3.4.2. Promoting environmental education (EE) by NGOs

3.4.2.1. Environmental education and NGOs in the Asia-Pacific: background, rationale and framework

(1) Background and rationale

1) Environmental education

Environmental education (EE) is a learning process that increases people's knowledge and awareness about the environment and associated challenges, develops the necessary skills and expertise to address the challenges, and fosters attitudes, motivations, and commitments to make informed decisions and take responsible action. The concept of "sustainable development" as presented by the Brundtland Commission, that "humanity meets its needs of the present without compromising the ability of future generations to meet their own needs", is akin to some oriental or endogenous philosophy. Environmental education that is interwoven with "education in sustainable development" includes awareness raising and training, and is critical for achieving sustainable development. It should therefore "be provided for all ages, at all levels" (UNESCO, 1977). Environmental education should not be confined to the narrow scope of school education – it should reach a wider public in order to effectively address environment issues. In other words, environmental education should be understood not only in the aspect of formal education, but also in that of non-formal and information settings. It is "the process of helping people, through formal and non-formal/informal education, to acquire understanding, skills and values that will enable them to participate as active and informed citizens in the development of an ecologically sustainable and socially just society" (ASEAN Secretariat, 2001, p1). Accordingly, it is necessary to have these three viewpoints – namely formal, non-formal and informal education/learning – in considering the strategy for environmental education in the region. Definitions of these three categories and their targets are shown in Box 1 and in Figure 3.4-6.

Box 1 Formal Education, Non-formal Education and Informal Learning

While formal education can be understood as school education, non-formal education is, according to the definition of the Educational Resources Information Centre (ERIC) of the US Department of Education (ERIC), "organised education without formal schooling or institutionalisation, in which knowledge, skills, and values are taught by relatives, peers, or other community members" (ERIC, 1999). This includes any planned and organised education outside school; for example, workshops and seminars conducted by NGOs, communities and businesses. Although formal education can only provide education to students, non-formal education can deliver it to the general public, especially those who are outside the reach of formal education. Informal learning is "casual and continuous learning from life experiences outside organised formal or non-formal education" (1999). This includes learning in the family, workplace, social life, etc. Accordingly, an increase in environmental information is a key to promoting informal learning. In this context, the media, and the use of it by other parties such as government, NGOs and businesses, plays an important role.

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21 The official name of the Brundtland Commission is the World Commission on Environment and Development, which released its report entitled "Our Common Future" in 1987. At the Zen temple built in Kyoto, Japan, in the 14th century, the inscription on the water basin says, "I learn only to be contented", advocating spiritual richness and rebuffing materialistic greed. Mahatma Ghandi (1869-1948), India's legendary figure, left a philosophy that the universe has enough for everyone's need, but not enough for everyone's greed.
2) NGOs and environmental education

While having three types of education in its scope, this RISPO sub-theme research focuses on NGOs as participants because of their significance and the amount of resources available for this research vis-à-vis the vast field of environmental education. NGOs have demonstrated notable results from various activities related to environmental education that would not be performed in formal education. NGOs are important in the non-formal education sector, which is especially significant in the Asian context where a large number of the population is not within the reach of formal education. Moreover, what is unique is that they are not affiliated with particular governments and businesses, which enables them to collaborate with and assist various participants in the field of environmental education. NGOs are able to work not only for non-formal education but also for formal education and informal learning. For example, NGOs can actively participate in international/national efforts, while they work at the community level. They can link easily with government and businesses, as well as with non-governmental parties and schools, in providing environmental education even in a trans-national manner. Considering the nature of environmental problems, which are international, this aspect of NGOs should be highly valued.

The NGO sector in Asia has developed by leaps and bounds in the last few decades as a result of political and socio-economic changes such as globalisation, democratisation and decentralisation. Environmental education strategy in the region must take this trend into consideration. The number of environmental NGOs in Korea has increased from 33 before 1980 to 442 in 1999 (Jeong and

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22 Their important role was already mentioned more than 20 years ago at the Intergovernmental Conference on Environmental Education (Tbilisi Conference) in 1977, which was one of the momentous watersheds for environmental education.

23 This produces a characteristic of environmental education by NGOs, which is “behaviour/problem solving-oriented” in nature, focusing on changing the behaviour of the audience rather than enhancing knowledge. Since it is human behaviour that harms or helps the environment, NGOs try to change the behaviour of the target audience, ranging from the general public to more specific groups such as decision-makers, so that their activities lead to social change for environmental improvement. This tendency results from the fact that NGOs are politically independent by nature, and action for social change is their raison d’être. The NGOs’ Treaty on EE clearly mentions that “EE is not neutral but is value based. It is an act for social transformation” (Treaty on Environmental Education for Sustainable Societies and Global Responsibility, International NGO Forum, 1992). This orientation becomes increasingly important from the viewpoint of education for sustainable development (ESD), which is a recently emerged concept and overlaps largely with environmental education.

24 See Princen and Finger (1994) for environmental NGOs and their role and ability for linkage in environmental governance. For that in environmental education, see Nomura and Abe (2001a).
Cheong, 2001, p188). The Indonesian Forum for Environment, which started with 79 organisations in 1980, now consists of around 450 organisations. More than a third of NGOs recorded in the environmental NGO directory of Japan were established in the 1990s (Nomura and Abe, 2001b). Even in a country like China, there have emerged a large number of NGO environmental protection organisations and environmental volunteers, including Friends of Nature, Global Village, and Green Home (Pei, 2001). After the fall of Marcos, the environmental movement in the Philippines has formed the Philippine Federation for Environmental Concern, the Philippine Ecological Network, the Philippine Environmental Action Network, the Public Education and Awareness Campaign for the Environment, the Environmental Education Network of the Philippines, the Philippine Environmental Journalists, and the Green Forum Philippines (Magallona and Malayang III).

Development of NGOs can also be seen in the field of environmental education. More than 90% of NGOs participating in the Environmental Education Network of Indonesia were established after the democratisation movement started in the late 1980s (Nomura 2000). The Asian Institute of Journalism and Communication, based in San Juan, Philippines, plans to launch the Sustainable Development Programme for journalists and communicators in 2005.

Based on this background, this research is aimed at enhancing environmental education in formal, non-formal, and informal settings in Asia, by focusing on the relationship with non-governmental resources (NGOs).

3) Overview of environmental education in the region

Environmental education is already part of the education system in most of the countries in the region. Development of environmental education depends on the history of each country in terms of environmental problems, political situation, economic conditions, etc. Considering the diversity in these respects in the Asia-Pacific region, it is better to categorise participants rather than generalise at the regional level to show the trend and status of environmental education. Here, an overview of environmental education is presented by sub-region (see Table 3.4-7). The data draws mainly on Bhandari and Abe (2001), ESCAP (2000), and UNESCO-UNEP (1996).
Table 3.4-7 Status of environmental education in the Asia-Pacific region: by sub-region

<table>
<thead>
<tr>
<th>Sub-region</th>
<th>Regional strategy</th>
<th>National strategies/guidelines</th>
<th>EE in national policy documents</th>
<th>Thematic focus</th>
<th>Influential participants</th>
</tr>
</thead>
<tbody>
<tr>
<td>North-east Asia</td>
<td>None (TEEN?)</td>
<td>No</td>
<td>Mentioned</td>
<td>Industrial pollution</td>
<td>Governments act mainly at the project/programme level.</td>
</tr>
<tr>
<td>South-east Asia</td>
<td>ASEAN’s strategy (2000-2005 action plan)</td>
<td>Some countries</td>
<td>Mentioned</td>
<td>Nature and industry</td>
<td>NGOs are very influential. Governments also act at the policy level as well as programme/project level.</td>
</tr>
<tr>
<td>South Asia</td>
<td>SACEP’s strategy (2003-2008 action plan)</td>
<td>No</td>
<td>Mentioned</td>
<td>Natural resources</td>
<td>International and domestic NGOs are very influential.</td>
</tr>
<tr>
<td>Pacific</td>
<td>SPREP’s strategy (1999-2003 action plan)</td>
<td>1</td>
<td>Mentioned</td>
<td>Marine and coastal resources</td>
<td>International NGOs are very influential.</td>
</tr>
</tbody>
</table>

In North-east Asia, there is no regional strategy on environmental education, although TEMM\textsuperscript{26} and NEASPEC\textsuperscript{27} emphasise environmental education at the project/programme level. There is no national level strategy/guideline except in Japan, where a law to promote conservation activities and environmental education was made in 2003, which will be followed in due course by a basic national guideline. In this sub-region, environmental education is stipulated in the existing policy documents rather than as an independent policy. Reflecting the history of environmental problems in the region, thematic focus is put on industrial pollution although it is expanding to cover green issues.

