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ABSTRACT

This book presents the activities of the Asian Ministries for the Environment and government ministries relations with non-government organizations concerning planning environmental communication and education. This publication provides information on policies and strategies from a workshop organized by IUCN, UNEP, and UNESCO in Bangkok in July, 1996. Chapters include: (1) Introduction; (2) Environmental Education and Communication to Achieve; (3) Implementing Environmental Education Strategies in Formal Education; (4) Fostering Partnerships to Achieve Environmental Policies; and (5) Tactics for Implementing Environmental Education Strategies. (YDS)

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Commission on Education and Communication

# Planning Environmental Communication and Education: Lessons from Asia

Commission on Education and Communication (CEC)

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CEC works in a decentralised structure through regional networks. In Asia, the network is called SASEANEE - South Asian and South East Asian Network for Environmental Education, and the regional chair is based at the Centre for Environment Education, Ahmedabad 380 054, India. E-mail: cec@ad1.vsnl.net.in. Please contact Kartikeya Sarabhai for enquiries on CEC Asian membership or the Asian regional programme.

If you would like to know more about our international programme and membership, please contact us at our international address: IUCN, Rue Mauverney 28, CH-1196 Gland, Switzerland. E-mail: mail@hq.iucn.org or ctn@hq.iucn.org.

# Planning Environmental Communication and Education: Lessons from Asia

Seema Saeed, Wendy Goldstein, Ram Shrestha, Editors

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## Contents


| | | | |
|---|---|---|---|
| Acknowledgements | | | vii |
| Preface | | | ix |
| 1. | Introduction | | 1 |
| | 1.1 | International Context | 1 |
| | 1.2 | Asian Context | 1 |
| | 1.3 | Why are Environmental Communication and Education Important? | 3 |
| | 1.4 | The Communication Approach | 3 |
| | 1.5 | Constraints for Environmental Communication and Education in Asia | 8 |
| 2. | Environmental Education & Communication to Achieve National Environmental Policies | | 10 |
| | 2.1 | Case Study 1: Pakistan Government NCS and Strategy for Environmental Awareness and Education | 13 |
| | 2.2 | Case Study 2: Government Strategy in Hong Kong | 22 |
| 3. | Implementing Environmental Education Strategies in Formal Education | | 25 |
| | | Maldives | 26 |
| | | Nepal | 27 |
| | | Malaysia | 30 |
| 4. | Fostering Partnerships to Achieve Environmental Policies | | 31 |
| | | Philippines | 31 |
| | | Malaysia | 36 |
| | | Indonesia | 36 |
| 5. | Tactics for Implementing EE Strategies | | 39 |
| | 5.1 | Developing Institutions, Building Capacity - Environmental Study Centres | 39 |
| | | Indonesia | 39 |
| | | Thailand | 40 |
| | | Malaysia | 42 |
| | | India | 43 |
| | 5.2 | Developing and Using Mass Media | 43 |
| | | Nepal | 43 |
| | | China | 44 |
| | 5.3 | Communicating Law as a Means of Environmental Education | 45 |
| | | Bangladesh | 45 |
| | | Sri Lanka | 48 |
| | 5.4 | Working with Nature Clubs | 48 |
| | | Sri Lanka | 48 |
| | | Malaysia | 52 |
| | 5.5 | Designing Non-formal Environmental Education | 53 |
| | | Bangladesh | 53 |
| | | India | 55 |

5.6 Education and Communication Through Action Research 55
Pakistan 55

6. Recommendations of the meeting 61
7. References, Participants' Papers 64
8. Appendices 67

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The material in this publication arises from the papers and deliberations of the participants at a joint meeting organised by UNESCO, UNEP and IUCN, entitled Asian Workshop on Communication and Education Strategies for Ministeries of Environment and Potential Partners. The workshop was held on July 17-19, 1996 at the Asian Institute of Technology, Bangkok, Thailand. Thanks are offered to all the 80 participants at the workshop who gave their time and expertise to present their experiences and take part in the discussions. In all, the participants represented 17 Asian states, including civil servants from the Ministeries of the Environment, Ministeries of Education, non-government organisations (NGOs), UNEP, UNESCO, UNDP, and the mass media.

The workshop was organised by IUCN -The World Conservation Union, Commission on Education and Communication, in partnership with UNESCO and the United Nations Environment Programme.

Thanks are extended to H.E. Mr. Samak Sundaravej, then Deputy Prime Minister, Royal Thai Government, who opened the workshop. Special thanks to UNEP Dr. Suvit Yodmani of UNEP and UNESCO, and Mr. Victor Ordonez of UNESCO, for their opening addresses and the partnership of their organisations in the preparation and support of the meeting.

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A planning meeting in Bangkok detailed the meeting further, and included Mahesh Pradhan from UNEP, Berna Bayindir, UNDP, Lucille Gregorio, UNESCO, Khun Priyaporn, Ministry of Science, Technology and Environment, Thailand, M.N. Salleh, Malaysian Nature Society, Dr. Shibab Hussain from SACEP, Sri Lanka, Harjit Singh, Ministry of Environment, India, Professor Le Quy An, Vietnam, Kalpana Sharma, India, and from the IUCN Secretariat: Stella Jafri, Pakistan, Kapila Fernando, Sri Lanka, Anwarul Islam, Bangladesh, Wendy Goldstein, HQ, Kartikeya Sarabhai, Chair of the Asian Regional CEC network - SASEANEE, who chaired the session, and Sansanee Choowaew, University of Mahidol University, Bangkok, Zakir Hussain, Ram Shrestha and Roopa Rakshit, IUCN Bangkok, who made arrangements in Bangkok.

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Wendy Goldstein
IUCN HQ

## Preface

### Background

The Asian region is undergoing rapid, although very uneven, economic development. A challenge is to have care of the environment an integral concern in this development process. The advantage is that prevention can be cheaper than repairing, cleaning, or restoring damaged areas or diminished human health.

Throughout the world, businesses are finding that they can actually increase their profits by reviewing their production processes so as to reuse or recycle waste and energy. Tourism contributes much to many Asian economies, and is very inter-dependent with environmental quality. Caring for the environment makes good business sense.

The issue of protecting the environment as a basis of development was the subject of the United Nations Conference on Environment and Development (UNCED) that was held at Rio de Janeiro, Brazil, in 1992. Building appreciation for the environment in all sectors of the society is a challenge for education and communication and was recognised as important in Agenda 21, the blueprint for action from UNCED.

### Why this publication?

This publication reports on what Asian Ministeries for the Environment are doing in partnership with other government ministeries, NGOs and the media in regard to educating people to consider the environment in their actions. It draws on case studies presented for a workshop organised by IUCN, UNEP and UNESCO in Bangkok in July 1996.

This publication, rather than providing full case studies from the workshop, provides extracts of policies, strategies and tactics in education and communication. It is intended that the material and the suggestion for a national workshop might trigger further national action on the strategic use of communication and education. In addition, the publication provides arguments for using communication and education as instruments of policy in order to help countries advance their own planning for environmental education and communication.

### Why a workshop?

Since UNCED many countries in the region have developed a strategy for environmental protection or sustainable development. Undoubtedly a strategy's success will depend on how many people agree to it and are willing to cooperate in implementing it: in other words, how well communication and education play a role with other instruments in the process of strategy preparation and implementation.

As the UN would review progress five years after Rio in 1997, it seemed opportune to take stock of Asian national progress, and determine how to better provide support to education and communication in the region.

The IUCN Commission on Education and Communication CEC has organised similar regional workshops in Europe and Latin America with

UNESCO and UNEP. These fora have allowed a common agenda for regional action to be developed and have contributed the voice of the practitioner to international action plans. All revealed that environmental education and communication are not high on the political agenda, and suffer from limited resources.

