skills to reduce poverty and enhance environmental quality. Local institutions such as Community-based Organisations (CBOs) were formed in order to undertake various community-based sustainable development activities in six districts in Nepal: Surkhet, Dang, Kailali, Humla, Myagdi and Okhadhunga.

In the SCDP, CBOs in partnership with the District Development Committees (DDCs) and Village Development Committees (VDCs), identified one of the three dimensions of sustainable development as a starting point for development activities in the districts. For example, Surkhet district began with an environmental management programme as its initial entry pont. Dang and Kailali districts selected economic and social development programmes respectively based on the priorities of each district's initial efforts was organized with the participation of all concerned stakeholders. Based on feedback from this workshop, a second facet of development was initiated in each of the district. The final sector was added after a review of the integration of the first two developmental component, social development and economic development builds synergetic impacts while addressing communities' common problems.

Community-based Sustainable Development

SCDP has developed an integrated and holistic community-based sustainable development programme that has catalysed the rural communities to be organized in self-governing local institutions on settlement basis. The watershed communities have a lead role in identifying the local socio-economic and environmental problems, designing and implementing development activities that have led the Programme towards a success. A number of practical lessons and experiences were gained during the course of implementation. SCDP promotes integrated programme linking environmental conservation with socio-economic development. The following are the major Programme activities to achieve sustainable development.

Socio-Economic Development for Poverty Reduction

The major long term development plan of the Ninth Plan (1997-2002) was to create a society that is well cultured, modern, development-oriented and endowed with skills through alleviating the prevailing wide spread poverty in the country (NPC, 1998). SCDP is one of the best practice initiatives that has been reflected in the Ninth Plan in community development, resource conservation and uplift of the living standard of villagers. It has created a mechanism to support the rural poor communities in their efforts to overcome from vicious cycle of poverty. Sustainable

Development Facility Found (SDFF) has been created to provide loan support to the CBOs generated community funds upon the enterprises development development plans. The CBOs generated community funds of over Rs. 18.4 million to support their income generating activities. This helped promote communities' self-help practice and opened the door to income generation activities SDFF, with the input from the SCDP to help CBOs enterprise development plans, increased the access of rural poor to the micro credit facilities regardless to collateral system of the financial institutions. The SDFF of over 94 million rupees in sixdistricts is mobilized as a loan to support the micro-enterprises such as non-timber forest products, livestock raising, vegetable farming, retail shops and seasonal business, which are relevant to the local situation and upgrade economic status of the rural men and women.

The SDFF has already generated approximately 4 million rupees as the interest. The interest generated is also added in the principal capital that had multiplied the investment. However, the interest is arranged to meet the cost of operation of NGO/Support Organisation so that the SDFF could continue its support in the long run. This arrangement also contributes toward financial sustainability of the Programme.

.CBOs have supported the following activities to ensure social sustainability.

- Health and sanitation awareness, and toilet construction.
- Improved drinking water supply to ensure clean water and reduce the labour of village women.
- Scholarships for girls and children of indigenous Raji communities.
- Non-formal adult literacy classes, often forced on women in the community and usually linked with practical training.
- Community-based Child Development Centres, ensuring proper care and nurturing for pre-school children during periods when parents are busy with agricultural work.
- School infrastructure support to repair old schools and build new ones.
- Mobile health clinics to reach rural populations otherwise beyond the reach of trained medical professionals.
- Training for traditional birth attendants, who provide the only support to most women giving birth in many remote villages of Nepal.

Micro-economic development has been promoted through:

- Construction of irrigation ponds to retain waters from monsoon into long dry season.
- Green enterprise development, such as commercial plantations to produce bamboo, napier grass and valuable crash crops that also serve to protect vulnerable micro-watersheds.
- Micro-credits for enterprises harvesting non-timber forest products, co-operative mills, animal husbandry, fruit vegetable, fish farming and village shops.
- Training in primary veterinary care, apiculture, community forest management and horticulture

to create capacities for villagers and provide services at community level.

Sustainable Use and Management of Natural Resources

SCDP's mission is to support the government's efforts in building local institutions' capacity to manage environment and natural resources integrating socio-economic development through local initiatives in remote and degraded watersheds for sustainable community development. It has promoted integrated and holistic community development in the programme areas addressing local environmental issues that are closely associated with poverty. SCDP is supporting the initiatives of CBOs, NGOs/SO and the local government in environmental and natural resources management through encouraging collaboration among all the stakeholders and introducing alternative energies like improved cooking stoves, solar power and bio-gas to the rural communities. As a result, pressure on the forests is reduced, improves women's and children's health by reducing chances of inhalation of smoke, and increases level of awareness to conserve, protect and use the forest resources in a sustainable manner.

To promote environmental sustainability, the CBOs have developed:

- Multi-purpose nurseries, growing seedlings for a variety of trees and shrubs able to supply future needs for wood, fuel, fodder, fruit and medicines.
- Community plantations in micro-watersheds to improve soil management, as well as increasing community supplies of wood, fuel and fodder.
- Community forest-users groups, creating management plans resulting in stewardship certificates from the concerned line agency, giving them legal rights.
- Promotion of alternative energy and efficient cook stoves, including training in manufacture and repair.
- Wetland management and ecoturism development
- Environmental adult literacy classes, mainly for illiterate women.

Box2: Integrating Multiple Facets of Development:

A Case Study of Matiyar CBO in Surkhet District

The Matiyar CBO in Surkhet district is consists of the Raji people, an indigenous class who has survived for centuries on fishing and boating. Once they had their own culture, dialect and social system, but, overtime, the Raji's lifestyle was interrupted by people who migrated from the nearby hills. The influx of people from the hills and a growing Raji population led to over fishing and over harvesting of local natural resources. After two decades of population growth and over use, the fish population was depleted and the local area was practically changed into a desert. The situation resulted in local people being forced to spend more time fishing and collecting firewood.

The Matiyar CBO in the district has successfully restored a forest near the banks of the Karnali river from a desert-like sandy river belt. There are 29 Raji households in Ghaatgaun, a local village, and 28 of these households have formed the Matiyar CBO. The team "Matiyar" means "owners of the land or soil," indicating that the Raji people are the owners of the land upon which they live. "The Raji's Matiyar CBO counted the trees near the Karnali river, and the

CBO's first task was tagging the trees. This method of tagging trees prevented trees from being cut down and reduced deforestation," says Mr. Tika Ram Kharel, a Community Activit. "Prior to this, it was easy to chop down the trees. These days, the tagged trees are still alive."

Since the Raji people have historically depended on the environment for their survival, they realized, with SCDP's help, that they would need to find Iternative ways of making a living. Mr. Narayan Sapkota, Sustainable Development Coordinator, SDF, Surkhet who leads the technical team as an SCDP implementing NGO ststes that, " the Raji community is looking for alternatives for survival." It is clear that poor communities need alternative income-generating activities if they are to reduce their dependence on the surrounding natural environment and reverse its subsequent depletion. To support the creation of alternative income-generating initiatives, SCDP has established the Sustainable Development Facility Fund (SDFF). This revolving fund serves as a credit facility for local communities and provides these communities with much need access to capital. In addition to loans from the SDFF, the Matiyar CBO has mobilities its own local capital through a community fund. CBO members make monetary contributions to this fund and the collective amount is loaned out to members to fund entrepreneurial activities. The Matiyar CBO has used SDFF loans and community fund to finance the creation of multiple commercial ventures. The Matiyar CBO has established retail shops, commercial poultry and pig farming activities, and cash crop cultivation. These activities have helped to reduce the Raji people's dependency on scarce local resources and have generated community income.