In South-east Asia, there is a sub-regional level strategy, the ‘ASEAN Environmental Education Action Plan: 2000-2005’. This reflects the active involvement of the government in environmental education at the policy level. Unlike other sub-regions in the Asia-Pacific region, some countries, such as the Philippines, Thailand and Indonesia, have established a national strategy/guideline for environmental education. In the Philippines, a group of NGOs has taken the lead in promoting non-formal education.\textsuperscript{28} NGOs are also very active in this region to promote environmental education. The thematic focus was initially the natural environment, but later was extended to cover industrial issues.

In South Asia, domestic and international NGOs are very influential, while government efforts are limited to the project level. SACEP\textsuperscript{29} has worked on environmental education at the sub-regional level in collaboration with NORAD since 1992. In 1996 it published a report entitled "Co-operation

\textsuperscript{25} Japan has promulgated the “Environmental Education Act (Law on the Advancement of Willingness for Environmental Conservation and the Promotion of Environmental Education) in July 2003, which came into force in October 2004. In connection with this Act, a Basic Guideline was adopted by the Cabinet meeting on 24 September 2004 for facilitating the implementation of the said Act.\textsuperscript{26}

\textsuperscript{26} Tripartite Environment Ministers Meeting between Japan, Korea and China.

\textsuperscript{27} North-east Asian Sub-regional Programme of Environmental Cooperation (NEASPEC) comprising the Democratic People's Republic of Korea, Japan, Mongolia, People's Republic of China, Republic of Korea and the Russian Federation.

\textsuperscript{28} Kalahan Academy of the Kalahan Education Foundation (KEF) plays a leading role in environmental education in the Philippines; other institutes that carry out environmental education in the Philippines, for instance, include SESAM, Miriam PEACE, CEAE, EENWP, PETLIPAM; Philippine Women's University, Miriam College and Ateneo de Manila University.

\textsuperscript{29} South Asia Co-operative Environment Programme
Capacity Building for Environment Training in South Asia", based on the materials produced during the evaluation meeting of 1996. It is considered to be a document that identifies the project needs of training in the sub-region. Also, with support from the UNEP-Regional Office for Asia and the Pacific (ROAP), the South Asian Action Plan on Environmental Education and Training 2003-2008 was approved at the ministerial level by a special session of the SACEP governing council in January 2003 (Pradhan, 2003). The thematic focus in this sub-region is natural resources management.

In the Pacific, SPREP made a sub-regional strategy earlier than any other sub-region in the Asia-Pacific region, namely the ‘Action Strategy for Environmental Education and Training in the Pacific Region: 1999-2003’. The thematic focus of this sub-region is marine and coastal resources. One of the characteristics of this sub-region is the strong influence of international NGOs and there are many collaborative projects with them.

The IGES Environmental Education Project has reported, as a result of analysis of 36 countries in the Asia-Pacific region, that it has identified the following major issues and challenges (Bhandari and Abe, 2001):

- A need for enhancing the integrity of national policy/strategy: Except for a few countries, national policy on environmental education has not been formulated.
- Bias towards physical science: Although the scope is being expanded to cover social sciences and humanities following the Rio Summit, the content of environmental education is dominated by physical science.
- A need for building commitment throughout governments: Inter-sectoral (inter-departmental) cooperation is still poor in the field of environmental education.
- A need for improving institutional coordination
- Inadequate manpower: There is a shortage of trained manpower, especially environmental educators and facilitators.
- Rigid curricula and teaching methods: Existing curricula are book-based and examination-oriented. Classroom instruction is geared toward preparing for examinations.
- Inadequate physical facilities: Especially in poor areas, basic facilities such as laboratories and libraries are inadequate.
- Conceptual ambiguity: The concept of environmental education is understood in various ways, which may confuse students in the learning process.

With the above observations as a basis, sectoral backgrounds (i.e. by formal, non-formal and informal sector) are given in part two below, according to each strategy.

(2) Research framework

This research tries to provide Strategic Policy Options (SPOs) to promote environmental education by NGOs, as well as “good practices” (GPs) that can be shared among participants to improve their programmes. SPOs are made based on the GPs. With the recognition of the above-mentioned characteristics of NGOs, this research tries to produce results that will promote EE in an inter-sectoral manner, while focus is put on NGO activities.

For the collection of GPs, qualitative research was emphasised rather than survey-type studies, considering the nature of educational activities that cannot be quantified easily. For qualitative research such as fieldwork, this research focused on the case of Indonesia for the first and second years, while it was extended to Japan in the third year. There are some reasons for the selection of these countries. Indonesia epitomises the recent transition toward democratisation and decentralisation occurring in this region, thus serving as a model case – meaning that the research

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results of the Indonesian case study can be beneficial to other countries in the region. Importantly, in addition, NGOs are very active in Indonesia, especially in the field of environmental education. There are many good practices by Indonesian NGOs, and analysis of them would be significant. Given that Indonesia has been struggling to move out of entrenched economic stagnation, it has been striving to promote environmental education in various forms and generating tangible results quickly. The case of Indonesia is believed to show elements salient to promoting environmental education in developing countries. Japan was selected as it is a developed country in the region, which poses significantly different socio-economic conditions from those in developing countries. For the sake of the applicability of SPOs, it is reasonable to select a developed country and incorporate information from there. Availability of the data and information for the research team also legitimized the selection. However, this research has also made the most of existing materials on the cases in other countries for the purpose of comparison, and efforts were made to enhance applicability of the research products.

The research team consists of IGES and its counterpart, the RMI-Indonesian Institute for Forest and Environment, a NGO based in Bogor. In Indonesia, the team also worked together with local consultants from universities (University of Indonesia and University of Gadjah Mada), business (P.T. Aqua Inc.), government (Department of Education and Ministry of Environment), and NGOs (especially the members of the Environmental Education Network). The consultants prepared papers on the status of environmental education in Indonesia in the view of each sector, and participated in discussions at three research team meetings held in Jakarta. In Japan, the team consulted Prof. Osamu Abe (Rikkyo University) in identifying good practices and making SPOs.

Figure 3.4-7 Structure of research activities
3.4.2.2. Strategies and Strategic Policy Options (SPOs)

One strategy is made for each of the three categories of education – formal education, non-formal education, and informal learning – namely, ‘Enhancing Formal Education with Non-governmental Resources’, ‘Enhancing Non-formal Education by NGOs’, and ‘Increasing Opportunities for Informal Learning’. One to four SPOs are prepared for each strategy (see Table 3.4-8). Background information for each strategy and rationale of the SPOs included are described below.