A similar problem was foreshadowed in Asia by the report, "State of the Environment in Asia and Pacific," 1995 (p.580), which stated: "Within the limited resources available, considerable progress has been made in the region in promoting environmental education and awareness. However, the need for more investments for education, awareness and communication on environment and development cannot be over-emphasised. As it is, most education and communication activities are starved of funds. The financial allocations for the purpose are minuscule in comparison to investments made in, for instance, infrastructure development. Yet enhanced awareness and greater public understanding of environment and development issues would be vital for the success of all other development programmes being pursued with much large investments. In other words, education and communication are akin to insurance policies to secure the future.

**The Asian workshop**

Participants from 17 countries, including some 80 people, were welcomed by the Regional Director of UNEP, Dr. Suvit Yodmani, the Regional Director of UNESCO, Mr. V. Ordonez and Professor Le Quy An, IUCN Councillor. The workshop was inaugurated by the then Deputy Prime Minister of Bangkok His Excellency Mr. Samak Sundaravej, who emphasised the importance of communication to stimulate partnerships to achieve sustainable development.

In a keynote, the chair of CEC presented what is meant by strategic use of communication and education, followed by brief reports from regional workshops in Europe and Latin America on strategic planning of communication and education.

Representatives from Ministeries/ Departments of Environment from India, Mongolia, Hong Kong, Thailand, Pakistan, Bhutan, Maldives, Sri Lanka and the Philippines reported on their communication and education strategies and two Ministries of Education, Malaysia and Nepal, reported on environmental education integration in formal education.

International agencies, including UNESCO, UNEP and IUCN, explained their work in the region, along with regional organisations such as ESCAP, WWF and SASEANEE (IUCN Commission on Education and Communication Asian network).

The workshop considered in two parallel streams a series of case studies from NGOs and media that related to lessons learned in partnerships with government. Five groups subsequently met to discuss the lessons learned from the series of cases and from their own experience.

These were shared in a plenary session and became the basis for discussion in making recommendations. On the third day, participants addressed an obstacle currently impending their progress. Through a process of questioning, participants were able to explore the causes of the obstacle and offer each other advice about the ways to overcome it.

Finally, the participants met in three separate working groups composed of governments, NGOs and international agencies, to formulate recommendations for further action. These recommendations were reported to the plenary. In concluding, participants, collaborating partners UNESCO, UNEP and the Netherlands government were thanked for their support.

**Observations**

A key issue for many countries in the region is to integrate environment into development policy, and to use communication and education in an integrated way as an instrument of policy. There is a tendency to focus on formal school education target groups, by both governments and NGOs, rather than addressing groups who can make a difference in a policy issue.

One weakness is a tendency to decide on communication media (e.g., to make a TV program, or a poster) without thinking through the issues and the results wanted first. Lessons learned from the cases point to the need for more in-depth analysis of the situation before planning the communication strategy, and to involve the target group in the preparation of the strategy. Much more is to be done to draw on what people know and to integrate this with governmental information. People, it was stated, have a right to be informed on public decisions and interventions.

Awareness doesn't go far enough. Hong Kong's litter campaign has not had the desired behavioural change and participation. The Maldives showed that giving a credible story is only a first step. Before people will change they need to see examples of others making changes, as happened when schools offered to play a role in collecting waste out of the islands. To reinforce this action, supportive structures to collect the waste and take it to pick up points had to be organised so that the new practices became institutionalised. In the end the result was a win-win situation, with the airlines contributing to solving a problem induced by tourism, having a more responsible and greener tourism image, and the islands being able to reduce waste disposal sites on the islands.

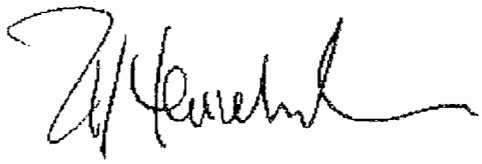
As the example shows, to be successful we need to co-operate. According to the task this can be within government sectors, with educational institutes, the media, NGOs, community groups, Chambers of Commerce, corporations, small businesses, farmers groups and individuals. All can play a role in educating their constituencies as well as incorporating environmental concerns into their policies and practices.

Good communication is a cornerstone of co-operation and partnerships as a shared vision, as common objectives and approaches are negotiated. By involving representatives of key sectors to define the objectives, strategy and the approach, you can build ownership, a culturally appropriate way of working, and more commitment to action. Mutual benefits and respect are

essential as are clear responsibilities, roles and accountability for successful partnerships.

Finally, participants suggested that international organisations should become more co-ordinated in their work in education and communication, as duplication and overlaps occur. They were cautioned against imposing their policies and priorities at implementation level, and to work more with NGOs and be more responsive to the grassroots.

The full recommendations and lessons learned are in the appendix of this publication.



Frits Hesselink
Chair
Commission on Education
and Communication

Asian workshop on Communication and Education Strategies for Ministeries of Environment and Potential Partners July 17-19, 1996 at the Asian Institute of Technology, Bangkok, Thailand.

# 1. Introduction

## 1.1 International Context

The United Nations Conference on Environment and Development (UNCED) held at Rio de Janeiro in 1992 agreed to a global environment and development agenda for the 21st century, called Agenda 21. Agenda 21 is an expression of collective aspirations and commitment of the signatories to push it forward from a statement of hope to a pragmatic blueprint for organising a sustainable society out of the present economically and environmentally inequitable world. While Agenda 21 was agreed on by the representatives of 98% of humanity it has no force of law. It is a menu of options from which nations select according to their needs, priorities and resources (State of the Environment Report in Asia and the Pacific, 1995).

One of the important means of implementing Agenda 21 expressed not only in Chapter 36: Education, Public Awareness and Training, but throughout the text, is gaining people's participation by making them aware through education and training. It recognises that education and communication can be used to help people be aware of the consequences of their actions, provide information to help solve environmental problems, and build skills to enable people to take action and to become involved in solving and preventing environmental problems. The result desired is that all humanity take ownership or responsibility for living within the bounds of the natural resources' ability to regenerate so that future generations can have equal access to resources.

Yet, in a report submitted by UNESCO to the Commission on Sustainable Development at the fourth session, May 1996, it was stated that education "risks being the forgotten priority of Rio". This is of concern in view of the fact that all international governmental meetings since Rio on social development, population and women have urged the use of education and communication to mobilize action, as does the Convention on Biodiversity, Desertification and Climate Change.

*"Education, including formal education, public awareness and training, should be recognised as a process by which human beings and societies can reach their fullest potential. Education is critical for promoting sustainable development and improving the capacity of people to address environment and development issues." - Agenda 21*

It is therefore important that those concerned with education, communication and training lift their heads to look above the level of their day to day work and consider how to increase attention and resources to implement education, communication and training to achieve a balance between environmental and development constraints.

## 1.2 Asian Context

The environmental challenges reported in the 1985 State of the Environment Report in Asia persisted and remained unmet in 1995. Ten years later (three years after UNCED), very little had been achieved by way of reversing the seriously deteriorating environmental trends in the region. While the average economic development in the region has shown progress there are serious distortions in the distribution of human welfare - the poor are poorer and the rich richer, and environmental conditions in general have become worse. The brunt of this is largely borne by the poor who suffer death and disease from, amongst other concerns, air pollution and water-borne diseases.

The population of the region, which is the primary driving force of environmental change, increased by almost the equivalent of the population of USA in the five year period 1990-1995. Environmental change is also compounded by a rapid expansion of economic activities, particularly to attain fast economic growth through rapid industrialisation and expansion in trade. Not only are there new challenges, most of the old ones have become more formidable, as resource deterioration threatens even the meeting of basic needs.