Seeing a need for social development, the Matiyar CBO decided to establish a community fund specifically for education. Considering the fact their educational status was poor, they established an endowment fund of scholarships to support their children's schooling. In addition to the scholarship, the CBO completed a six months long non-formal education class in the community. Before SCDP involvement in the community there were only 4 children enrolled in school. Now 19 Raji children atted school. Other basic needs such as drinking water and irrigation systems have also been improved. The CBO has also trained their members on the status of improved cooking stoves, animal husbandry as village specialists and provided services to their members.

Like all development programmes, SCDP attempts to improve the status of poor disenfranchised individuals. However, SCDP uniquely recognizes the combined impact of economic, social and environmental sectors upon the status of poor individuals. Since poor individuals rely upon the natural environment for their survival, any change in the environment adjusts their ability to mobilize resources for their collective bebefit. Seeing this connection, SCDP chooses to link environmental, economic and social sectors together to improve the stste of poor individuals. In this example, the Matiyar CBO was unable to reduce the depletion of their environment without alternative economic activities. After establishing these economic activities, they were able to improve their social status. Thus by exploiting the connections between multiple development sectors the Matiyar CBO was able to successfully alter its community's future. Moreover, SCDP uses the insight and knowledge of the local community to direct development efforts. Consequently, CBO's are able to utilize their own resources in an effort to direct their future development.

Capacity Building for Sustainable Development

SCDP facilitates various training related to sustainable human development in collaboration with various development agencies to build local capacities. Over 1359 CBOs are closely working with SCDO to strengthen their management capabilities. SCDP has been supporting CBOs to train their members as Sustainable DevelopmentVillage Specialists to support their development

initiatives through social mobilization process. It is also working with Sustainable Development Network (SDN) to facilitate NGOs joining hands in sustainable development efforts through replicating the SCDP approaches, process and methodologies. The SDN has been developing as a Human Resource Development Centre for sustainable development and has catalysed its member NGOs to adapt the SCDP process to sustainable development. The SDN has been providing training opportunities to enhance their capacities for sustainable development.

Sustainable Development Policies and Strategies

SCDP has been supporting the National Planning Commission to assist formulate the Sustainable Development Agenda for Nepal (SDAN). SDAN is a 15 years blueprint for sustainable development of the country. During its six years of programme implementation in Nepal, SCDP has made several efforts for heiping realize the policies appropriate to the sustainable development at local and national level. Preparation of manual on environmental governance for local authorities is another policy attempt to mainstream the environmental component of sustainable development in the local level planning process. It is a remarkable attempt to mobilize vast resources and the skill of local population in defining new models and future policies for sustainable community development (The Himalayan Times, February 8, 2003).

Challenges

ACAP and SCDP are some of the remarkable attempts to promote sustainable development in Nepal. The roles of education for sustainable development or environmental education are vital but it is a slow and time-consuming process. The major challenge was to demonstrate sustainable , viable and alternative approaches to making implementation of sustainable development effective through decentralized management and local initiatives. The following issues still seem to be challenging:,

- To enhance local capacities and demonstrate sustainable development principles in action through an integrated approach, incorporating gender-sensitive social, economic and environment linkages.
- To strengthen partnerships amongst the major stakeholder organizations (central government, local governments, NGOs and community organizations) and to reinvent their roles so that community organizations function as planners and implementers of own sustainable development.
- To demonstrate viable options for sustainable and adaptation of SD approaches.
- To document and disseminate knowledge from successful local-level experiences and to link the use of local knowledge to support district and national level sustainable development policies.
- To institutionalize the management and monitoring process at the district level.

Conclusion

Nepal's multifaceted environmental problems have been addressed through integrated, community-based conservation and development programs in the ACAP and SCDP districts. These programs have helped promote the concept of community-based sustainable development through integrated conservation and development program in Nepal. Rural communities have benefited from the promotion of ecotourism and the distribution of income, in particular entry fees from international trekkers, which has permitted small scale environmentally sound community development activities.

Environmental education and education for sustainable development have become driving forces in mobilising the local communities. Capacity building of the local communities in both ACAP and SCDP through various educational programmes has enhanced their ability to manage their resources. It helped them to understand the process of achieving sustainability through sound management of their ecology and environment. Development becomes sustainable when people feel ownership and fulfil their needs without destroying the resource base. ACAP and SCDP are outstanding examples of how local initiatives can lead to a society that can sustain itself through environmentally sustainable local development efforts. It is important that these initiatives have long-term support, but to obtain this commitment is a slow process. Local communities must put their trust in the program before making such a commitment. However, the success so far demonstrates that biodiversity conservation and ecotourism management combined with community-based environmental education can generate sustainable actions from communities to help themselves and safeguard their environment. The ability of managing the environment for sustainable development by the people of the Annapurna region and SCDP districts are perhaps one of the greatest impacts.

Similarly, the support of UNDP and Capacity 21 in Nepal has reached into rural communities where nexus between poverty and the environment is very strong. SCDP was able to mobilize the rural communities for self-help community development and environmental conservation. ACAP and SCDP will continue in partnership with the concerned stakeholders in the implementation of conservation and development activities. They will continue promoting synergetic efforts for sustainable development by strengthening collaboration with ministries, line agencies, bilateral and multilateral agencies, NGOs, INGOs and private sector. It is high time to replicate these development models in other parts of Nepal, which has already been moving toward the direction through partnership and synergetic approaches.

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From Environmental Education to a New "Development" Paradigm

Uttarakhand Environmental Education Centre India Lalit Pande

I would like to express my appreciation and thanks to the Ministry of Education, Culture, Sports, Science and Technology, the Japanese National Commission for UNESCO and Tokyo Gakugei University for inviting me to this seminar.

Let me first describe briefly some of the activities^a that we have been conducting in the last fifteen years in the rural areas of the Central Himalayas in Uttaranchal, India. Two papers¹ on this are being circulated separately and I would like to thank Prof Atom Harako for making copies for distribution. In addition, I have some copies of supplementary materials for anyone who may be interested.

The programmes of the Uttarakhand Environmental Education Centre, Almora (UEEC) are based on certain concepts and perspectives on environment and development. They include a range of interventions but the basic effort is to stimulate thinking and analysis and to find local solutions to environment and development problems being faced in this area. So essentially this is a knowledge-based intervention with the general objective of finding locally relevant solutions.

In this programme we have worked in partnership with government, about 1000 schools, trained 1500 teachers, about 70 000 students are taking a regular course in their schools in grades 6-8, ages 11-14. Besides we have been working with a network of community based organizations and residents of approximately 400 villages, especially women, to initiate and strengthen a process of development with environmental education as its core principle.

In formal schools, environmental education in India has largely followed the pattern of the international viewpoint during the last two decades. The objective has been to create an awareness of environmental issues through an infusion of concepts and information about the environment in existing courses and through extra curricular activities. The emphasis has been on conservation and pollution.