Table 3.4-8 Framework of strategies and Strategic Policy Options

<table>
<thead>
<tr>
<th>Strategies</th>
<th>Strategic Policy Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>I Enhancing EE in formal education using non-governmental resources</td>
<td>I-1 Primary/secondary education</td>
</tr>
<tr>
<td></td>
<td>(a) SPO for Expanding the Delivery of EE</td>
</tr>
<tr>
<td></td>
<td>(b) SPO for Combining ICT and EE Policy</td>
</tr>
<tr>
<td></td>
<td>I-2 Tertiary education</td>
</tr>
<tr>
<td></td>
<td>(a) SPO for Enhancing the Delivery of Environmental Expertise</td>
</tr>
<tr>
<td></td>
<td>(b) SPO for Enhancing Teacher Education/Training</td>
</tr>
<tr>
<td>II NGOs promoting non-formal education</td>
<td>(a) SPO for Incorporating EE in Continuing Education</td>
</tr>
<tr>
<td></td>
<td>(b) SPO for Networking Multi-stakeholders</td>
</tr>
<tr>
<td>III NGOs promoting informal learning</td>
<td>(a) SPO for Increasing Opportunities for Environmental Learning through the Media</td>
</tr>
</tbody>
</table>

(1) Strategy I-1 Formal Education (Primary and Secondary Education)

1) Status of primary and secondary education and environmental education

There seem to be two major issues for primary/secondary education in the Asia-Pacific region. One is the universalisation of basic education. The other is the recent trend of incorporating ICT in education policy. Details are as follows.

i) Primary and secondary education – general issues

The Asia-Pacific region requires more resources for basic education than any other part of the world. About 635 million people in the Asia-Pacific region are illiterate, which accounts for more than 70 percent of the world’s illiteracy (UNESCO, 2000). Universalisation of Primary Education (UPE) is highest on the agenda in education policy at the regional level.

The World Conference on Education for All, held in Jomtien (Thailand) in 1990, confirmed the importance of UPE and boosted regional efforts for primary and secondary education – in a sense, the Jomtien conference has directed Asian educational policy in the 1990s and 2000s. In line with its regional initiative, namely APPEAL (The Asia and Pacific Programme of Education for All), government, international organisations, aid agencies, and NGOs have made efforts to develop basic education in the Asia-Pacific region, especially at the primary level.\(^{31}\)

Increased access to education is of course important for UPE; however, as UNESCO notes, “efforts to reduce rates of repetition and drop-out are crucial parts of any UPE strategy” (UNESCO, 2004, p57). In other words, problems are not shown in the enrolment rate.\(^{32}\) In Nepal, almost half of the pupils repeat Grade 1, and Cambodia and the Lao People’s Democratic Republic have repetition

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31 Universalisation of Primary Education (UPE) is one of the three major components of APPEAL. The other two components are Eradication of Illiteracy (EOI), and Continuing Education for Development (CED). See the section on strategy for non-formal education for CED.

32 The problems do not show in the high enrolment rate – it is already high in the Asia-Pacific region: 95% in the developing part of South Asia and 118% in that of Eastern Asia and Oceania.
rates around 30% (Ibid, p59). Survival rate to Grade 5 is less than 50% in India and slightly more than 50% in Myanmar and the Lao PDR (Ibid, p63).

ii) New Issues – ICT and education policy

Although it may sound contradictory to the above argument that Asia still needs to increase resources for universalising primary education, the use of ICT (Information and Communication Technology) is a trend in education policy in the Asia-Pacific region.

This reflects the rapid development of ICT infrastructure and the increase in the on-line population in the region. For example, there were 200,000 Chinese who were on line in June 1997, which became 45,800,000 in July 2002. In four years from 1997, the number increased 100-fold in India. In countries such as South Korea, Singapore, Hong Kong and Taiwan, more than half of the population are now on line.

More importantly, ICT skills, especially computer skills, are increasingly important in the labour market, as ICT is already an integral part of any kind of business. To cope with ‘digital divide’ problems, not only within a country but also between developed and developing countries, ICT is high on the policy agenda in all countries in the region, including developing countries.

Recognising these social considerations, ICT is incorporated in education. ICT is used to facilitate the acquisition of new knowledge and the development of capacity to seek new information, to think critically, and to communicate with people, which have become ever more pressing in our fast-changing world. It is considered better to start providing ICT education at earlier educational stages, such as elementary and secondary schools, as their pupils can pick up computer jargon and skills faster and have less mental barriers to such ICT tools.

UNESCO divides countries in Asia into three groups by the different development stages of ICT education policy, and countries in all the categories are increasingly keen on this policy area. First is the advanced countries with integrated ICT in the education system (South Korea and Singapore). In the countries in this category, almost all classrooms have been equipped with computers and other ICTs. For example, in South Korea, the first national plan for ICT was made as early as 1988 and started national level collaboration between the government and the private sector. The Korea Telecommunication Company donated PCs and hardware infrastructure to primary schools throughout the country – now with an average of 10 students per PC at primary schools. The ministries of education in these countries have formulated a national ICT policy in education. They made a master plan to implement those policies, with provision of adequate budgets to ensure effectiveness. Curricula in these countries have been revised to make ICT an essential part of teaching/learning, resulting in a large part of classroom education being delivered on-line. Teachers’ training is also increasingly delivered on-line.

Second are countries where national ICT policies and master plans have been formulated and various ICT integration strategies are being applied and tested, although ICT is not fully integrated in the education system (China, Thailand, Japan, Malaysia, the Philippines and India). These countries are also keen to make efforts to integrate ICT in education. The Ministry of National Education in Indonesian collaborated with the Indonesian Internet Service Providers Association to develop a portal to connect 2000 secondary schools by the year 2000 as the ‘Schools 2000 project’. The Malaysian government started a joint ministry-industry taskforce to develop ICT education policies. It includes the ‘Smart School’ Initiatives, whose components are browser-based teaching-learning materials, a computerised Smart School Management System, a Smart School

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33 Data based on statistics compiled by NUA (http://www.nua.com/surveys/how_many_online/asia.html). Figures for India, South Korea, Singapore, Hong Kong and Taiwan are also from the same source.
34 http://www.unescobkk.org/ips/ict/ict.htm The information on the development of ICT in education in this part mainly draws on the country reports at http://www.unescobkk.org/education/ict

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Technology Infrastructure (e.g. a ministry data centre and help desk), etc. At the end of the pilot project in 2002, there were 87 networked primary and secondary schools in all states throughout the country. Also, the Malaysian government reduced the digital gap between rural and urban schools by its Universal Service Provision Project, involving 220 schools in Sabah and Sarawak. The Project will be expanded into a nationwide SchoolNet, benefiting 10,000 schools in the country. The Thai government collaborated with different government agencies on the ICT In Education Master Plan, resulting in the enhancement of ICT use at the tertiary level of education. Integration of ICT in the curriculum varies among the countries in this category. In Malaysia, China and Japan, ICT is integrated in the teaching of certain subjects but not in a nation-wide systematic manner; in India, ICT is taught as a separate subject; in Thailand, ICT is used for word processing and data processing (spreadsheets) as part of the existing subjects.

The third category is the countries in which efforts towards ICT integration and formulation of national policies have just begun (Myanmar, Lao PDR, Vietnam, Cambodia, Bhutan, Maldives, Bangladesh, and the Pacific Islands). These late-comers are eager to catch up with the forerunners. These countries lack effective work plans for their ICT national policies, if any; however, they have started ICT projects on a small scale. Bangladesh has announced that it has acquired 10,000 computers to equip schools. In Vietnam, the World Computers Exchange and SIEMENS have introduced a project that will equip many schools with second-hand computers. The Cambodian government has started introducing computers in rural schools, with solar panels to reach areas without electricity.

2) Policy needs

i) SPO 1: SPO for Expanding the Delivery of Environmental Education

Constraints on primary and secondary education and environmental education

Reflecting the situation concerning primary and secondary education noted above, environmental education is not affordable to be delivered as an independent subject at primary and secondary schools in many parts of the region. Priority is given to basic skills such as the three Rs (Reading, Writing and Arithmetic) and next come other existing subjects. Environmental education is relatively new and finds it difficult to attract more time and resources in the current situation of primary and secondary education, although it has been incorporated as part of existing subjects.

Lack of teaching staff, which is common in the region, results in large class sizes. Combined with the insufficient expertise of the teachers, the teaching method tends to be a one-way transfer of knowledge. This tendency concerning education method can also be seen in the developed countries in the region, partly due to the competitive examination system, especially for university entrance.