Fortunately, the policy environment and the instruments for their solution have also evolved (State of the Environment Report in Asia and the Pacific, 1995). Amongst the instruments for which expertise exists is environmental education and communication.

Environmental education and care is not new in the region. Centuries of frugal and careful tending of the land on which communities have directly depended has resulted in living in harmony with nature. Each generation has passed on its profound understanding of how to manage natural resources. Religious philosophy has a bearing on the traditional relationship with environment in many nations. In Bhutan, for example, the Buddhist philosophy is seen as a major reason for environmental protection and prevention of environmental disturbance. However, the quickening pace of development, industrialisation, urbanisation and population growth is challenging traditional practices.

**In harmony with nature**

Living in harmony with nature has been an integral part of many cultures of the region, reflected in a variety of traditional practices, religious beliefs and enshrined in myths, folklore and the daily lives of people from time immemorial. Religious beliefs and preaching that exhort reverence to nature and related to conservation can be found in Hinduism, Buddhism, Jainism, Christianity, Islam, and Sikhism, which place great emphasis on the values, beliefs and attitudes that relate to the cross-cultural universality of respect for nature and the elements that constitute the universe. Many of the religious practices, which may seem meaningless and superstitious to modern society, were traditional strategies to preserve the intrinsic relationship between people and nature. The worship of trees, animals, forests, rivers, sun, moon and considering the earth itself as mother goddess were part of this tradition that made protecting nature an integral part of the society. Two of the major initiatives taken by WWF India to forge an alliance between religion and conservation are the 'Vrindavan Conservation Project' and 'Conservation of Sacred Groves'.

The Vrindavan Conservation Project was initiated in 1991, supported by WWF International with a view to work with religious communities and local people in conserving the natural environment and to promote environmental awareness. The programme consists of community participation in tree plantation and school education through teacher orientation workshops, nature camps, debates, quizzes and competitions which are organised on a regular basis.

Conservation of Sacred Groves Project is based on the religious faith which calls for conservation and maintenance of certain patches of land or forest as sacred groves. In India, these are found abundantly along the Western Ghats, the West Coast and in several parts of Kerala, Karnataka, Tamil Nadu and Maharashtra. Inspite of the depletion of forests in many parts of India, some sacred groves still remain intact as oasis in deserts, conserving rich biological diversity. The maintenance of sacred groves has contributed to forest conservation, though in a small measure. There are also examples of sacred ponds attached to temples in many parts of India. Some of these have been responsible for the protection of certain endangered species of turtles, crocodiles and the rare fresh water sponge.

## 1.3 Why are Environmental Communication and Education Important?

As governments develop and revise national plans for environment and sustainable development, the role of communication and education needs to be increasingly considered and integrated. The general aim of environmental education and communication is to encourage and assist societies in conserving the integrity and diversity of nature, and to ensure that any use of natural resources is equitable and ecologically sustainable.

In the process of environmental education individuals gain awareness of their environment. They also acquire and exchange the knowledge, values, skills, experiences and the determination which will enable them to act, individually and collectively, to solve present problems and prevent problems in the future.

*"Environmental education is an educational process about, for and through the environment to upgrade the living standards of the people. It aims at improving the quality of life of the people and the quality of the environment with importance placed on sustainable development through an understanding and wise management of all the natural resources" - Government of Malaysia*

The common perception of education as a one-way flow of information - usually taking place in schools - is a limited one, and is changing. Environmental education is an instrument to enable participation and learning for people of all ages, based on two-way communication. People have definite perspectives concerning their own reality. They know the local situation well, and their values and aspirations must be an integral part of any education or communication programme. When grounded in dialogue, environmental education and communication become more effective, easier, instructive and successful. The educational process becomes sustainable when the people decide to head for action, when they take responsibility and lead the process themselves. In such a perspective, education and communication are important tools for managers, civil servants, social groups and NGOs to put into effect environmentally sound policies (van Hemert et al., 1995).

## 1.4 The Communication Approach

Unfortunately, planners, environmentalists, conservationists and scientists often forget education and communication because they think the scientific facts are convincing in themselves. Certainly scientists enjoy exchanging this type of information, but it doesn't necessarily motivate people outside these circles. Most people in the world do not think in scientific or environmental terms and have a different perception of the issues. In seeking to change knowledge, attitudes or behaviour, scientific facts and data are in themselves insufficient. They have to be translated into concepts and messages which make sense to a target audience, are relevant to them, and appeal to them. This means connecting with more emotional aspects and to personal benefits. Many costly errors are made by planners because the perception of the people is not considered, though marketing and advertising use this information in selling their products.

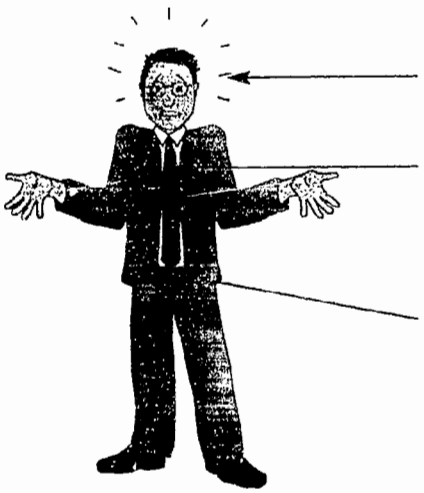
To be able to connect with people, the first stage of communication is listening to learn what people know, think, believe and do. The challenge in communication is to begin from the reality of the target group and to understand that perception and behaviour is governed by people's reactions

at different levels. These levels include:

- brain : intellectual understanding, and knowledge-based;
- heart: emotional feeling of affinity with the issue; and
- instinct : desires or "gut" feeling.

Communicators should have the skill to connect information to people's perceptions and to balance the emotional appeal with the intellectual capacity.