Our approach has been slightly different. Our initial experiences indicated that a separate subject was more appropriate. The content was based on locale specific problems. There was emphasis on practical group work, including quantification and analysis. The concept of the village as an ecosystem, local livelihoods and the importance of the community were highlighted.

¹ Pande, A.2001. Environmental Education in Rural Central Himalayan Schools. *The Journal of Environmental Education* 32(3):47-54

Pande, L 2002. Our land, Our Life:an innovative approach to environmental education in the Central Himalayas Pages 65-73 in Tilbury, D, Stevenson, R.B., Fien, J., Schreuder, D., (eds). *Education and Sustainability : Responding to the Global Challenge*, Commission on Education and Communication, IUCN

Details of the course and how we have implemented it are given in the papers. The course has now been accepted by the authorities to be introduced in all the schools of Uttaranchal.

Some major issues that have come up are:

Environmental education cannot be limited to only awareness of problems, but should also provide practical skills to solve these problems. We must also understand the economic and political issues involved, as well as the values shaping peoples perception of livelihoods and well being. The programmes must be locally relevant.

Whilst we have been fortunate in this opportunity to be able to introduce the subject and follow it up, the feedbacks received have led us to think more deeply into the question of environmental education and development.

We found in our surveys and discussion with the students that they were enjoying the subject; the teachers said that the course is very relevant and useful, but there was a "but." An oft-repeated request from teachers and parents was, but could we help in getting a job for their sons. This was the main reason why they had sent their children to school.

To appreciate the relevance of this question one has to understand the social and cultural context. The region I am talking about is mainly rural, subsistence agriculture, a fairly high level of basic education, men migrate to earn a livelihood in the cities, sending money to their women and children at home who are increasingly dependent on the market for their daily needs.

We did some evaluations. (Reference 1).
Table 1. Percentage of students who selected the answers indicating awareness/ comprehension of the concepts taught in the course

Questions	Students who had not studied the course	Students who had studied the course
1. What are the chief environmental problems in hill villages in Uttaranchal?	15	59
2. What is the reason for low crop yields in villages?	11	35
3. What is the reason for the drying up of water sources in villages?	14	31
4. In villages, what is the most worthwhile work for women?	15	54
5. How can living conditions in the village be improved?	20	72
6. Whose job should it be to fetch grass and fuelwood?	43	54
7. How will you increase milk production In your village?	20	73
8. Why do those water sources surrounded by broad-leaved forest produce more water?	15	26
9. In village forest which species of tree is useful?	24	71
10. What is my purpose in going to school?	22	49

Percentage of teachers whose answers showed an awareness of the concepts covered in the course **Ouestions** First-time **Third-time trainees** trainees 49 From a local point of view, what topics do you think 12 should be included in EE? 77 What are the main problems in the villages around 6 your school? 94 In the villages around your school, what is the effect 35 of forest degradation on daily life? What is the importance of trees? 6 65 77 In the village around your school how can crop 18 yields be increased? "Village forest trees are thinning"; what is the 0 65 reasons for this? In the village around your school why is spring 6 47 flow decreasing? Living in the village, how can money incomes 6 77 be increased? To improve the standard of living of the 12 82 residents of the villages around your school, which species of trees should be present in village forest? Why? 41 What do you consider to be the objective of 76 school education? 14 Overall 72

Table 2. Results of the questionnaire administered to teacher trainees.

A close look at the questions asked indicates the expectations from the course and the results indicate the efficacy of the course.

We also did an analysis of the mainstream environmental education in India.(ref 3). In our presentations and discussions with funders etc, whilst everyone seems to acknowledge the worth of what we are doing, we do not find that moral or financial support which is available to other projects.

This has raised a very important question for us...if what we are doing is all right or commendable, then why a but?

We find some answers if we ask the following questions:

- 1. What is EE about? Is it about responding to the technical problems by a technical solution, e.g. better pollution control equipment to reduce pollution or do we have to question the very fundamental existence of such activities that create these problems in the first place?
- 2. What is our vision of development and the future? In particular, for us, what is the vision for the poor and the marginalized? Is it for them to be able to join the mainstream or something different?

Most of you have probably thought about these questions, but what will be the answer.

At a simpler level, let me give an example. In all our textbooks, it is taught that trees give us oxygen. Let us take a young village girl attending school. She has never seen a factory or polluted urban areas. She sees her mother spending hour's everyday bringing fuel wood and fodder. If we ask her the question what are trees for, to score marks in her exams she will answer oxygen. If asked informally outside the classroom, her answer would be different. Therefore, are we creating a rift in her mind from a very early stage and preparing her for a life away from nature?

The second question, I find even more difficult. What is our current vision of the future, the "good life"? According to my understanding, it is perhaps the lifestyles achieved by the western countries as a result of the advances in science and technology, particularly as seen on TV and in glossy magazines. We only see the usefulness of the various things so generated, the pleasure, and comfort. We do not consider all the effort and the problems that had to be surmounted to achieve it, nor do we see the negative consequences of all the glitter. Most importantly, we do not relate to our own social and cultural background.

However, it is very difficult to ask such a question without being termed as a philosopher or a purely rhetorical question.

This therefore implies people are clear about the aims and ideas of development and have come here to discuss the constraints to achieving this. That is why I am a bit hesitant to use the word "sustainable development". I question this, is our vision clear? Can it be faulty? Since the last several decades, society has been following a certain vision, and if we are not achieving it, should we not question the goal, rather than just blaming it on the means of achieving it. Therefore, I would seriously urge a rethink and the development of a different vision.

It is not that we are starting everything on a new and absolutely clean slate. Whose reality are we interested in? Do we have the time or the inclination to get involved with remote rural communities in say, the hill areas, where I work. There is a feeling that the people making plans and

policies do not understand us. Therefore, it is important to keep this also in the forefront. Yet, it is not that the locals are absolutely clear about their future; they too desire the "good things" of the modern world.

When I say that it is important to get involved, it means I am asking for a personal transformation in the people who are giving advice and making plans. It cannot be an abstract involvement, because that has already been tried out in the past. We have to rethink our personal as well as societal visions for the future. As an example, if our vision is how to become an IT professional in the global market, then how can I visualize the life of people living without electricity and telephone, let alone computers and all? Perhaps some philosophical discussions will be needed. Let me give an example. Durning (1992) states:

"..life's most meaningful and pleasant activities are often paragons of environmental virtue. The preponderance of things that people name as their most rewarding pastimes -- and interestingly, the things terminally ill individuals choose to do with their remaining months -- are infinitely sustainable. Religious practices, conversation, family and community gatherings, theater, music, dance, literature, sports, poetry, artistic and creative pursuits, education, and appreciation of nature all fit readily into a culture of permanence -- a way of life that can endure through countless generations." (p.138)

Yet if one were to ask a young man or woman in their youth or mid life, endowed with good health, their answer to what they want, would be entirely different. However, all over the world, there are a growing number of intelligent and sensitive people who have been rejecting the "good life" and have found greater peace and happiness in their new life. The environment movement has done a great deal to reinforce their views, but do we have any takers in the wider audience?