Such an education delivery system hinders the incorporation of environmental education in primary and secondary schools. ESCAP notes: “There are many constraints and barriers to the widespread adoption and practice of environmental education in the region. In the formal education sector, class sizes are often large and teachers lack resources and experience in interactive pupil-centred teaching strategies. School curricula prioritise end-of-course examinations and discourage the development of locally and personally relevant intellectual skills” (ESCAP, 2000, p321). As a result, “rather than establishing a new subject, most countries have opted to infuse environmental education objectives and strategies into the existing curricula” (ESCAP, 2000, p319).

Various country reports of environmental education in the region also point out the same situation in environmental education – bias towards the one-way transfer of knowledge about the environment as a part of existing subjects (see Bhandari and Abe, 2001; UNESCO-UNEP 1996; etc.).

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35 The situation is worse in developing Asia. There are only 9 and 14 teachers in total at all levels per thousand population in the age group 15–64 in the developing part of South Asia and East Asia/Oceania respectively, while that in developed parts of Asia/Oceania amounts to 21 (UNESCO, 2000).
example, “existing curricula are book-based and examination-oriented…Classroom instruction is
grounded toward preparing for examinations, resulting in students who achieve high scores on final
examinations, but who have not developed skill and competency in the subject matter….The
pedagogy is mostly the ‘chalk-and-talk’ method, and learning is based on rote and spoon-feeding.
Because of this, students are not able to look at the problems critically” (Bhandari and Abe, 2001: pp.
67-68).

Changes in delivery styles: importance of outdoor education

The domination of the conventional style of delivery, namely the one-way transfer of knowledge
in the classroom, needs to be modified, although it is an important part of environmental education.36
The Tbilisi Conference on Environmental Education provided five types of objectives of
The conventional approach may enhance knowledge, but may not result in raising awareness and
changes of attitudes leading to increase in participation.

In the context of lifelong learning and environmental education, Abe emphasised the importance
of education ‘in’ the environment for pre-school and school age children, as that is the important
period for sensitising and raising the awareness of the children towards the natural environment. In
the words of Tbilisi’s five categories, the ‘awareness’ and ‘attitude’ of the people are largely related
to their education in this period. Knowledge ‘about’ the environment may come in the next stage.
Education for practical action for the environment is more important for adults.

In this context, there is a strong need to expand outdoor environmental education, especially to
enhance environmental education at primary and secondary levels. Even though one can try to
expand the resources for basic education to meet this demand, it is difficult to do so because
available resources would be allocated for the regional priority of education at this level mentioned
above. Accordingly, a more feasible and practical policy is to utilise non-governmental resources to
supplement environmental education in the primary and secondary schools. In other words, a policy
to make the most of extra-curricular activities to incorporate non-governmental resources is a
solution. In fact, incumbent teachers tend to lack the expertise for this kind of outdoor education, and
there are many NGOs who have good knowledge, skills, experience and motivation in this field – as
many of the good practices collected show. Based on this recognition, an SPO has been made that
draws on those good practices to enhance environmental education at primary/secondary levels by
expanding the delivery through extra-curricular activities.

ii) SPO 2: SPO for Combining ICT and Environmental Education Policy

ICT has significant potential for environmental education. One major objective of environmental
education is to understand the connection/link within the ecosystem, within society, and between
nature and society, and that beyond time (generations) and space (local and international boundaries).
The complexity and trans-national nature of environmental problems require education to
incorporate such varied aspects of the environment. It is meaningful to know about tropical forests
and lifestyles there; for children in Japan, for example, to consider the issue of deforestation from an
international viewpoint. Children living in a downstream area need to know the condition of the
upstream area to consider water resource management.

ICT can assist students to acquire knowledge about environmental conditions and the views of
distant people by facilitated communication and expanded information. It helps students to have
multiple views on environmental issues. It also facilitates students’ understanding of the linkage
between their lifestyle and the environment, as well as the livelihood of the distant people. To use a
common phrase, ICT can facilitate the principle of ‘think globally, act locally’.

36 ERIC (2001) defines conventional delivery style (instruction) as including self-contained classrooms (classes
having the same teacher or team of teachers for all or most of the daily session) and the lecture method (teaching
method in which information is presented orally to a class with a minimal amount of class participation).
ICT can also motivate school children to acquire up-to-date information in an active manner. Accurate data and information, which are constantly changing, are a prerequisite for environmental education. Also, skills to use ICT in an active manner are an important capability to cope with the environmental problems in real life.

The interactive nature of ICT also encourages students to express what they learn in the classroom and the field (i.e. output process); for example, students can express their feelings about new experiences and report discoveries to a wider audience by e-mail and website, which may attract some responses. This interactive communication motivates students for further learning.

ICT can also help teachers. It is widely reported that teachers in Asia lack appropriate materials on environmental education. ICT is an appropriate tool to collect and disseminate information and materials.

ICT has a variety of potential for promoting environmental education. The centralised national policy may not, however, produce the optimal result without the active involvement of society – it has to be designed to incorporate communities and NGOs, and to stimulate grassroots/local/national/international linkage among schools and communities, which is the major benefit of ICT in terms of environmental education. Some good practices have been collected which show the NGOs’ role and potential for this purpose. Based on this recognition, an SPO has been made which draws on the good practices collected to show how to combine ICT and environmental education policy, or how to integrate environmental education in ICT education policy, with special reference to the involvement of society, particularly NGOs.

(2) Strategy I-2 Formal education (tertiary education)

1) Status of EE in tertiary education in the Asia-Pacific region

i) University/college – two types

From the viewpoint of environmental education, tertiary education can be divided into (1) university and (2) teachers’ training institutes (faculty/institute of education). In other words, the former is the education for all university/college students except those who wish to take teacher training. Environmental education at the tertiary level could also be education on the environment (university) and training on how to teach about the environment.

There are two SPOs prepared in this strategy – one is aimed at enhancing environmental education at universities in general; the other is for enhancing teacher training at the tertiary level.

Tertiary education at university in the region

Within the education sector, priority in the Asia-Pacific region has been given to primary and secondary education. Especially since the Karachi Plan was adopted in 1960, special efforts have been made to provide seven years of free and compulsory primary education, declaring 1960 to 1980 as the years of compulsory primary education. Since the late 1980s, education for all has been the major concern for educational policy-makers, and resources have been allocated to basic education.

Almost two decades later than the efforts for primary/secondary education were started, tertiary education in the Asia-Pacific region began to expand in the late 1970s (UNESCO, 1998). This was in response to the increase in the number of graduates from primary and secondary schools and demands for professions needed for further economic growth. The trend was especially seen in South Korea, China, the Philippines, Thailand, Malaysia, and Indonesia. The number of higher education students per 100,000 inhabitants in Korea quadrupled from 1975 to 1985; that in China tripled; that in the Philippines doubled; that in Indonesia tripled; and the number in Thailand became more than six times bigger in the same period (UNESCO-PROAP, 1991). The trend has continued steadily up to the present. In parallel, many types of higher educational institutions to provide
vocational training, such as teacher training, began to be established in this period (Umakoshi, 1993).

The development of tertiary education can be categorised into three phases: Elite Phase (attendance rate <15%); Mass Phase (15-50%); and Universal Access Phase (>50%) (Traw (1974) and Sato (2002)). Among all the countries in the Asia-Pacific region, only South Korea, where gross attendance rate is 52% (UNESCO-PROAP 1998), is included in the Universal Access Phase. Countries such as Thailand, the Philippines, Malaysia and Japan are categorised in the Mass Phase. Other countries such as China, India, Indonesia, Nepal, Papua New Guinea, Fiji, Myanmar, Cambodia, the Lao PDR and Vietnam are categorised in the Elite Phase.

**Development of environmental education at the tertiary level in the region**

Environmental education has been incorporated into tertiary education as institutions develop. In the late 1970s, countries in North-east and South-east Asia started to include environmental topics in their natural science programmes, and this was expanded in the 1980s and 1990s. In the 1990s, environmental topics started to be included in social sciences and humanities. At the same time, teacher education and graduate schools began to cover environmental education.