## Levels of perception

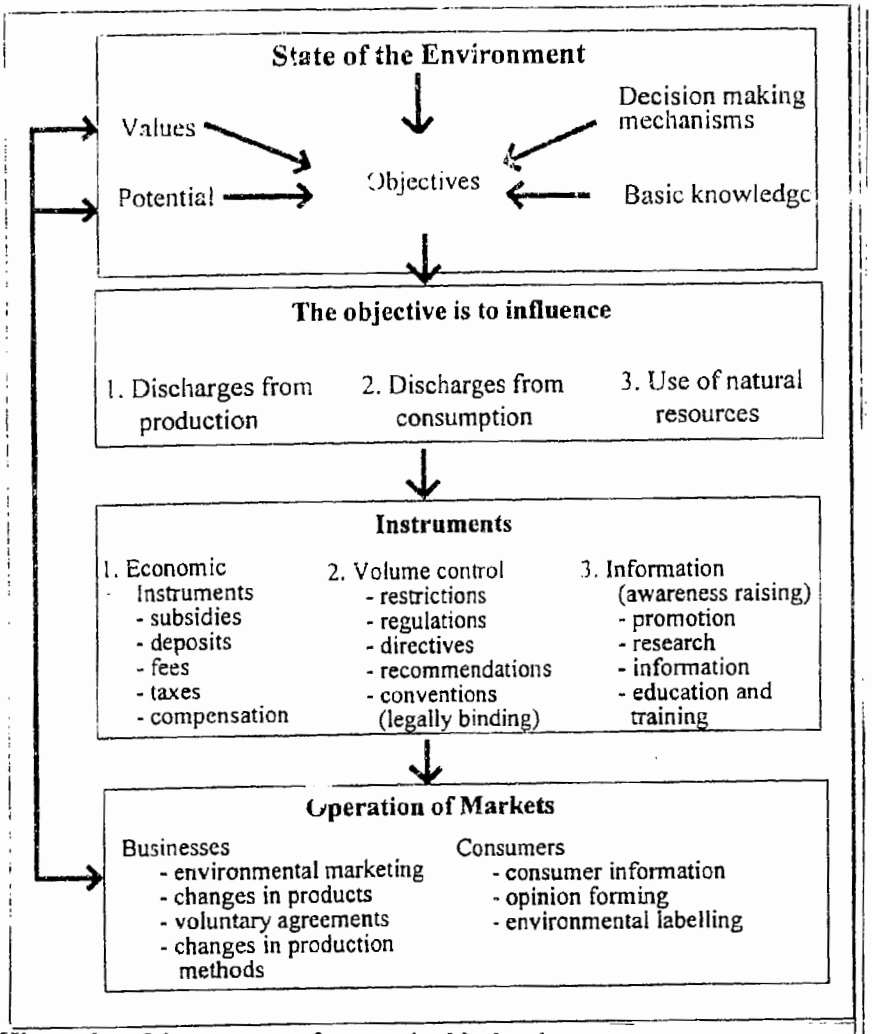



*"Although environmental awareness is important, it is not sufficient to create participation at the grass roots level. Enabling and empowering people is needed to allow active people participation in environmental improvement. In other words, if greater responsibility for environmental management is to be given to the communities, they must be allowed greater authority over their resources and the environment."*
*Harry Harsono Amir Indonesia*

**Communication as a policy instrument**

Communication is an important part of successful planning and implementation of policies. To achieve policy goals, governments have at their disposal strict command and control instruments such as taxes, levies, subsidies, regulations and laws, as well as soft instruments such as instruction, education, information, marketing, advertising and public relations (see figure, page 5). A judicious mix of these instruments is most effective in bringing about changes.

Communication as a separate instrument can only be successful when not too many obstacles exist to changing practices towards environmentally friendly practices.




**Hierarchy of instruments for sustainable development**
*"Finnish Action for Sustainable Development," Ministry of the Environment, Finland*

Communication as a sole policy instrument is effective only when:

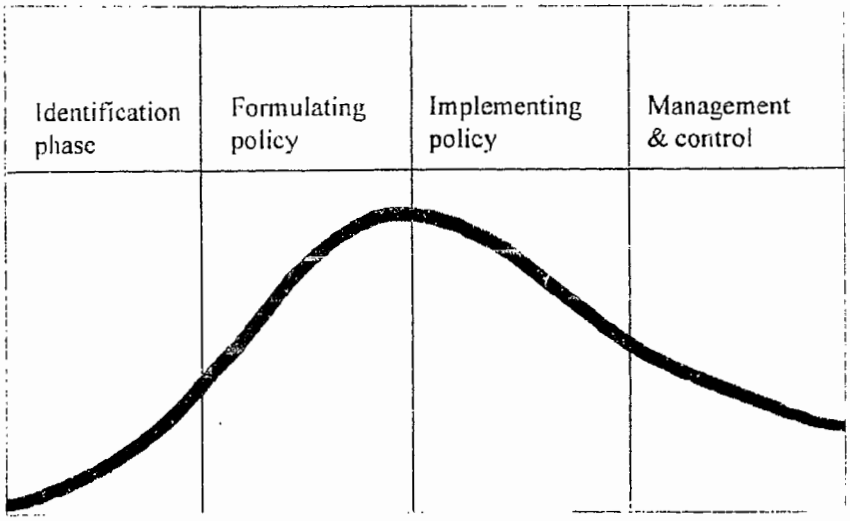
- the target group is identifiable and reachable;
- the policy is clear, effective and legitimate;
- the source is credible and trusted; and
- the behaviour requested is practicable, visibly helps solve the problem, has low individual cost, and is subject to control.

To be effective, communication and education play different roles in the different stages of policy development. Understanding what is necessary when, is a key to cost effectiveness and success. Research and public affairs studies in different countries have revealed that policy making is a cyclic process of basically four main stages:

- identifying the issue or agenda setting;
- formulating the policy;
- implementing the solutions;
- management and control.

*"Communication needs to evolve into something more than brochures, videos and posters to a broader understanding of environmental issues, fostered as a means of building support for legislative changes. It needs to be viewed as a way of mobilising, assisting, and giving synergy to other institutions at the grassroots level, the community based organisations, on which implementation depends at the provincial level and to building support in provinces where strategies are just beginning to be developed. Communication also needs to be linked to other instruments, and accompanied by incentives and penalties for implementing the NCS." - National Conservation Strategy, Pakistan*

Communication has a different significance and plays different roles in each of these stages. The figure below shows the role of the government in the phases of the policy cycle. During the identification phase the government's role increases gradually, reaching a peak at the end of formulating the policy. Thereafter there is a slow decrease in the government's involvement as people take responsibility themselves.




**The role of government during different phases of the policy life cycle**

Identification phase:
At this stage the role of communications is to place environmental issues on the agenda. Organisations in society play an important part here. The central government adopts a relatively low profile. Communication services need to listen to what people are saying so that they can identify problems promptly and pinpoint specific issues affecting the target groups of environmental policy. At this stage activities also involve communicating opinions, drawing attention to the issues, mobilising support and defining themes.

Formulating environmental policy:
At this stage activities can raise public awareness of environmental problems, increase the public's understanding of the policy proposals and create broadly-based support for the issues. The problems tackled are those which legislators have accepted but for which solutions have not yet been found. At this stage the target groups are opinion leaders, decision makers, and are part of the general public.

Implementing environmental policy:
The aim at this stage is to communicate information about how to proceed. The idea is to communicate the substance of policy and the accompanying measures. At this stage communication will be mainly aimed at specific target groups.

Management and control:
Here communication is provided as a service to sustain newly-adopted attitudes and behaviour. The aim is to provide information about the policy

that is being pursued as well as feedback reactions to that policy. Communication may be in the form of an active service explaining complex legislation and regulations. It may also be used to announce modifications to policy instruments, for example, legislation.

| Policy Life-cycle Phase | Methods of Communication |
|---|---|
| Identification | - regular opinion/attitude surveys<br>- mass media content analysis<br>- analysis of communication materials of NGOs, consumer groups<br>- systematic and continuous network with NGOs, interest groups, scientific institutions (public relations)<br>- regular briefings/interviews and meetings with interest groups |
| Formulating Policy | - knowledge/attitude/practice (KAP) surveys<br>- integrating communication in the mix of policy instruments<br>- design of communication strategy<br>- informative extension/communication to disclose issues and policy options to those who will get involved |
| Implementing Policy | - communication as an independent instrument<br>- communication complementary to other instruments<br>- informing groups on the use of other instruments (news, laws, subsidies, etc.)<br>- ex-ante evaluation through qualitative research |
| Management & Control | - public information<br>- informing on changes of policy design and implementation<br>- regular opinion/attitude surveys (since age-linked target groups are replaced by younger generations) |

**Summary of how methods of communication vary in different phases of the policy cycle**

### Changing practice

Four phases in gaining people's adoption of new practices are:

1. Credible stories attract interest.
2. Easy life excuse impossible: people are initially reluctant to make a change in the public interest when personally it makes things more difficult for them, especially if they are unsure of others making the change.
3. Institutional: if the changes in behavior are supported by structures, or organisational practice, it becomes the way of operating.
4. Win-Win: mutual benefits for the person and social group are apparent, as for the policy institution assisting in making the change permanent.

An example of this process is given by the Maldives.