One of the root problems of rural communities is their "ecological poverty" distinct from "economic poverty" which is what we are accustomed to think about. This can be understood clearly if we consider a remote village in the hills. A person may have money, but if he wants to live there, he must have water and fuel locally available. An absence of these goods will make him "ecologically poor". This threatens his livelihood, leaving him with little option but migration. Women are left to cope with environmental hardships, besides rearing children and other household work. Can we think of empowering rural communities so that they can begin to solve their environmental problems and improve the quality of life for all?

If we develop this theme further, it becomes apparent that the future depends on the well being of the land and dependent livelihoods. If people can feel secure in their own environment, they can then partake in the national and global scene with a sense of confidence. This will mean that we can live our own lives, but without the feeling that we are being deprived of the "good life". I don't find many people advocating this type of an idea. Instead, we are being made subservient to the global market forces, and if one questions that model, one is accused of being backward looking.

Let me dwell a bit on the issue of local and global knowledge. Broadly speaking knowledge can be divided into "global" and "local" knowledge. "Global" knowledge is characterized by the fact that it can be codified, transmitted and follows certain clearly specified, logically defined lines of thinking. The disciplinary rigor that is expected in universities is an example of global knowledge

systems. The manner in which a problem is posed, the tools used to analyze and understand it, the conclusions drawn, follow clearly defined patterns.

Local knowledge in contrast is verbal, transmitted by word of mouth, draws upon tradition and systems of thinking that are usually not codified and therefore not open to the same kind of verification. Most of us are familiar with some forms of local knowledge – perhaps the most common are home remedies for minor health problems.

Now the challenge in using knowledge to bring about a development change is how best to draw upon both global and local knowledge, and how to merge and fuse the two. Is this at all possible? They are based on different paradigms, different assumptions. Can we learn from traditional knowledge, or is it a hindrance in our quest for "modernity" which probably means the "good life" in an urban area.

To illustrate this, we can think of what gender means in this context. One of the most striking characteristics of the area is that women do most of the work. This includes household work, work on the land, looking after cattle, and fetching water, fuel and fodder. The contribution of men to this household economy is small. This is partly because of the way in which gender roles and responsibilities have come to be distributed. It is further accentuated because men often migrate in search of paid work.

To an external observer, this is an inequitable distribution of responsibilities. The question is how can we change the situation. How do local women themselves perceive their situation? What are their priorities? What are the best points of intervention? What can global knowledge of gender issues contribute to this intervention?

To summarise, we at UEEC started with a vision for the future of villages based on ecological rehabilitation, which could be the basis for further development. This ecological rehabilitation of degraded lands needs a sense of community and traditional knowledge. However, our work indicated that we cannot ignore the global viewpoint, which unfortunately has a completely different vision of the future and of development. Therefore, we do need to find an answer to the bigger questions. This would require a questioning of our fundamentals about development and the role of environmental education in the bigger picture. We still think that a substantial number of people will continue to live in rural areas, but are they going to become increasingly impoverished and marginalized or will they be able to live a life of dignity and security. I believe environment education provides us an opportunity to address these issues, which means not only finding local solutions, but also its relationship to the bigger picture of "development". And finally the question of who will do all this?

I have come here to learn from the distinguished participants as to where we go in the future. If there any questions I will be happy to respond. Thank you.

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Environmental Education: WWF Malaysia's Perspective WWF Malaysia, Malaysia, Mathan Lal Bangah











































Learning from the Past for a Better Future

Environmental Education and Human Resources Development (EEHRD) Center Thailand Sarunphong Articharte

1) INTRODUCTION

Formal Environmental Education in Thailand

The issues of environmental education emerged in Thailand a long time ago by developing the idea of suitable use of natural resources. It resulted in the establishment of several governmental departments. Nonetheless, the idea of conservation did not appear in the formal education curriculum until 1948.

In 1970, the Thai Government launched the project called "Environmental Study and Research" in response to the increasing pressure from school, college and university students who demanded a crucial change in environmental education. In 1973, there was a significant change in the Thai educational system, which facilitated Thai educational policy from education for literacy to education for life and society. This concept was positively in line with the idea of environmental study because the concept was designed to consider nature and society as being interrelated. Consequently, environmental education was eventually constituted in the curriculum between 1978 and 1991.

Since then, environmental education has been formally integrated into curriculum, but has not been taken seriously until recent decades due to the drastically increase in environmental problems in Thailand.

Informal Environmental Education in Thailand

Informal environmental education activities exist along side the formal education systems, at curricular and extracurricular levels, in occupational training, and public activities through informal channels such as mass media and voluntary organizations.

Many public awareness campaigns have been carried out by Government Agencies, Private Companies and Non-Government Organizations, such as the Bangkok Metropolitan Administration, the Department of Environmental Quality Promotion (DEQP), the Magic Eyes Non Profit Organization and the Thai Environment Institute, with an intent to increase public awareness in environmental issues.

Role of Thailand Environment Institute (TEI) on Environmental Education in Thailand

In 1996, the Embassy of Japan has provided three million Baht of grant under the Japan's Small-Scale Grant Assistance (SSGA) Program to establish a TEI's environmental training center, which the name was given thereafter as the **Environmental Education and Human Resource Development Center**

(EEHRDC).

The main objective of the Center is to serve the growing demands for both formal and informal environmental education as well as information dissemination. Such demands are related to energy conservation, natural resource management, and pollution prevention. The Center also links local environmental expertise and resources with those of international organizations.

The EEHRD Center aims to develop human resources feature in protecting the environment by means of strategic approach and training methods. Major target groups are industrial personnel, youth and community leaders. The Center provides services to conduct action-oriented researches and studies in the fields of pollution control and waste management. The research outputs will be formulated and set as appropriate training curricula. The Center, working closely with governmental and private organizations, has established local youth networks aiming to push and support the local youths to join force and engage in activities to help solve environment problems. The Center also disseminates environmental information and training to the community to create healthy environment in residential areas and to build harmonious relationship among stakeholders.

Public awareness, non-formal education and training are the principle methods, by which communities can reach their fullest potential. In response to the Human Resources Development (HRD), it is crucial that the HRD process must be developed and implemented in order to strengthen the nation's capacity in managing environmental protection in balance with socio-economic development that supports sustainable development.

2) HIGHLIGHT OF PAST ACHIEVEMENTS UNDER TEI'S EEHRD CENTER

Several projects and programs related to environmental education have been initiated by the EEHRD Center. Since the Center's inception:

• More than 1,500 participants attended the Environmental Awareness Training Program under the Green Business Organization Project in 1996

- More than 1,200 participants attended the Pollution Control and Waste Management Training Program during 1996-1998
- More than 30 countries worldwide and more than 10,000 participants attended the International Conference and Exhibition on Pollution Prevention and Control (Pollution Control'97) in 1997
- More than 500 youths obtained skill development on Youth's Role in Energy and Environmental Conservation during 1997-1998
- The Youth Assembly on Energy and Environment Conservation was launched in July 1999. More than 10,000 youths nationwide become membership of the Youth Assembly.

The achievements of some projects can be highlighted as follows:

<u>BHUMIRAK PARK</u> (Public Landuse for Environmental Recreation)

On the Auspicious Royal Occasion of His Majesty the King's 72nd Birthday Anniversary, the Thailand Environment Institute launched in May 1999 a project called "*Bhumirak Park : Public Landuse for Environmental Recreation,*" to commemorate the event. The main purpose is to utilize community public land for environmentally recreational purposes where environmental protection activities can be mutually participated by community's residents. This pilot project is supported by the Petroleum Authority of Thailand during 1999-2000 and is being implemented in selected areas throughout the country.