South Asian countries became active in incorporating environmental topics in tertiary education in the 1990s, starting with natural sciences. In the late 1990s, environmental education began to be included in teacher training and graduate schools in the sub-region.

While North-east Asian countries have focussed on industrial pollution, South Asian countries have emphasised natural resources management. Following rapid industrial growth, South-east Asian nations have made much of both aspects in environmental education.

While training is provided by higher education institutes and the government in North-east Asian countries, it is provided by international NGOs and the government in South-east Asia and South Asia. In fact, in South-east Asia, South Asia, and the Pacific countries, tertiary education institutes and authorities have actively collaborated with external organisations, especially international NGOs such as WWF, IUCN, etc., as well as donor agencies.

**Regional efforts concerning environmental education at the tertiary level**

Various regional efforts have been made for the promotion of environmental education at the tertiary level. Currently, UNEP’s Network for Environmental Training at the Tertiary Level in Asia and the Pacific (NETTLAP), UNESCO’s University Twinning Network (UNITWIN), the Asia and the Pacific Centre for Educational Innovation for Development (UNESCO-ACEID), the Association of Universities of the Asia-Pacific Region (AUAP), and the South-east Asian Ministers of Education Organisation (SEAMEO), are making regional efforts for the development of environmental education at the tertiary level.

**ii) Teacher education**

The importance of environmental education and of teacher training in this field has been regularly recognised in international forums, from the initial conference held in Tbilisi (Georgia) in 1977 to the most recent one in Thessaloniki (Greece) in 1997. The Declaration of Thessaloniki states “special emphasis should be given to the strengthening and eventual reorientation of teacher training programmes” (UNESCO, 1997). In fact, teacher training is “the key to success in implementing environmental education” (Council of Europe, 1995).

Incorporating environmental education into both pre-service and in-service teacher training is considered important not only by national governments but also by other parties such as regional/international organisations and NGOs in the region. For example, the environmental department and education ministry of Malaysia and Thailand respectively have provided environmental education training for teachers. In Sri Lanka, March for Conservation, a
university-based NGO, has provided modules and training on environmental education for primary and secondary teachers (ESCAP, 2000, p323). UNESCO’s Asia Pacific Centre for Educational Innovation for Development (ACEID) has conducted a project with Griffith University to provide teachers with curriculum planning skills and teaching methodologies for environmental education.

Sub-regional trends of teacher training exist. Teacher training and training for experts are mainly provided by governmental organisations and institutions of higher education (universities) in North-east Asia. In South-east Asia, teacher training, especially in-service teacher training, tends to be provided by co-operative activities amongst governmental organisations, educational organisations (teachers’ associations) and institutions of higher education (for example, in the Philippines, Thailand and Indonesia). In South Asia, teacher training, especially in-service training, tends to be provided by co-operative activities amongst governmental organisations, international NGOs, and institutions of higher education (for example, India and Nepal). In the Pacific, it is provided by governmental organisations and institutions of higher education (for example, Fiji and Papua New Guinea). In short, pre-service training tends to be provided by the government and higher education, but in-service training tends to be provided by a multi-stakeholder approach.

2) Policy needs

i) SPO 3: SPO for Enhancing the Delivery of Environmental Expertise

**EE at university in the Asia-Pacific region: problems**

It is widely recognised that there are three functions of tertiary level (university) education, specifically: (a) education; (b) research; (c) community service (see Figure 3.4-8).

The following are characteristics of environmental education at the tertiary level in the region, drawn from the result of an analysis by Sato (2002), which is based on the data from 15 international reports.

(a) Education (b) Research

**Delivery System: Countries in the Elite Phase (university attendance rate is less than 15% of the applicable age group) deliver environmental education only in a conventional style at the tertiary level, without field experience, distance education, open universities, flexible courses and special degree programmes. Like the countries in the Mass Phase (attendance rate between 15% and 50%) and Universal Phase (attendance rate more than 50%), countries in the**

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37 Having said that, there are some NGOs engaging in teacher training on environmental education in this region, such as the YMCA (Korea), Kiyosato Educational Experiment Project (KEEP, Japan), the Japan Environmental Education Forum, WWF-Japan, the Nature Conservation Society of Japan, the Wild Bird Society of Japan, WWF-China, LEAD-China, Friends of the Earth (China), China Green Student Forum, etc. (see Sato, 2002).

38 See Sato (2002) for details of these sub-regional trends.

39 The Education Resource Information Centre (ERIC) of the US Department of Education defines conventional delivery style as including self-contained classrooms (classes having the same teacher or team of teachers for all or most of the daily session) and lecture method (teaching method in which information is presented orally to a class with a minimal amount of class participation).
Elite Phase should expand their delivery system to non-traditional methods, because environmental education emphasises field study, critical thinking, various viewpoints, and other things which are difficult to transfer through the conventional one-way teaching style, especially at the tertiary level. In other words, teaching staff and students must employ learning methods other than lectures in the classroom. Such methods would include field study and visits, discussions, interviews with experts and local stakeholders, and the use of other media such as documentary films and video.

**Foreign influence:** Especially in the Elite Phase, universities are very active in receiving foreign knowledge – programme and curriculum development are being undertaken in cooperation with international NGOs, overseas agencies, etc. However, as a result, education is dominated by foreign viewpoints and local contexts are often marginalised regardless of their importance. While accepting contributions from foreign parties, universities also need to understand the local contexts and provide feedback on them, making the relationship equal and interactive.

**Topics/curriculum:** In the Elite Phase, environmental education at the tertiary level is mostly provided in natural sciences, while environmental topics began to be included in social sciences and humanities in the 1990s. It is rare to see an inter-disciplinary programme there. The situation is somewhat improved in the Mass and Universal Access Phases, although a greater inter-disciplinary approach is required.

(c) Community service/extension service

**Meet the local demands:** A university’s expertise needs to be utilised for the local community. This is also demanded by the local people, to cope with environmental problems.

Several examples of extension service to the public can be seen in Asian countries, in both the Elite and the Mass phases. For example, the University of the South Pacific (Fiji) provides short intensive courses during the university vacation; Beijing Normal University (China) and the University of Hyderabad (India) have distance education; the Open University can be seen in Thailand and India (Sukhotai Thammathirat Open University; Yashwantrao Chavan Maharashtra Open University and Indira Gandhi National Open University). However, they are mainly providing their expertise to the public through training/courses in a general manner, and not directly linked to problem-solving in a local context. If a university is more closely related to the local community/NGOs, its expertise can be provided in a better way to solve local environmental problems.

**Lack of practical knowledge at university:** Especially in the Elite Phase, universities tend to be an ‘ivory tower’ as a result of a conventional style of education emphasising transfer of knowledge. The expertise at university in this phase tends to be biased towards ‘Western’ expertise as a result of strong foreign influence as mentioned above. As a result, the expertise does not fit into the local context in many cases. This shows the needs for incorporating a field-based learning/research system at universities to contribute to the community.

**Open System approach to improve the situation**

An ‘Open System’ approach is a key effort to improve the situation described above, and enhances environmental education at the tertiary level.

There are three types of Open System approach (Sato 2002): (A) the Introvert Open System; (B) the Extrovert Open System; and (C) the Open to Communities System (see Figure 3.4-9). The

40 Some non-traditional methods can be found in this Elite Phase as well, such as inter-departmental courses, experimental education and distance education. Distance education at tertiary level is especially seen in small islands such as Fiji and large countries such as China and India. These show the feasibility of non-traditional approaches in the countries in the Elite Phase.
Introvert Open System is an open system within a university, which emphasises the inter-faculty/interdisciplinary approach and non-traditional delivery systems such as field studies, etc. In this approach, institutions such as an inter-faculty council on environmental education, and inter/multi-disciplinary courses, are set up. This helps to improve the current monolithic approach of environmental education at university as discussed above.

The Extrovert Open System is an open system in relation with outside institutes, including credit transfer schemes, joint degree programmes, field studies, internships, etc. This helps to acquire hands-on experience outside of the university. Together with the ‘Open to Community System’, in which university activities are translated into a local context, this open system contributes to community development in a practical manner.