1. Credible story : in the Maldives, food and other products are delivered to the islands by airlines, which also bring the tourists who demand these products. The islands had difficulty in disposing of the waste. The environment authority presented the case to the airlines, explaining to them that they were a part of this dilemma because they left the island with less cargo than when they arrived. There was the possibility that they could pack out the waste.
2. Easy life excuse impossible: staff on the airlines realised they had to take responsibility and agreed to take the waste out, provided it was delivered to the airport.
3. Institutional: to prepare waste for the airlines to take out, the schools were approached to organise waste recycling schemes and to collect cans, papers and plastic as part of their environmental education programme. The students mobilised their families and other families and hotels on the island to sort and prepare their waste. A pick-up and delivery system was put in place to get the waste delivered to the airport.
4. Win-Win: the airlines and tourist industry could use the ecotourism angle, which gave them a greener and more environmentally responsible image. The Maldives gained a solution to a burgeoning waste problem at minimum cost.

**Steps for Developing a Communication Plan**
(Appendix A gives details of these steps)

| | |
|---|---|
| Step 1 | Analysis of issues |
| Step 2 | Outline of the role of communication |
| Step 3 | Determination of the target groups |
| Step 4 | Determination of communication targets |
| Step 5 | Determination of the strategy/message |
| Step 6 | Determination of means |
| Step 7 | The budget |
| Step 8 | Organisation |
| Step 9 | Plan |
| Step 10 | Evaluation |

*Ministry of Housing, Spatial Planning and the Environment, Government of the Netherlands*

## 1.5 Constraints for Environmental Communication and Education in Asia

### Access to Information

Environmental institutions require access to timely and credible information on the state of environment, extent of the problem, its impact on human beings, and ways to resolve problems. In Vietnam, for example, data and information are very often collected and managed by different agencies in different provinces and there is a lack of coordination and communication among these agencies in the sharing of information.

**Formal education sector**

The development of environmental education in the region as a whole has concentrated on primary and secondary levels of the formal education system, with less attention paid to the tertiary and preschool levels. Too much emphasis has been placed on theoretical cognitive aspects, while affective components (values, attitudes) and techniques are still given little or no attention (State of the Environment in Asia and the Pacific, 1995). Schools can lack adequate infrastructure facilities, as well as adequately trained teachers and materials. The overcrowded school curriculum constrains schools from incorporating more field-based investigative type studies on the environment. Furthermore, the mix of social and natural sciences disciplines in educating for sustainability calls on unprecedented collaboration in teaching. In some cases as well, there is little formal schooling.

In Malaysia, formal education programmes are limited by:

- a shortage of trained education officers in environmental education (EE) at the Ministry and state level to plan, organise, implement and monitor EE programmes in schools;
- a shortage of supporting staff and office equipment at the National Environmental Education centre;
- a shortage of EE materials for teachers and students;
- a weakness in the monitoring system; and
- a lack of good communication networks within and among the various governmental and non-governmental organisations.

Other constraints include:

- a lack of government priorities or political will for environmental policy;
- a lack of recognition of communication as a valuable tool for policy, in part because of a misperception about communication as pertaining only to media, rather than it having a relation with different parts of the policy cycle, and also because of competing demands for financial resources;
- a lack of appropriate legislative framework/enforcement and institutional support, such as tax exempt status;
- limited resources (funds and suitable materials) to address the environment and environmental education;
- a lack of coordination and cooperation both between and among NGOs, government and industry;
- government control of mass media;
- a lack of commitment/personal involvement of the various actors;
- high turnover of staff in government and school systems;
- a lack of access to expertise in the region; exchanges and networks; and
- a lack of focus on schools and formal education; curriculum overload, and a lack of teacher training and resources.

*"As it is most education and communication activities are starved of funds. The financial allocations for the purpose are minuscule in comparison to investments made in, for instance, infrastructure development. Yet enhanced awareness and greater public understanding of environment and development issues would be vital for the success of all other development programmes being pursued with much larger investments. In other words, education and communication are akin to insurance policies to secure the future." - State of the Environment in Asia and the Pacific, 1995*

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## 2. Environmental Education and Communication to Achieve National Environmental Policies

Many countries have prepared plans for the environment since the United Nations Conference on the Human Environment in Stockholm in 1972, and have been reviewing these in the light of sustainable development as a goal since UNCED. The process of developing national strategies has been evolving to put environment and sustainable development on the public agenda. Government and non-government institutions are being established, and their capacities are being built into policy, planning and managing the environment. Education and communication feature as important parts of policy in these plans, and a wide range of tools and approaches are used, from influencing formal education systems, to working with NGOs and mass media and running campaigns. Some countries have surveyed environmental attitudes and concerns which point to a lack of action based on lack of awareness, knowledge or concern for the environment. More action-oriented approaches are being tried.

*"There is a growing awareness that environmental targets will not be reached without raising awareness of the issues and encouraging people to participate in more environmentally friendly life-styles. Experience has shown that national conservation strategies will not work if education and communication are overlooked or carried out in a reactive way. Success depends on how people are involved so that they want to take responsibility for their environment. They need to be given not only information in ways in which they want it, can understand it and use it but also skills and motivation which will facilitate change."* - *National Conservation Strategy, Pakistan*

This section briefly surveys some of the countries' policies and strategies, and details two case studies of government strategies, those of Pakistan and Hong Kong.

**Vietnam** has recently adopted its National Plan for Environment and Sustainable Development, A Framework for Action 1991-2000. In accordance with it, the Ministry of Science, Technology and Environment (MOSTE) was established in 1992 and the National Environmental Protection Law (NEPL) of Vietnam was approved by the National Assembly in December, 1993. The National Environment Agency (NEA) is an executing agency within the MOSTE, which has formed an environmental institutional network in 53 provincial divisions.

The National Conservation Strategy (NCS) for **Nepal,** which was prepared with the assistance of IUCN–The World Conservation Union, was endorsed by His Majesty's Government of Nepal in 1988. The NCS stressed the need for incorporating an environmental education component into school level curricula, teacher training programmes, and training programmes run by various training centres and academic programmes of the Tribhuvan University.

The National Conference on Environmental Education, jointly organised by the Ministry of Education, National Planning Commission, IUCN and UNESCO in 1991 as part of the NCS implementation process, prepared a draft for its National Environment Education Guidelines. The conference was useful in sensitizing responsible individuals from the government sector, educational institutions, and NGOs, and the guidelines have been useful in formulating environmental education and communication.

From the outset, raising public awareness about the National Conservation Strategy was an integral component, as was gaining public input. To promote environmental public awareness and education, the Eighth Five Year Plan has set priorities for both formal and non-formal environmental education and communication. The Plan has promoted environmental

knowledge and awareness through people's participation and publicity, using various forms of media to reach the isolated villages of the country. A revision of the school curricula to incorporate environmental education is underway, with NGOs playing an active role in community education, media and supportive programmes to schools and villages. An environmental education and awareness programme has been introduced at the grassroots level through NGOs.

Environmental education and communication also has high priority in the long-term plan of environmental protection in **People's Republic of China.** A "Trans-century Green Programme" on education and communication is considered an integral component of China's Ninth Five Year Plan. The plan aims to significantly increase public awareness on environmental issues. The leaders and managers will be trained to enable them to undertake new initiatives and make informed decisions.

China is also making an effort to enhance its capability to care for the environment through international cooperation. The government of China has been participating in international networks on environmental education, and has also been regularly organising activities at different levels.

The National Environmental Protection Authority of the People's Republic of China has been performing a leadership role in introducing Global Learning and Observations to Benefit the Environment (GLOBE) Programme. This is a worldwide network focusing on science and education which coordinates students, teachers and scientists in order to share information on monitoring the global environment.