The activities include the following aspects:

- Select space to make a public park in the municipal office's area or in the public free space.
- Design the park landscape.
- > Plant city trees, native trees or rare trees with help from tree experts.
- > Invite community residents to participate at each step of work.
- Organize activities in the park, i.e. drawing contest under the theme of "My Dream Park", walk rally in the park, to raise environmental awareness.
- Provide knowledge and assistance in taking care of trees and the park through training and workshops.

- Develop skills in planning and solving local environmental problems to community residents, religious people and government authorities.
- Establish a committee to undertake responsibility of caring for the park.

POLLUTION ABATEMENT

(Pollution Abatement in the Concentrated Latex Factories by the Integration of Social and Technical Aspects)

Thailand is a major producer and exporter of natural rubber and Concentrate Latex used as raw material for producing our daily necessities such as hand and medical gloves, foam mattresses, condoms, toys, balloons. It is one of the natural rubber upstream industries. There are nearly 50 concentrate latex factories located in Thailand and have been playing equal role in the national economy by generating foreign exchange as well as in the generation of pollution.

The Thai rubber industry has been experiencing severe environmental problems such as foul smell and water pollution, which have impacted the surrounding communities. Disputes and conflicts have been severely raised. Represented as an academic resource, the Thailand Environment Institute was approached by the Thai Latex Producer and Exporter Association to conduct research on both environmental and social aspects to provide an integrated approach to mitigate the impacts through partnerships with the Department of Industrial Works (DIW), the Pollution Control Department (PCD), and local administration. The partnership represented trilateral cooperation among the government, the public and the private sector.

TEI has implemented various cleaner production practices to minimize the waste generation, such as ammonia odor control by optimization of ammonia use, rubber recovery from the wastewater, in the pilot industries. Along with cleaner production, appropriate wastewater treatment systems and air pollution control systems have been implemented to prevent both the air and the water pollution problems in the neighborhood communities. Furthermore, appropriate training has been provided to managers, wastewater treatment operators, production supervisors and workers from various concentrate latex factories.

Besides the technical research, TEI also put an emphasis on building good relationship between factory owners and the community residents. Social researchers were sent to survey and analyze the community residents' attitudes on their social and environmental impacts from the rubber factories. A new model of building partnership has been proposed. The community residents and factory owners have been learned to be aware of their roles and responsibility. They have been encouraged to participate in activities concerning natural resources and environment conservation in the areas. Through training channel, the community residents learned how to dispose garbage properly, how to make efficiency use of recycling materials, how to collect water example for quality monitoring, and how to make bio-fertilizer from left-over food. The factory owners contributed to build children playgrounds, community parks and public restrooms. Scholarships and internship opportunity were granted to students.

Recommendation from the research study has enabled the rubber factory to operate the factory process in environmental friendly manner, which is also accepted by community. The government sector has shifted their 'command and control' roles to be facilitators providing 'service and support' to the private sector. Additionally, the community residents recognized and protected their own rights and learned to manage plans and resolve environmental problems.

TRAINING PROGRAM

(Training program on Pollution Control and Waste Management)

Training Program on Pollution Control and Waste Management for Environmental Officers

Because of the rapid growth of industrial sector in Thailand and the inadequate skilled manpower on environmental concerns, the five-days training program offered four times per year, is designed as hands-on training program for participants to adapt the knowledge gained to improve the plant's quality and conditions and make efficient use of resources. They are also enabled to extend greater knowledge and understanding of industrial waste management to reduce environmental impacts to local community, and thus enhance sustainable development. The program is approved and supported by the Department of Industrial Works under the supervision of Ministry of Industry.

The training program contents include the following aspects

Module 1 : Industrial Wastewater Management

Overview of wastewater and its characteristics; wastewater analysis; wastewater treatment system; activated sludge; trickling filter; sludge treatment; chemical treatment; how to select appropriate wastewater treatment system

Module 2 : Efficiency Concepts and Energy Audit

Overview of industrial energy use; rational use of energy/energy conservation; energy efficient options and their environmental impacts; energy audit process and instrumentation; preliminary and detailed audit; preparation of energy audit reports.

Module 3 : Solid and Hazardous Waste Management

Overview of waste and its characteristics; source reduction; material recovery, reuse and recycling, energy recovery, waste treatment; waste disposal.

Module 4 : Air Pollution Control

Overview of air pollution system; sources of air pollutants; types of air pollutants; air pollution effects; air quality management; air pollution control (step-by-step)

Module 5 : Waste Minimization, Environmental Auditing and Environmental Management System

Overview of ISO 14000; waste minimization concept; concept of cleaner technology; environmental audit; environmental management system

Module 6 : Environmental Law

Overview of Factory Act; Ministerial Regulations; Notifications of Ministry of Industry; environmental offences and penalties act.

Module 7 : Case Studies/Technical Field Visits

Case studies and field visits to selected plants that successfully adapted appropriate technology in pollution control. Participants will observe the techniques, the process and discuss in details.

LOCAL YOUTH NETWORKS

(Strengthening the Capacity and Promotion of Local Youth Networks for Environment)

Over the past 7 years, the Thailand Environment Institute (TEI) has successfully operated the works on youth and environment. TEI has worked in cooperation with governmental and private organizations in establishing local youth networks aiming to push and support the local youths to join force and engage in activities to help solve environment problems.

With funding support from the Government of Japan in 1996 and in 2000, youth activities have been implemented throughout the country. The *National Youth Committee for Environment*' was set up to promote the awareness of environmental issues and active stewardship for the environment in Thailand. TEI has been working closely with them in supporting their preparations for action plans. The project of "Strengthening the Capacity and Promotion of Local Youth Network for Environment" was the continual project of "the

Establishment of the Youth Assembly for Energy and Environmental Conservation." The purpose of the project was to increase and strengthen the capacity of the local youth networks in implementing projects and activities to conserve and revive Thailand's natural resources and environment towards sustainable development. The examples of youth programs were environmental working projects under the theme of river conservation and Environmental Camp for Youth Leaders. For such programs, the youth was encouraged and learned to participate more in environmental activities and were equipped with environmental knowledge and current situations. They also had opportunities to share their common interests and extend the environmental conservation network. Their works have been followed up, recommended and promoted.

ENVIRONMENTAL IMPACT ASSESSMENT

(Revision of Thailand Environmental Impact Assessment Process and Human Resource Development)

Thailand Environment Institute was appointed by the Office of Environmental Policy and Planning (OEPP) under the supervision of Ministry of Science, Technology and Environment in conducting a study of current Environmental Impact Assessment (EIA) process practice in Thailand. The study had two objectives 1) to make recommendations on how to improve the process more effectively and efficiently and 2) to enhance performance of government officials to support the decentralization of EIA process in the future.

On the Human Resources Development (HRD) part, performance of regional/ provincial/ local government officials regarding EIA has been evaluated for short-term and long-term planning in order to review authority decentralization plan. The study was a co-operative effort of all stakeholders, i.e. Municipalities, The Habour Department, Department of Mineral Resources, Department of Industrial Works, and the Expressway and Rapid Transit Authority of Thailand -ETA (the latter four were represented as case study agencies). The outcome also led to an expanding revised thinking about the post monitoring aspects of EIA practice in Thailand and development of human resource in preparation for the decentralization of EIA process in the near future.