An SPO has been prepared to embody this open system at the tertiary level based on the experience of the Environmental Study Centre in Indonesia, with emphasis put on the relationship with the community, especially NGOs.

ii) SPO 4: SPO for Enhancing Teacher Education/Training

There are some differences in the style of teacher training in the region according to the development phase of tertiary education.\(^{41}\) In the Elite Phase (attendance rate <15%), teacher education/training is given mainly at the pre-service level for undergraduate students. Countries such as Papua New Guinea, Fiji, Nepal, China, and India fall into this category.\(^{42}\) In the Mass Phase (15-50%), teacher education/training is given at both pre-service and in-service levels as undergraduate and postgraduate education.

In relation to the expansion of postgraduate level education, research on environmental education is also being developed in the countries in this category.\(^{43}\) Postgraduate level research and training on environmental education is critical for capacity building of teachers, as it provides them with good opportunities to obtain related expertise according to their interests and needs. Countries in the Universal Access Phase (>50%), such as South Korea, emphasise in-service training. This trend of teacher education/training according to the development phase of tertiary education can be illustrated as in Figure 6.

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\(^{41}\) See Sato (2002) for an analysis of teacher education in the region by development phase of tertiary education.

\(^{42}\) Although Indonesia is in the Elite Phase, exceptionally, teacher training is also provided at post-graduate level.

\(^{43}\) Environmental education research is conducted at, for example, Mahidol University (Thailand), Chulalongkorn University (Thailand), 36 Rajabhat Institutes (Thailand), Prince of Songkhla University (Thailand), Chiang Mai University (Thailand), Miriam College (the Philippines), UP Los Banos (the Philippines), UP Diliman (the Philippines), the Philippine Normal University, the Philippine Women’s University in Manila, the University of Shiga (Japan), Tokyo Gakugei University (Japan), Shizuoka University (Japan), Naruto University of Education (Japan), Miyagi University of Education (Japan), and Kounan University (Japan).
Considering that the majority of countries in Asia are in the Elite Phase, regional needs concerning teacher training/education are: (1) further incorporation of environmental education components in the undergraduate pre-service courses; (2) expansion of in-service training; and (3) development of pre- and in-service training/education at postgraduate level. Since most of the countries are already engaging in (1), mainly at the curriculum level (e.g. how to integrate environmental education in the current curriculum or as an independent subject), policy needs would be related to (2) in-service training and (3) post-graduate level education. Since in-service training tends to be provided by a multi-stakeholder approach, policies along these lines would be appropriate.

In this context, an SPO has been prepared to enhance teacher training/education, by learning from a good practice found in Indonesia and other related secondary data collected by the research team.

(1) Strategy II Non-formal education

1) Status of EE in non-formal education in the Asia-Pacific region

i) Non-formal education by government

Non-formal education is “organised education without formal schooling or institutionalisation, in which knowledge, skills, and values are taught by relatives, peers, or other community members” (ERIC, 1999). This suggests that there are a variety of participants involved in the sector. Among others, NGOs and governments are the major participants.

Governmental actions in the field of non-formal education started with the mass adult literacy and selective adult literacy campaigns and programmes in the Asia-Pacific region. “These began in a big way in China in 1952 and in Viet Nam in 1953-54, where they were implemented on a massive scale” (UNESCO-PROAP 1997, p13). In fact, the large number of illiterates, which is more than in any other regions, is still a big problem in Asia. UNESCO (1997) classifies Asian-Pacific countries by rates of adult illiteracy as Group A (1–20% illiterate); Group B (21–50% illiterate); and Group C (50% or more illiterate). Although some countries were upgraded from Group B to A in the 1990s, the Lao PDR, India and Papua New Guinea remain in Group B and Bangladesh, Bhutan, Cambodia, Pakistan and Nepal were in Group C in 2000 (UNESCO, 2002).

This literacy education was expanded in the 1970s to a larger concept of basic education with the formation of Divisions of Non-formal Education by the ASEAN countries with the support and
endorsement of SEAMEO (South-east Asia Ministries of Educating Organisation). In Indonesia, Malaysia and Thailand, non-formal education systems were established to cater for adults who had not attended primary school or who had dropped out before completing primary education (UNESCO-PROAP, 1997, p13). Regardless of the efforts, there are still 46 million out-of-school children in Asia, which is more than in any other part of the world.44 As mentioned above, the enrolment rate is already high in this region. The problem is the high drop-out rate. Survival rate to Grade 5 in India is 46.8%; that of the Lao PDR is 53.2% and Myanmar is 55.2% (UNESCO, 2004). Children drop out of schools mainly for socio-economic reasons. Some may have to work during harvesting seasons and parents may not regard going to school every day as more important than contributing to income generating activities.45 Geographical obstacles may also hinder children in going to school – there are many examples of children having to walk for several hours to reach school, especially in rural areas. This suggests the need for a more flexible style of delivery than current formal schooling; for example, allowing for flexible credit systems, etc.46

Since the mid 1980s, non-formal education has expanded further from a mere supplement to formal education to being the core concept by which to achieve a learning society. “The most recent and the most promising educational trend in Asia and the Pacific has been to broaden the view of education so that it encompasses the concept of lifelong learning. Beginning in the late 1980s, many NFE centres have broadened their functions and have been converted to continuing education centres promoting the concept of, and providing opportunity for, lifelong learning outside the formal education system” (UNESCO-PROAP, 1997, p14. NFE stands for non-formal education).

Since the late 1980s, non-formal education policies in the region have been developed in line with an international initiative called APPEAL (The Asia and Pacific Programme of Education for All), which is a regional cooperative programme established by UNESCO in 1987. APPEAL was expanded as a result of the World Conference on Education for All, held in Jomtien in 1990. Under these international initiatives, UNESCO member countries in the region reinforced their resolve and developed policies to provide basic education for all. Continuing Education for Development (CED) is the major component of APPEAL47 in the field of non-formal education.48

45 As a part of the review of progress towards EFA, UNESCO states the socio-economic difficulties in the region as follows: certain beliefs and attitudes prevent parents from sending girls to schools or allowing them to complete the entire primary education cycle; endemic poverty makes the direct and indirect costs of schooling prevent many families from sending their children to schools; and new employment opportunities, illegal or otherwise, for children in urban areas are often seen as more attractive than education and draw children away from school (UNESCO-PROAP, 1996, p4).
46 A flexible credit system is one in which students can obtain credit for class attendance at a university other than the one to which they officially belong, and transfer that credit to be included in the transcript of their own universities.
47 APPEAL has three major components and CED is one of them. The other two are Universalisation of Primary Education (UPE) and Eradication of Illiteracy (EOI). While UPE is in the field of formal education, EOI is an inter-sectoral topic, overlapping with both UPE and CED.
48 The concept of ‘continuing education’ is larger than non-formal education. It is a “broad concept which includes all of the learning opportunities all the people want or need outside of basic literacy education and primary education” (UNESCO-PROAP, 1993, p2). This is based on the concept of a ‘learning society’, in which all agencies of a society are educational providers, not just those whose primary responsibility is education (e.g. schools) (Ibid). However, as UNESCO notes, “It must be recognised that there are government ministries or departments with the title “Department of Non-formal Education” and these are usually responsible for all those aspects of continuing adult education which occur outside the formal education system” (Ibid, p4). For example, continuing education is administered by the Bureau of Non-formal (continuing) Education within the Ministry of Education, Culture and Sports in the Philippines, and by the Department of Non-formal Education in Thailand. Based on this recognition, CED is here put into the strategy for non-formal education.
The key to regional policies to enhance the delivery of continuing education is the establishment of learning centres, which are defined as ‘local and educational institutions outside the formal education system for villages or urban areas, usually set up and managed by local people to provide various learning opportunities for community development and improvement of people’s quality of life’ (UNESCO-PROAP, 1997, p120). In short, the aim of such centres is to deliver education in a continuous manner to people outside the reach of formal schooling.

ii) NGOs and other participants in the non-formal education sector

*NGOs and their advantages in environmental education*

As is seen from the discourse at the Rio Summit (1992) and the Johannesburg Summit (2002), NGOs are recognised as integral to achieving sustainable development. The importance of NGOs has also been acknowledged at key international conferences on environmental education from Tbilisi (1977) to Thessaloniki (1997).