The government of **Mongolia** emphasises mainly formal environmental education. Basic knowledge of nature, environment and ecosystems is taught on the primary and secondary levels of education. The Agriculture College of Darchan has been training students and providing vocational education regarding land management, ecology and hydrometeriology at the tertiary level. The University of Mongolia incorporates courses on environmental education and research, and plans to have an Environmental Education and Research Centre. The Ministry of Environment consists of research institutes on hydrometeriology, forestry, water management and land management.

The Mongolia Conservation Union and Centre of Nature are involved in non-formal environmental education at the NGO level. The Mongolian Biodiversity Programme and the Plan of Action to Combat Desertification also cover environmental education and awareness activities. The Mongolian government is preparing to develop a master plan for environmental education and awareness, which may cover both formal and non-formal education and communication.

**Indonesia**'s participation in the United Nations Conference on the Human Environment in 1972 in Stockholm formed a background for the establishment of the country's National Committee on Environment. The Committee formulated the plan for the Management of Natural Resources

and the Environment for the Second Five Year National Development Plan (PELITA II). In support of the initiatives contained in PELITA II, the Indonesian Institute of Science (LIPI) initiated informal working groups on various environmental topics. These groups, composed of leading scientists, academics and government officials, convened to define environmental science and planning needs. They served a catalytic function in raising environmental awareness and education over a wide spectrum of interests.

With the establishment of the Ministry of Environment (MOE) in 1978, work intensified on the drafting of the Environmental Management Act. The Act highlights the recognition of the role of public participation in protecting the environment, assigning both the right and the obligation of every individual to do so. It also highlights the importance of environmental education and public awareness. The MOE doesnot include direct responsibility for the development and institutionalisation of environmental education and public awareness programmes; instead, the MOE's main objective has been to ensure that the key agencies deliver such programmes.

The MOE relates horizontally with a number of sectoral departments dealing with environmental issues, and which have responsibilities and mandates in implementing education, training and enhancing public awareness programmes-e.g., the Departments of Education, Information, Agriculture, Home Affairs, Mining and Energy, Tourism, Industry and Health. Provincially, MOE is supposed to interact with the Governors, the Regional Planning Agency and the Bureau of Environment. Although MOE is a coordinating ministry, horizontally and vertically, it does not have the necessary capacity to administer all EE awareness and training programmes. Therefore, the strategy of the Ministry has been directed toward "selling" ideas and concepts to a variety of government departments, private sector and non-government organisations to play a major role in delivering environmental education and awareness programmes. All organisations are expected to include the following priority actions:

- assess training needs to produce a cadre of well-trained environmental professionals and extension staff, and on-the-job training courses;
- strengthen education programmes on environmental issues for environmental professionals, NGOs and the private sector;
- develop and promote environmental awareness programmes for the general public;
- aid in "greening" the curriculum in schools under the jurisdiction of each department; and
- involve NGOs, private sector and local communities in the formulation and implementation of the programmes.

The National Commission for Environmental Affairs (NCEA) of **Myanmar** has been acting as a focal point and coordinating body for environmental education and communication since 1990. The Commission has four specialised committees, including the Committee on Research, Education and Information. Promoting environmental awareness through information and education to foster public participation in environmental protection is one of the key objectives of the Commission.

The NCEA is not yet a statutory body for overall environmental management and education. At present, Myanmar's environmental management pattern is largely sectoral, with each ministry or department undertaking environmental activities related to their sector. The main ministries involved in managing environmental resources are the Ministry of Forestry, the Ministry of Agriculture, and the Ministry for the Progress of Border Areas and National Races and Development Affairs, which have branch offices down to the township level. The NCEA is responsible for coordinating environmental matters of government ministries and departments as well as the private sector. It reports directly to the Cabinet for matters of national importance. The NCEA office works closely with government agencies and provides decision makers with data and information.

In accordance with the country's needs, policies and programmes, environmental education has been established on both the basic as well the level of higher education. At the tertiary level, environment-related subjects have been taught since the 1970s. From 1990 onwards environmental studies have been given more attention both in undergraduate and post-graduate classes. Research work on environmental studies is also carried out in the Universities' Central Research Laboratory. Some training courses are conducted locally, whereas other trainees are sent abroad.

Communication to the public has been carried out through wall posters, daily newspapers, pamphlets, books, magazines and journals. Special highlights for raising public awareness on environmental issues appear in two Myanmar daily papers as well as on radio and television.

### 2.1 Case Study 1: Pakistan Government NCS and Strategy for Environmental Awareness and Education

**The role of communication in agenda setting and policy formulation**

The National Conservation Strategy (NCS) of Pakistan was successfully prepared since the project team was able to achieve a fair amount of political and bureaucratic consensus on such complex topics as sustainable development. It emerged out of an uncommon and very close partnership between the government and a non-government organisation, IUCN-The World Conservation Union, Pakistan.

The NCS is a policy document, the preparation process of which involved over 3,000 people in commenting on the Strategy. Since the initiative taken to formulate the National Conservation Strategy in 1988, communication was acknowledged to be a key in the process.

In the initial stages of preparation the NCS strove to include the viewpoints of not only the wildlife conservationists and environmentalists, but people involved in conventional economic activities that impact on the environment, as well as people from varying strata of society, using a series of workshops, conferences, round table discussions, and research studies.

Moreover, IUCN organised a series of consultative meetings with people from policy level organisations, key NGOs, the private sector, the media, and also the general public that had been ignored in previous policy formulations. In addition, there was a conference on population-environment linkages in the NCS and five workshops that looked at special themes that cut across and integrated several areas of interest.

**An NGO collaboration**

IUCN played an important role in putting environment and the NCS on the agenda of government officials and the public in general. A Journalists' Resource Centre (JRC) for the Environment (now known as the Communications Unit) was set up in IUCN Pakistan. Initially, the JRC raised awareness by creating an information bank on environmental issues that could be freely accessed, and by encouraging the print media to carry environmental news. Most of the NCS process was recorded and issued as printed documents, as was a film on the NCS, 'Greening our Future' that was screened on both the government and private television channels. Interviews with and discussions held by the NCS team were featured on state television and radio. The team also participated in lectures at educational institutions and in seminars.

Besides the public participation process, there was another simultaneous process to build consensus within government on the NCS. This was done through a high-level NCS Steering Committee, chaired by the Deputy Chairman of the Planning Commission. The Committee included representatives from NGOs, the media and the private sector. The Committee had to approve the drafts of every chapter of the NCS. This ensured that the final draft was approved by all the ministries and that the NCS penetrated fairly deeply within government.

**Preparing for implementation : setting up institutions**

Once the NCS document was finished in July 1991, the transition to the implementation phase began almost immediately. Three institutions were created, two within government and one without, following an NCS recommendation that there be a number of mechanisms to assist and guide in the implementation of policy. Hence, the NCS Unit in the Ministry of Environment, Urban Affairs, Forests and Wildlife, and the Environment Section in the Planning Commission, together with the research NGO known as the Sustainable Development Policy Institute, were put in place much before the next phase started in mid-1994.

The Pakistan Environment Programme (PEP), which is the name given to the implementation phase of the NCS, encompasses implementation at the federal level. The provinces were brought into the process by being asked to comment on various drafts of the NCS, but their involvement was limited. The issue of gaining ownership of the NCS in the provinces and building capacity to implement its objectives was a challenge.