MANGROVE PROTECTION AND REHABILITATION

(School & Community Collaboration Approach)

The 'Thung Maha Mangrove Forest Protection Group' has collaborated with the Environmental Study Centre of Chumphorn Province, together with local leaders of nearby communities in the protection and rehabilitation of the Thung Maha Mangrove forest since 1997. The project aims to raise local understandings and awareness in natural resources conservation through various activities and campaigns. It also aims to strengthen local aggregation and roles of youth groups in schools and communities, as well as to provide collaboration in mangrove protection and rehabilitation.

The Thung Maha Mangrove was declared as one of the five reserved mangrove forests. It is the most replenished mangrove forest with shoreline of 8 km., making it the biggest aqua breeding place and the main source of income for local fishery. The topography of the area is mountainous, covered by forest. Many islands are found offshore. Therefore, it is a promising land for tourists and has a potential to develop a nature study centre. Its richness in nature has made local people aware of natural resources protection.

The Thung Maha Mangrove forest has recently faced a problem of deforestation. It has been converted to shrimp (Tiger prawn) farms. In addition, some permanent buildings have been constructed along shrimp farms. The forest destruction can be observed by a construction of dam to prevent a shrimp farm from seawater. A blockage of a drainage system has caused destruction to mangrove forest and a major decline in fishery.

The project focuses on understanding of local participation in natural resources conservation and management. A participatory approach would lead to a sustainable success of the project. Therefore, knowledge about values of mangrove forest to human being will be provided to raise local awareness on participatory protection.

The Dawn Project

The Dawn Project is a three-year collaboration between the National Energy Policy Office (NEPO), the Thailand Environment Institute and the Ministry of Education. The primary objective of the project was to encourage environmentally friendly attitude among students, teachers and local communities, by creating awareness on energy saving opportunities through educational measures and behavior alterations. The "Dawn Project" was among the largest of the integrated educational programs at that time, starting with 100 schools in the first phase and extended up to 600 pilot schools in 30 provinces.

The operational approach was to apply a managerial concept involving the whole school in consistence with the national education reform of Ministry of education and the local decentralization reform of the Ministry of Interior.

3) HIGHLIGHT OF PAST ACHIEVEMENTS UNDER OTHER ORGANIZATIONS

Apart from the projects under TEI's supervision and initiatives, there are number of projects and programs related to environmental education implemented by other organizations, which can be summarized as follows:

The Magic Eyes Chao Phraya Barge Program (ME-CBP)

The program aims to provide unique and fulfilling environmental educational opportunities to Thai and International students, through a variety of activities and techniques to increase awareness and understanding of the environment and human's relationship to it, especially within the Chao Phraya Watershed.

Strengthening Environmental Education in Thailand

SEET program is designed to strengthen environmental education in primary and secondary schools through the information and communication tools design and development with the goal of information dissemination and information exchange among target groups and other relevant stakeholders. This project is implemented in pilot schools in 5 geographical regions of Thailand. The expected outcomes would be that teachers in Thailand would facilitate a learner centered approach that encourages learners to also draw in the resources of people in the local community.

River and Stream Investigation Project for Youth (RSPY)

In collaboration with 51 schools located along the Ping River, the River and Stream Investigation Project for Youth, funded by DANCED, aims to enhance environmental education among participating teachers and students with a special focus on monitoring the quality of stream water, coordinating activities and raising attitude towards the responsibility to their communities. The project utilizes comprehensive EE as a long-term strategy for sustainable stream and river management.

4) VISION FOR THE FUTURE

The history indicates that to improve the existing environmental education in Thailand, specific strategies should be developed. Moreover, collaboration among concerned parties should be contributed towards sustainable development. There are many concerns, which need to be properly addressed as follows:

1) Joint Effort to Create New Environmental Educational Vision

Environmental education is a very complicated issue. It is impossible that the only one center, one teaching subject or one program can cover everything. Therefore, the joint effort of NGOs, government, businesses and schools to promote an inter-discipline approach to achieve the goal of environmental education is an absolute necessity. If we promote relationship among educational activities that are currently carried out in many different places, it would be possible for us to achieve the objective of environmental education or education for sustainability.

For example, the 1st National Environmental Education Forum: Sharing for Sustainable Future was proved to be a good mechanism for greater involvement of stakeholders in the formulation and implementation of the environmental education strategy. The Conference was organized by the department of Environmental Quality Promotion, which drew together 300 teachers, principals and educational experts from all over Thailand to discuss the importance of environmental education at all levels. It also attracted experts from overseas bringing contributors from Cambodia, Laos, Vietnam, Denmark, Australia, Nepal England and the United States. Basically, this forum works like a think tank, giving opportunity to all stakeholders to exchange their ideas. Many participants thought that it was a valuable experience in being able to monitor activities in order to bring united effort made by different organizations towards the promotion of EE. *Therefore, similar summit of such is highly encouraged*.

2) Establishment of Resources Centers to Disseminate Information

In many cases, sustainable practices and environmental education activities exist at the community level, but only few of these models have been documented, celebrated and replicated. Until today, 51 Provincial Environmental Education Centers (PEECs) have been established, under the support from the Department of Environmental Quality Promotion (DEQP). The main objectives are to develop human resources, environmental education teaching materials, and environmental education in cooperation with communities and other involved organizations. There is also a need to facilitate inter-active learning and allow people to have access to any learning resource at any time.

3) Encouragement to External Environmental Education Activities

It is important to realize that environmental education goes beyond blackboard and schools. Since the goal of environmental education is not only the presentation of information, but also involves a learning progression from awareness to action. Therefore, there is a need to show students how to turn theory into practice, by promoting external environmental education activities, such as nature trip, visiting renowned organization practices on environmental awareness.

However, these environmental activities can be done within school. While teaching about resource conservation, schools in Thailand can model a good conservation program

by implementing a recycling and waste prevention program, which in turn, would encourage students to make recycling part of their life.

4) Encouragement to Greater Individual Participation

There is a need to encourage greater individual participation, as it provides them with opportunities to be actively involved in working towards sustainable development. This can be done through the establishment of the "Council for Natural Resources and Environmental Conservation" in the village, which should aim to enhance capacity of the individuals, to increase awareness of environmental protection and greater participation at a local level.

5) Encouragement of Environmental Education from Religious Bodies

Almost like primary schools, religious organizations play a vital role in the development of education in Thailand. In the rural areas, temples, churches, mosques and similar institutions are served as the learning places for both formal and informal education. Thus initiating Environmental education program to such places would reach people at community level and motivate them to develop positive environmental action. Therefore, more attention has to be paid toward this matter.

6) Encouragement of Environmental Education Activities by Private Sector

Under Thailand Environment Institute, the Business coordinates activities with the business sector in order to encourage proactive participation in solving environmental problems in Thailand. TEI focuses on cultivating social and corporate responsibility and environmental awareness, and encourages the private sector to conduct business in a sustainable manner. In addition, TEI acts as the Secretariat to the Thailand Business Council for Sustainable Development (TBCSD), which has members from more than thirty leading companies who actively pursue the issue of sustainable development.