Tilbury et al. (2003) argued that NGOs have encompassed a new role in environmental education over the last decade – from supporting school education by developing teaching guidebooks and materials, to social change by promoting participation in education of all sectors of society inside and outside the school walls. They note: “NGOs have pushed the boundaries beyond the walls of the formal education systems through providing opportunities for engaging stakeholders in a dialectical process that deepens their understanding of environmental education and furthers their contributions” (Ibid, p61).

In fact, cross-sectoral engagement or trans-national linkage is what NGOs are better at than any other participants, which makes them essential in environmental education. This feature comes from the unique position of NGOs, which is non-affiliation with particular governments and businesses. This makes them able to act freely and flexibly. Tilbury et al. (2003) identified nine points as the unique characteristics of NGOs that increase their effect in the development and delivery of education for sustainability, and five of them can be related to this feature of NGOs – linking ability.49

Princen and Finger (1994) pointed out that such linkage in environmental issues can be made through networks of NGOs and other parties.50 In this context, NGOs have significant potential to make networks involving diverse participants in environmental education in a trans-sectoral/national manner.

*Constraints on NGOs and networking*

Research reports indicate that important issues for Indonesian NGOs include (1) capacity building (in terms of organisational management as well as project management/implementation) and (2) increasing the amount of information (e.g. the Japan Environment Corporation and the Japan Centre for International Exchange, 1997, etc.). Although these are raised in the context of Indonesia, there are no countries in the region in which NGOs are exempt from these issues (Bhandari and Abe, 2001).

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49 For example, NGOs can make the linkage between local and international issues (“They provide an alternative voice for civil society and generally play a catalytic role by placing concerns on the global agenda”); NGOs can make linkages beyond national borders (“They are not restricted by national borders and can work in an international capacity to address cross-border issues such as acid rain and globalisation”); NGOs can link environmental education with local issues (“Many NGOs are located close to their target populations and can plan locally tailored educational responses”); NGOs can make inter-sectoral linkage (“They are not restricted to the formal sector and can provide many worthwhile non-formal opportunities for lifelong learning”); and NGOs can link diverse perspectives and contexts (“The broad view and spectrums represented by NGOs can generate more creative approaches to issues of sustainability”) (Tilbury et al., 2003, p61).

50 Although Princen and Finger state this in the context of emphasising the importance of ‘biophysical-political’ and ‘local-global’ linkages that NGOs make in environmental politics, this is largely related to, and can be understood in the context of, environmental education (see Nomura and Abe 2001a).
Although each NGO makes efforts for capacity building, they need external support as there are insufficient resources available for them. Unlike Western developed countries, NGOs cannot have a membership system, in which they run activities with donations made by their members among the public. Such financial resources cannot only be used for capacity building of staff, but also attract qualified people.

It is often observed that resources including information are concentrated into the capital and urban areas, regardless of decentralisation trends in the region. This is even more prominent in developing countries due to the lack of information infrastructure. In the case of Indonesia, all pieces of information are concentrated in Jakarta and inadequate social systems for information dissemination prevent it from spreading into every corner of the country. This problem of information dissemination is also seen in the case of environmental education. Staff of a representative grant-providing foundation in Indonesia say that a great number of teaching materials published or distributed in the country have not reached NGOs (the parcels went astray due to mishandling by the network members) which results in little effect (Nomura and Abe, 2001a).

Issues of capacity building and information dissemination are inter-related. NGO staff in Indonesia point out that it is essential for Indonesian NGOs practising environmental education not only to enhance their capability to provide environmental education but to also improve their abilities to send and receive information, including communication skills in English (Nomura and Abe, 2001a).

As Nomura and Abe (2001a) argue, constructing networks can help cope with this situation. Collection and dissemination of information is of course the most important benefit of networks. In respect of capacity building, networks can strengthen members’ capacities by improving communication and resource sharing among them. Networks can also increase resources by improving external relations, such as with funding agencies.

2) Policy needs

i) SPO 5: SPO for Incorporating EE in Continuing Education

Learning Centres, which are the core component of continuing education policy, are established and run by communities and NGOs in collaboration with government. Although the style of centres varies according to the situation in each country, most governments are actively developing them. For example, the Department of Non-formal Education in Bangladesh has set up 935 post-literacy centres; there are 637 centres in Indonesia; 168 centres have been set up in the Lao PDR (UNESCO-PROAP, 1999).

From the viewpoint of environmental education, how to incorporate environmental education into this component of continuing education is important, as the priority there is given to literacy and other basic skills, and to income generating activities. This is understandable considering the historical development of non-formal education, which has focussed on literacy and other basic education. However, it is also reasonable to expand its scope to include environmental aspects, especially in the context of sustainable development, as the objective of centres is “to provide various learning opportunities for community development and improvement of people’s quality of life” (UNESCO-PROAP, 1997, p120).

51 Koesnadi (1997) describes this issue in the context of environmental regulation.
52 In the case of Indonesia, education at learning centres is basically free; national government pays for the programmes, while the running cost of the facility is managed by communities and NGOs. Teachers are community members and NGO staff. Textbook and educational materials are developed by the national government in collaboration with universities and NGOs.
53 Interview by the research team with staff of the Indonesian Department of Education on 17th September, 2004.
Such learning centres are significant also from the viewpoint of environmental education. Since such centres tend to be located in rural areas, they can play the following roles:  

(a) learning (opportunity) centre especially as an entry point into nature for urban people as well as local people; 
(b) local information centre where educators can have up-to-date resources on the environment and environmental education; and 
(c) research centre to promote research on local environmental issues and incorporate the results into educational materials. 

(a) is significant because existing curricula do not provide students with opportunities to learn in the environment, while there are rich natural surroundings that are not utilised for educational purposes. Rural learning centres can provide good opportunities for people, especially from urban areas, to learn in the environment. As is mentioned as a networking need, local educators tend to lack educational resources while there are many materials, even available free, especially at the international level. Local centres can translate them into the local context and provide them at the local level.

It follows from what has been said that there is a need for a policy to establish centres at the local level in such a manner as to incorporate environmental education. Such centres may not have to be as many as the current learning centres, as the proposed centres may function to coordinate the existing learning centres.

Financial constraints should be overcome by learning from good practices collected in Japan and Indonesia. In fact, the running costs borne by the local community and NGOs cannot be overlooked and it is important to establish the centres with high financial sustainability. However, good practices identified in Indonesia and Japan show that well-designed NGO environmental education centres do have high financial sustainability.

In this context, an SPO has been prepared to enhance environmental education in non-formal education, especially continuing education, by learning from such good practices.

ii) SPO 6: SPO for Networking Multi-stakeholders

‘Networking’ is an important policy target, not only for the non-formal education sector. In fact, it is rather an inter-sectoral policy target, but non-formal participants, especially NGOs, play a significant role.

Call for networking

As mentioned above, the Asia-Pacific region has three sub-regional strategies on environmental education: one is prepared by ASEAN for South-east Asia; another is by SPREP for the Pacific; and the other is the most recent one by SACEP for South Asia. All of them unanimously and explicitly mention networking as an important policy target. Especially, ASEAN and SPREP regard networking as one of the four major target areas, which shows the policy need for this. 