**Building provincial policy**

The turning point came at a one-day workshop in August 1991, on how provincial institutions were to build capacity to implement the NCS. The Government of the North West Frontier Province (NWFP) decided to take the lead and develop a provincial conservation strategy. This was the genesis of the Sarhad Provincial Conservation Strategy (SPCS). A new section, the Environment Section, was created within the Planning and Development Department of the NWFP (renamed the Planning, Environment and Development Department) and it took the lead, supported by IUCN, in developing the SPCS.

All the communication learning from the NCS formulation and implementation phase was fed into the Sarhad Provincial Conservation Strategy. From the start the SPCS consciously adopted a two-track approach, formulating a strategy and running a consultative process at the same time. The process had an initial planning workshop in January 1992, an inception report was presented at public meetings in 16 towns and villages, and a further five meetings were held to discuss the feasibility of the recommendations. The process also focused on developing a communication sub-strategy for the SPCS from the start. A Communications Round Table was used to initiate a dialogue between various sectors, who commented on the communications sub-strategy, and its members were asked to participate in implementation. Since the literacy rate in the North West Frontier Province is quite low, non-formal mediums were also explored.

**Communication to implement policy**

If the NCS was to be more than a policy on a shelf, an effective communication process was essential to implement the policies. The participative process in communication had to be continued and accelerated. In September 1992 a small group drafted a communications strategy based on priority issues highlighted in the Strategy. The approach emphasised the importance of communication as a two-way street - that understanding the knowledge and perceptions of people and developing some feedback before embarking on a communication programme is essential. The draft was presented before a larger group in March 1993, followed by eight small workshops in December to develop communication planning frameworks for each of the 14 core areas of the NCS.

Awareness raising was one of the four key areas the Pakistan Environment Programme (PEP) carried over from NCS to its implementation phase. The NCS Unit has involved IUCN and other NGOs and institutions in the planning of a Mass Awareness component in the World Bank-funded Environmental Protection and Resource Conservation Project.

**Lessons Learned**

A whole range of communication instruments have been used in promoting the NCS such as public relations work, awareness raising, information dissemination, skills training, and advocacy. While everyone agrees that a communication process that is open, participative and transparent will be successful, communication is too often still seen as a means (posters, television spots) rather than a process. The idea that communication has

different roles for government and NGOs, and the changing role of communication in different phases of the policy cycle, are also issues that are often not well understood.

Policy makers may have accepted communication as being important to the success of a strategy, but they do not always understand how this should be done. Hence, communication remains on the margins of policy making. Communication still has to play a role in implementing policy.

Government units are staffed by professionals who may have a limited awareness of these issues. They may not have specialised understanding of communication or, given the government system, any incentive to learn. In addition, frequent changes and turnover of the staff responsible for the project often disrupts communications. With each change of staff, the briefings on and the understanding of communications has to be started all over again.

The Strategy includes the following policy statements about communication and education, and attempts to achieve these ends:

- gear environmental communication to specific audiences, messages, and media;
- make sustainable development a national communication priority of the government;
- mobilise forces within the conventional media and beyond to communicate greater environmental awareness and concern;
- make communication on these issues a priority in institutions;
- focus on sustainable development in the entire system of formal education and at all levels;
- adopt a holistic perspective of EE;
- centre sustainable development education on practical problems relating to the student's immediate environment;
- aim at instilling an ethic of conservation;
- let education on sustainable development grow from within the existing system rather than be added to it;
- launch comprehensive non-formal education programmes to reach that large segment of the population not now reached by education because of either poor access or literacy problems; and
- incorporate sustainable development issues into all relevant non-formal education programmes.

**Awareness and education strategy**

To develop a strategic plan for environmental education and awareness, the Ministry of Environment, Urban Affairs, Forestry & Wildlife (MEUAF&W), Government of Pakistan, held a consultative process and assessed the state of environmental awareness and education. Two workshops were held, one in Islamabad for participants from Islamabad, NWFP, Punjab and AJK (Azad Jammu and Kashmir) Provinces, and another in Karachi for participants from Sindh and Baluchistan Provinces. The participants included representatives from provincial Environmental Protection Agencies (EPAs); the Ministry and Departments of Education;

Ministries of Information, Health, Planning and Development; and from NGOs, including in particular IUCN-The World Conservation Union, Pakistan, World Wide Fund for Nature (WWF) and the Sustainable Development Policy Institute (SDPI). The outcome of these workshops served to inform the development of the draft version of the Strategy for Environmental Awareness and Education which was circulated amongst the workshop participants, senior staff of the Ministry, and other relevant organisations and individuals for their comments.

The final version of the Strategy thus represents the views of a wide range of people, all of whom work in the field of environmental awareness, communication and education. The Strategy highlights the key questions that need to be asked during the planning process and suggests a logical step by step approach which can be adopted for most situations. It is hoped that the document will provide a practical guide for all sectors of society in the planning, development and implementation of environmental awareness and education activities for the present and future. However, it must be stressed that it is not a final version. The Strategy is not something static, but rather a living, working document to be continuously revised, amended and improved. It has been recommended that there should be a regular review of the Strategy to identify points of strength and weakness and opportunities for innovation. The Strategy does not provide an action plan. It lays the foundation for the development of short, medium and long-term action plans which should be undertaken at the different levels, i.e., national, provincial and community and for each institution, organisation, and agency. The Strategy should also provide the opportunity for all sectors, institutions, organisations, agencies and individuals to identify their own role and place within the arena of environmental awareness and education. Short to medium-term objectives of the Strategy have been defined. They have been set out in the planning process as a sequence of activities given below in seven steps. It is hoped that by considering the objectives in this manner a structured approach can be adopted which will maximise the opportunities for monitoring and evaluation.

**Step 1: Identifying and prioritising the environmental issue.**
**Criteria for prioritising**
A set of criteria is required to ensure that environmental issues are identified and prioritised in a systematic and logical manner. The following criteria have been used by the MEUAF&W:

a. the extent of the gravity of the problem;
b. national coverage of the problem;
c. impact of the problem on human health;
d. the relationship of the problem to the NCS core areas.

**Focus**
It was also recognised that it would be useful to identify specific areas on which to focus. This focus would help to clarify objectives which can be monitored and evaluated. Distinctions could be made along the following lines: rural/urban; gender; community priorities; local/regional/district specific; green/brown issues.

**Step 2: Identifying institutions, organisations, agencies, groups and individuals who can provide technical details.**
In the development of environmental messages which will form the content of the environmental awareness and education programmes, it is essential that they be technically correct. In order to ensure this relevant institutions, organisations, agencies and individual experts will be consulted to give advice and information on the issue being tackled.

**Step 3: Identifying the target audiences for each priority area.**
Using the problem tree analytical process, target audiences should be identified from those groups who are responsible for causing the environmental degradation, and also from those groups who are directly or indirectly affected by the degradation.

Problem Tree Analysis is a useful tool for the identification of environmental problems, their causes and possible solutions. It also assists in identifying who is responsible for the environmental damage and who suffers from the damage. Thus it highlights who should be the target audience for any awareness and education activity. Use of the Problem Tree is most effective when applied within a group using full participatory techniques.

The trunk of the tree represents the problem. The causes of the problem are negative actions and form the roots of the tree. Positive actions which redress the balance and form possible solutions to the problem are the branches of the tree. Having identified the cause of the problem it should then be possible to recognise those attitudes and habits that have contributed to it. From this it should then be possible to identify the change in attitude or action that is desired for more environmentally sustainable practices.

**Step 4: Identifying the environmental message.**
**Research**
Having identified the priority environmental issue, the target audience and the required change in attitude and behaviour, it is then necessary to carry out research. Before designing any awareness or education programme, it is necessary to know and understand people's current thinking on the given environmental issue. Research must be undertaken to find out:

a. what do the people already know;
b. what are their perceptions;
c. what are their attitudes;
d. what are their values;
e. what are their beliefs;
f. what are their customs; and
g. what would be the most appropriate and effective tools of communication.