7) The Youth Council

Under the Youth Council Program over the past 7 years, TEI envisages the importance of youth development in order to successfully sustain environmental development for the future.

8) Establishment of Research on Environmental Awareness Benchmark

So far, no research has been done to find out the level of environmental awareness in Thailand. Therefore, greater attention has to be paid toward this matter in order to develop and promote the environmental educational activities.

With the mentioned concerns, the EEHRD Center under the supervision of TEI foresees the **importance of human resources development** and **sustainable development of Environmental Education** in Thailand. The Center has set the mission for future to come as follows:

- Concentrate on Sustainable Development of Training Courses and Awareness programs.
- Become self-reliant with the development of more commercial courses related to Environmental Awareness.
- Continue, expand and sustain the Youth Program using Membership concept.
- Develop more and better collaboration among the training institutes.
- Broaden the scope of training courses and target groups.

The Mie Prefecture Eco Movement

Mie Prefecture, Japan, Takuji Terada



Main measures for environmentally advanced prefecture

- Introduction of ISO14001
- Promotion of green purchasing
- Introduction of industrial waste tax
- Establishment of Japan Sustainable Management Award
- Eco movement
- Forest environment re-creation project
- Enforcement of information release through our web site (http://www.eco.pref.mie.jp/english/)









The number of Grant Given	by MCCE
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2000	2001	2002	total
25	21	11	57
56	29	22	107
13	17	10	40
0	15	9	24
0	5	5	10
33	12	8	53
127	99	65	291
	Total A	Amount : ¥10	3 million
	2000 25 56 13 0 0 33 127	2000 2001 25 21 56 29 13 17 0 15 0 5 33 12 127 99 Total 4	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$



Improvement of environmental NPOs activities

• NPOs, involved in nature conservation, made a new network, "Green Network Mie" to act apart from a local government grant.

• Some NPOs have stood on its own feet financially by the business income.



ent situation It	of this
on shops and	51
Individuals	153,876
Groups	117
s refusing ermarket	15~20%
As o	f November 15, 200
	ent situation at on shops and Individuals Groups s refusing ermarket As o





- Summer Eco Point Program
- · Eco movement for conservation of forests and water - Planning "The Neighborhood Nature Days" in collaboration with MCCE



- Setting of the air-conditioning at 28° C .
- To make work at this temperature comfortable, neat casual wear(no ties and jackets) is recommended.





Concrete program 3

Summer Eco Point Program

- Purpose: saving electricity in the home and contributing to the prevention of global warming.
- Measure
 - 1. Making groups of 10 or more families
 - 2. Each group tries to achieve a 6% reduction in electricity used between June to Sep. compared with the previous year.
 - 3. Points are given to the groups according to the number of houses that achieve a 6% reduction each month during the campaign period.

Why we started this Program

- The amount of electricity used by households is continuing increasing.
- There is currently no good plan for reducing the amount of electricity used in a household.
- This measure is very easy. Just check your bill!
- Participants benefit three ways.
 - (1)Saving money on their bill.
 - (2) The group receives a grant.
 - ③Contributing to the prevention of global warming.



Fiscal vear	Participant families	Participant groups	Points accumulated
2001	5,438	124	2,442
2002	23,902	227	5,720
			1 point=¥100





	Before	After
The "Say No to Plastic bag" movement	Refusing the plastic bag is rare.	The refusing rate is increased gradually.
Eco Style Campaign	Tie and jacket were common sense even in summer.	Neat casual(no tie and jacket) is accepted in summer.
Eco Point Program	Almost of all people have knowledge but no action.	Individual activities are increased. Town-based activities
		occurred. (ex. Futami cho)
Neighbor- hood Nature Davs	These events are managed by a local government	NPOs etc. organized the events by their own



Future

- Increase of interaction between Eco Movement and environmental studies is necessary to bring about sustainable life style.
- It is important to create networks in which citizens, environmental NPOs and governments can propose, promote and act on new plan.

Popular Education and Environmental Education for Sustainable Development

Popular Education for People's Empowerment, Inc. (PEPE) Philippines Arnold Lotivio Tarrobago

1. Introduction:

It is worthwhile to note that for the past several Environmental Education Seminars, the Philippines has been represented by officials from the Department of Education, Culture and Sports (DECS), which is now the Department of Education (DepEd). Though there is nothing wrong with that, per se, it is nevertheless quite significant that the Civil Society sector of the Philippines, of which PEPE is a long-time member, finally has the opportunity to share its stories and experiences regarding Environmental Education in our country.

As of 1994, according to studies made by the Philippine Institute for Investigative Journalism, there are 45,000 registered non-government organizations (NGOs) in the Philippines, with perhaps as many people's organizations (POs). There are also numerous organizations that are not yet registered with the Securities and Exchange Commission (SEC). Of this number, around **900 organizations** are directly involved in environment work, either as service and research organizations or as advocacy and lobby groups.

NGO participation in the task of Environmental Education is enshrined in Sections 3 and 4, Chapters 27 and 36, respectively of **Agenda 21** or the Rio Declaration on Environment and Development. This document acknowledges the vital role NGOs play as partners for sustainable development and lists mechanisms for effective NGO-Government cooperation among the signatory countries.

This brings us to the question: "So how exactly is the state of NGO-Government relationship when it comes to Environmental Education in the Philippines?"

2. NGO Environmental Education work in the Philippines and NGO-Government relations:

Someone who is familiar with the traditional NGO-Government relationship in the Philippines would be tempted to ask: How do NGOs like PEPE operate in a situation where NGOs and POs are traditionally viewed by government (and by many people) as having 'left-leaning' agenda and frameworks?

Though this may have been true during the mid 1980's and immediately after the fall of the Marcos dictatorship, when there was an upsurge in the number of new NGOs, the situation has changed dramatically in the past few years. Although there are still many 'left-oriented' NGOs in the country, the majority has begun to consider cooperation with government as one of the more viable and sustainable ways of doing development work in the Philippines.

This particular shift in NGO framework had a great impact on environmental education work in the Philippines. Genuine and effective NGO-Government cooperation now became closer to reality. Complementation between the work of government and NGOs as envisioned in the Rio Declaration has come to pass in many areas.

Take for example, Government's recent directive for all schools to 'indigenize' their curriculum. This has brought new problems regarding implementation. Exactly how, teachers ask, do we 'indigenize' the curriculum? What constitutes indigenization?

Many experts observe that the Department of Education (DepEd) usually has very good strategies when it comes to Environmental Education. The problem has always been with implementation.

Another example is the NEEAP or the National Environmental Education Action Plan, which is an ADB supported program. The targets of Phase 2 (preparations prior to implementation) of NEEAP were as follows:

- 1. Develop the EE curriculum framework for Formal and Non-formal education.
- 2. Develop interactive lessons for basic education.
- 3. Prepare training manuals for national trainers
- 4. Develop supplementary materials for EE.

Were these plans achieved within the timeframe set by NEEAP? Admittedly, the answer is 'Yes', but what about the quality of the results? It is in this issue that Government-NGO debates rage non-stop.