SPREP’s Action Strategy mentions the rationale of this target area as follows: “Environmental education and awareness raising activities are often undertaken by a few people working in their country in an isolated context. In many cases, one or two people may be lone voices in calling for strengthened awareness of the importance of protecting the environment. The benefits of uniting and

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54 See Nomura, et al. (2003) for details of these functions.
55 It can facilitate the use of indigenous knowledge for the purpose of environmental education. Regardless of their potential benefits, most of the indigenous knowledge is scattered and regarded as old, conventional and unscientific. As a result, it is only a limited number of people with awareness of its importance who utilise it for environmental education purposes.
strengthening efforts through networking (of both a formal and informal nature) are well recognised by the region’s band of environmental educators and trainers. In a climate where financial resources are scarce and donor aid limited to environmental awareness raising efforts, the importance of combining skills, resources and experience is appreciated. The similarities of the environments of the developing small island states in the Pacific make this sharing of resources very practical. Efforts are being made to avoid duplication of resources and effort and, where appropriate, countries that have developed environmental awareness raising material are eager to share it with their neighbouring island countries for adaptation to suit local circumstances” (SPREP, 1998, p14). Although this is written in the context of the Pacific sub-region, it is clear that the same situation can be seen in the other sub-regions in the Asia-Pacific region.

Both sub-regional strategies set the goal of networking as being to exchange information and to mobilise resources. For example, ASEAN describes it as the “promotion and improvement of the manner of exchange of environmental information, skills and resources in the region”, and “getting support for environmental education and training through formal and non-formal networks at local/national, regional and international levels” (ASEAN, 2001, p33).

Such local/national/regional networks are not sectoral networks; rather, they should be inter-sectoral networks. ASEAN mentions that linkages are “among GOs, academia, business and industry, media, NGOs and IOs” (ASEAN, 2001, p33; GOs are governmental organisations and IOs are international organisations). Among others, NGOs and government play an important role. The first aim mentioned in the SPREP strategy is “strengthened NGO capacity to network with other NGOs and regional organisations” (SPREP, 1998, p14). The first action mentioned in ASEAN’S strategy is to “identify and designate a government unit/agency/national committee to coordinate EE activities and projects at the national level and to network with other GOs, NGOs, and international organisations at the regional level” (ASEAN, 2001, p33).

As mentioned above, NGOs can be the key in establishing such networks at the local/national/regional level. NGOs are not affiliated with particular governments and businesses, which enables them to collaborate with and supplement various participants in the field of environmental education in a cross-sectoral and trans-national manner. Besides, networking NGOs and other parties assist with the challenges NGOs are facing – capacity building and information collection and dissemination.

Priority should be given to national level networks. This is due to the fact that some regional and sub-regional level networks already exist, although they need to be enhanced. SASEANEE (the South and South-East Asia Network for Environmental Education), whose secretariat is located at the CEE (Centre for Environmental Education) in India, is one such network. SASEANEE was established by CEE and the IUCN Commission on Education and Communication to serve as the Asian Regional Network of the latter. Although initiated by NGOs, SASEANEE also has governmental members, which shows the NGO’s ability to make cross-sectoral linkage. ARNEE (the ASEAN Regional Network on Environmental Education) was established in 1992 to promote environmental education in South-east Asia and to promote and disseminate information on such education. ASEAN, SACEP and SPREP can also serve as sub-regional networks if things develop in that direction. TEEN (the Tripartite Environmental Education Network), between Japan, South Korea and China, which is still in its infancy (or planning stage), also has potential to develop into a North-east Asian sub-regional network of environmental education. After a national network is developed, these regional and sub-regional networks should be enhanced to link the former to make a multi-tier network of environmental education (see Figure 3.4-11).

57 SPREP states it as being “to promote and improve the exchange of information, skills and resources, and to gain support for environmental education and training through formal and non-formal networks at local, national, regional and international levels” (SPREP, 1998, p14).
58 See http://www.saseanee.org/ for SASEANEE’s activities.
A few countries in the region have worked on establishing a national level network on environmental education. Among others, the case of Indonesia, which is an NGO initiative, can provide good information. An SPO has been prepared to embody a national level environmental education network based on Indonesian experience with reference to Japanese experience.

Figure 3.4-11 Multi-tier structure of environmental education network

(4) <Strategy IV> Informal education

1) Status of EE in informal learning in the Asia-Pacific region

i) Informal learning and the media in the Asia-Pacific region

Informal learning is “casual and continuous learning from life experiences outside organised formal or non-formal education” (ERIC, 1999). This includes learning in the family, workplace, social life, etc.; accordingly, an increase in environmental information is key to promoting informal learning. In this context, the media plays an important role. The media can convey environmental information even to people who are not interested in environmental issues or who do not have time for formal and non-formal schooling. Since environmental efforts require the participation of society as a whole, the media has a significant role in solving problems.

In informal learning, a variety of participants can perform different functions through diverse activities toward achieving the goal of environmental education. Many types of media have been used for this purpose, such as the Internet, computer programmes, documentary films and TV programmes. One of the SPOs analyses the effects of radio and the training of journalists for the purpose of promoting environmental education.

Table 3.4-9 compares the access to the three major media – newspapers, radio and TV. Each of them has unique features. Newspapers may not be as instant as the radio and TV, but they can provide detailed information and they do not require any electronic equipment for accessing them. Also, newspapers are better for accumulation of information – one can easily collect and store particular information by clipping. TV has a strong effect, not only on adults and the literate but also on children and the illiterate.

59 In this sense, the major part of informal learning consists of ‘environmental communication’.
From the viewpoint of informal learning, however, the features of radio should be emphasised. Radio can reach more people than TV and newspapers. Thanks to the lower price of equipment, radio is more accessible than TV for the poor. Running a radio station is also not as costly as running a TV station, resulting in a variety of radio stations and programmes. Accordingly, there are more opportunities to put environmental programmes and information on the air. The programmes and information can be delivered to people who lack time and interest. People can even listen to the radio while they are working.

Therefore, the prepared SPO is focussed on the radio; however, this does not mean that it is not applicable to the case of other media. Slight modification of the SPO may contribute to promoting EE in the other media.  

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<th>Table 3.4-9 Access to the media</th>
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<td>WORLD TOTAL</td>
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<td>Less developed regions</td>
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<td>* Eastern Asia/Oceania</td>
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<td>* Southern Asia</td>
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<td>Least developed countries</td>
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2) Policy needs

i) SPO 7: SPO for Increasing Opportunities for Environmental Learning through the Media

In the Asia-Pacific region, the media’s potential for educational purposes “remains largely untapped and the public service component on the air is declining” (ESCAP, 2000, p332). There is a need for a policy to cope with this situation.

It has to be noted here that the media alone is not enough to produce environmental programmes with good contents. Collaboration with expertise is required. “The media’s role in environmental communication remains effective only to the extent that environmental experts, researchers and activists engage and use the media to influence and shape the accuracy, balance and scope of

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60 In fact, we can see some examples of the use of TV by other parties for environmental educational purposes in the region. For example, Malaysia’s Department of the Environment launched a TV serial called ‘Bicara Alam’ (Talk about Nature) that discussed environmental issues of current interest. The Global Village Environmental Culture Institute of Beijing (GECIB) started two successful TV series – one is ‘Green Civilization and the People's Republic of China’, on China Educational TV, and the other is ‘Time for the Environment’, on China Central Television.
environmental coverage” (ibid). Accordingly, there is a need for policies among other parties, such as government, NGOs, and businesses, to facilitate the use of the media for educational purposes.  

Also, there is a policy needed to build the capacity of journalists. Although “the technical nature of most environmental issues requires the ability to grasp these technicalities and then to interpret them in layman’s terms, the formal training courses and curricula for journalists in many countries do not as yet pay sufficient attention to the specialized needs of environmental journalism” (ESCAP, 2000, p324).

There are a few good practices observed on the first point – the use of the media by third parties. In combination with information related to the second point, journalist training, an SPO has been prepared to promote informal learning by increasing the opportunities and quality of information in the media.

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61 The provision of educational courses by schools is generally considered to be formal or non-formal education, as it is organised education. For example, the Open University in the UK and Housou Daigaku (the University of the Air) in Japan are considered to be formal education. Here, informal education refers to programmes which are not organised as educational courses.
3.4.2.3. References