Most 'progressive' NGOs in the Philippines are of the opinion that the DepEd has fallen short of fulfilling its responsibility to the Filipino people, which is to provide them with relevant and quality education. Of course, the DepEd will contest this claim, saying that it is the nature of

¹ Reform oriented groups with a credible history of activism; as opposed to the more numerous 'pseudo-NGOs' – organizations formed by traditional politicians during elections to serve as campaign fronts or organizations formed by some (not all) multinational corporations to serve as 'tax-breaks.'

NGOs to never be content with government, but the results from recent regional tests, which place Filipino students at the bottom rung of the ladder of academic achievement, will prove difficult to deny.

And it is precisely in this matter that NGOs can contribute the most. NGOs have to help government do its job better. But the equation does not end there. There also has to be an equal effort on the side of the government to open itself to new ideas and suggestions. NGOs can keep on talking but if government doesn't listen, nothing will come out of it.

Still, NGOs are few and far apart in between. Thus their combined impact on EE reform is still very minimal. But things are definitely looking up. In fact new doors have been opened by the DepEd to NGOs working for education reform. Take the efforts of the Education Network Philippines (E-Net), for example.

3. E-Net on reforms in the Formal education sector:

The Education Network was formed in 2000 as Philippine Civil Society's response to the challenges outlined in the 1990 World Conference for Education For All (EFA) in Jomtien, Thailand, challenges which were later affirmed during the Dakar Conference held in 2000.

The network is composed of approximately 200 organizations involved in education work, including NGOs, teachers' unions, schools, individuals, etc. And though the E-Net is more involved with advocating for reforms in the Formal education sector, its members have their own specific fields of work – Environmental Education being one of them.

The E-Net, through its member organizations, aims to help government in those areas it is having difficulty with. One of its current projects with PEPE involves research studies on successful community initiatives using "Culture-based"² education. The objectives of the project are as follows:

- 1. <u>Document success stories of culture-based education in communities</u>: this is to show the DepEd that there are successful alternative learning systems currently being implemented in the country (to guard against the usual retort from officials that 'your theories are good but show us concrete examples');
- 2. <u>Cull lessons and recommendations from the community's experiences</u>: this is to analyze

² Education that takes into account the traditional processes of education and learning already prevalent in the community. It is not limited to the indigenous since non-indigenous communities also have a distinct culture.

the experiences of the case schools so that other schools can benefit from the lessons learned there;

- 3. <u>Develop training modules for dissemination to other practitioners</u>; this is to share the specific teaching innovations developed by the case schools with other schools; and,
- 4. <u>Advocate for government to provide support to similar projects:</u> this is to call on government to support initiatives like those of the case schools so that they may continue on with their work to improve education in the Philippines.

The 2-year project has, in addition to identifying and documenting successful examples of culture-based education, also identified the numerous problems faced by community schools in their dealings with government.

4. Case Example: environmental education at indigenous community schools in Davao del Norte, Mindanao):

[Note: E-Net, through PEPE has done a case study on two indigenous community schools out of the four being run by SILDAP-SIDLAKAN, a Mindanao-based NGO working for Indigenous People's Rights and development. The complete results of this case, plus those of two other schools in Mindanao and Luzon, will be published as a book on Culture-based education in the Philippines by mid-2003.]

Since there are no concrete guidelines determining Formal and Non-formal School cooperation at the community level, decisions pertaining to the latter are normally left to the School Principals and the Local DepEd Supervisors, who in turn are guided by their personal biases towards Civil Society groups.

Take the case of a particular community IP school in Davao del Norte, Mindanao, where the prospective joint-management project between the local DepEd and a leading NGO was delayed because of the local DepEd's demand for 'total' control of the IP School in question. This stand on the part of the local DepEd was due mainly to unclear directives from the National DepEd office with regard to jointly managing schools with NGOs or with communities.

The NGO could not agree to the demand of the local DepEd for two reasons:

1. They had no assurance whatsoever that the local DepEd can (or had the capability to) maintain the strict IP standards on EE in their schools.

2. The DepEd would not relax its particular requirement that all teachers under DepEd must be certified. This means the NGO will lose all its experienced community teachers since they did not have DepEd certificates.

In this particular case, the local DepEd was not open to any compromise, which is quite sad because the IP schools being run by the NGO were well known in the region for their culturally integrated curricula and very effective faculty. The only thing that they lacked was enough funds to maintain their schools – a problem that the local DepEd could have helped them with easily.

However, there have been many instances where cooperation was smooth and sustainable like in the case of another municipality in Davao del Norte where the local DepEd and another NGO have combined efforts to manage several IP schools in the area. This time, the local DepEd has agreed to manage the school while the NGO will be the one to train the teachers and develop the curriculum.

5. Other NGO initiatives on Environmental Education:

Many NGOs are looking not only at indigenous methods of education but also at traditional ones.

PEPE, through funds provided by OXFAM-UK to E-Net, is currently working on a nationwide research on 'culture-based' education systems. It is PEPE's contention that 'culture' is not only limited to the 'indigenous.' Even non-indigenous communities have a 'culture' uniquely their own. A 'culture-based' education, therefore, is not the same as 'indigenous education' wherein the accessories, so to speak, are decidedly ethnic in nature. Schools employing 'culture-based' curricula may even seem 'ordinary' to the casual observer.

- 6. Observations, Lessons and Recommendations on EE in the Philippines:
 - Government plans, especially those regarding EE, are oftentimes good. The problem lies in the implementation at the ground level. The program on the 'indigenization' of the curriculum, for instance, looks very good on paper but was implemented with minimal provision (and time) for teacher training. It was implemented too close to the opening of classes for that year. Thus, teachers often complained that they were not instructed sufficiently on how to effectively translate theories into practice.
 - Civil Society interventions on EE are expanding, area-wise, and are gaining ground in the mainstream. Also, new technologies like the Internet are being explored. Mass Media has

also joined in the bandwagon, producing television programs with accreditation from the DepEd. More and more TV programs are being endorsed as being a 'must-see' for students.

- In many areas, the success of Civil Society initiatives on EE depend as much on its acceptance by 'friendly' decision-makers as on the soundness of the program itself. For instance; NGOs often have trouble implementing EE programs in areas where they are not on friendly terms with local school or government officials; while in those areas where local officials support them, their EE programs prove quite successful.
- EE must not be done for its own sake nor done haphazardly, without being well thought out. EE programs prove most effective when done within the specific context of a community. For example, in many tribal areas around the Philippines, the EE programs of indigenous people's (IP) schools are usually located within a larger issue; e.g. ancestral land rights.
- Mechanisms for EE have to be established at the community level. There has to be a synergy of initiatives from all local stakeholders local school boards, PTAs, LGUs, churches, youth groups, government line agencies, local businesses, local media, etc.
- Designing an effective and relevant EE program should be a collective effort among all stakeholders Government, Civil Society and the Communities. There has to be a forum wherein effective consultation and dialogue can take place.
- The DepEd has to acknowledge the inherent 'expertise' of local communities and local organizations in developing EE curricula that are relevant to them. These initiatives have to be supported, encouraged and replicated nationwide. They have to go beyond simple 'accreditation' and into active support funding subsidies, immediate recognition of experts, etc.
- Government has to readjust some of its policies and standards e.g., standards on teacher certificates, standards for geography, etc. especially if these get in the way of effective cooperation with strategic organizations and community schools.
- Monitoring formal education's progress with regard to EE is one of Civil Society's most pressing responsibilities.