**Identification of messages**
Having identified the problem, the causes and the required change in behaviour and attitude, and having researched the current knowledge,

attitudes and practices, an appropriate environmental message can be designed. The message should be based on the existing knowledge of the audience and should also be designed in consultation with that audience. The message must be technically correct and must relate to the prevailing norms of the community.

**Step 5: What communication channels should be employed.**
It is important that the most appropriate communication channels should be chosen for each target audience. Consideration must be given to:

a. the language;
b. the level of language;
c. the level of verbal literacy;
d. the level of visual literacy;
e. to whom or what medium does the audience attach most respect;
f. the preferences of the audience;
g. through what medium does the audience traditionally obtain information or guidance;
h. the importance of and need for enjoyment and entertainment;
i. the level of motivation to participate; and
j. the opportunity for feedback and interaction.

Experience has shown that the use of a variety of different channels to disseminate the same message is most successful. The Ministry of Health has carried out several communication and education programmes which they have monitored and evaluated. Their own conclusions were that the use of the electronic and print media alone was not effective. The use of interpersonal communication techniques was a vital link in the success of their programme.

**Interpersonal communication**
Suggested channels for interpersonal communication include:

a. traditional opportunities for group discussions such as:
   i. workshops and seminars
   ii. round tables
   iii. focal points
   iv. lectures
   v. community meetings
   vi. letters
   vii. partnerships between groups with similar interests and agendas
   viii. extension programmes;
b. community environmental action groups;
c. environmental clubs;
d. theatre/street theatre/puppetry; and
e. through the mosques and religious leaders.

**Electronic media**

a. Radio is a powerful media reaching most parts of the country, through most local languages. "Radio is particularly instrumental in reaching the two largest and pivotal audience groups. First, it can influence subsistence users of natural resources, ..... And second, radio can reach a

majority of women - the repositories of values, the managers of water, forests and fuel, and the processors of subsistence agriculture - who have to bear the burdens of dwindling resources." (NCS Document p. 254.) It offers the opportunity for feedback through question and answer sessions and field interviews;

b. use of the TV has a strong influence in the urban areas and amongst the middle class especially the women who stay at home;
c. cinema is popular amongst certain groups in society.

**Print media**

The use of newspapers in both English and local languages is limited to the small percentage of the population who are literate. It is, however, a useful and powerful medium for communicating with senior decision-makers who may not have time for other activities. The use of posters and pamphlets has limited impact. They should be used as support material for more participatory activities.

**Step 6: Institutions, organisations, agencies, groups to be involved.**

The issues relating to the environment cross all boundaries: social, cultural, economic and geographical. The environment is not and cannot be the sole responsibility of one sector, one discipline, one institution, group or organisation. Responsibility for the protection of the environment and the country's natural resource base lies with the whole nation.

It is understood that the Ministry of Environment, Urban Affairs, Forestry and Wildlife cannot work alone. It needs to be supported by all other sectors, each playing their part within their own spheres of operation.

a. The Ministry of Health by promoting environmental health through its health education services, mother and child programmes, and other extension activities;
b. The Ministry of Education by incorporating environmental education into the curriculum of schools, colleges and teacher training institutions and through the development of an environmental education strategy and action plan;
c. The Ministry of Food and Agriculture by promoting sustainable agricultural practices and soil management techniques through its extension services and other programs;
d. The Ministry of Local Government and Rural Development by promoting the development of local environmental action plans (Local Agenda 21) and supporting local environmental committees;
e. The Ministry of Defence by integrating the armed forces into the national environmental awareness and education programme. They can exert an important influence on communities. They can provide support and manpower for large-scale activities; and
f. The University Grants Commission by promoting environmental education at the tertiary level. In particular, they should examine the possibility of including EE into the curriculum of the Civil Service Academy, NIPA, Armed Forces Academies and Islamic Universities.

Outside of the governmental sector, the following institutions, organisations, agencies and groups also have important roles to play:

a. non-governmental organisations (NGOs), community-based organisations (CBOs) & village organisations (VOs);
b. politicians/parliamentarians;
c. "ulema" (religious scholars);
d. Maliks and Khans;
e. media;
f. Chambers of Commerce and industries; and
g. professional associations.

**Step 7: Monitoring and Evaluation (M&E).**
Monitoring should be an ongoing activity with regular evaluation. Effective communication to raise environmental awareness lies in giving out information and receiving feedback to assess how the information has been understood and acted upon, if at all. It is important to know how effectively the message has been conveyed, to know what message was received as opposed to given, and to recognise what changes need to be made.

From the above process, it was realised that the first step must be to prepare a strategy which would provide a framework within which all activities would be developed. The objective of strategic planning of environmental education and awareness was to:
a. plan and design environmental awareness and education activities in a systematic and comprehensive manner;
b. reduce the current practice of *ad hoc* activities in reaction to unplanned events, which are not strengthened or supported by being part of a wider comprehensive programme with clearly defined goals and objectives;
c. expand the current practice of mass awareness activities which are limited to a flow of information and publicity and not on social mobilisation, community participation and behavioural change;
d. identify the target audience, and effective means to reach them;
e. identify potential partners, individuals, groups, organisations and institutions to be involved in planning and promoting environmental awareness and education; and
f. establish a system for monitoring and evaluation.

The role of the MEUAF&W in providing a mass awareness and education programme needs to be clearly understood. It does not have the capacity to implement mass environmental awareness and education activities, nor does it have the appropriate expertise. Implementation should be handled by those sector agencies or organisations with the relevant expertise and mandate. For example, activities to promote environmental education in the school system are best dealt with by the relevant sections of the Ministry or Department of Education. The role of the MEUAF&W should be to sensitise the Ministry of Education to the need for environmental education and to provide support in the form of informational newsletters, fact sheets, or participation in seminars and workshops.

The Ministry has a key role to play in providing clear policy guidelines and facilitating others to carry out environmental awareness and education programmes and activities. Its role has been defined as:
a. providing a clearly defined focus for mass environmental awareness and

education programmes and activities;
b. identifying and prioritising national environmental issues (both green and brown, urban and rural);
c. informing all sectors of the environmental issues facing Pakistan and the international community; and
d. providing Ministerial legitimacy, authority and visibility to environmental messages and environmental awareness and education activities.

Many of the activities outlined in the Strategy have only recently been initiated, and some have not yet been started. There has been no time to monitor or evaluate many of the ideas contained in the Strategy, but it is hoped that some success will be recorded. It is only through continuous monitoring and constructive evaluation that any sustainable progress can be expected.

## 2.2 Case Study 2: Government Strategy in Hong Kong

*"If people are the main cause of environmental problems then presumably these same people can at least make a substantial contribution to the cure. The notion is the driving force for a wide range of activities carried out to improve community awareness and understanding of environmental issues* - Government of Hong Kong

**Issues in environmental protection**

Pollution problems in Hong Kong are similar to those encountered in most comparable urban areas elsewhere in the world. Aspects that have given rise to public concern include: emissions from motor vehicles and industries; various water pollution black spots; and the continuing need to satisfactorily dispose of the large amount of non-reusable or recyclable sewage and solid waste generated by the community.

Every day our community generates:

- 8,500 tonnes **garbage** (equivalent to 515 double-decker buses);
- 2,800 tonnes of **paper** (equivalent to 48,000 trees);
- 15 million **plastic bags** (equivalent to 25 buses);
- 2.2 million cubic metres of **waste water** (equivalent to 1,100 Olympic swimming pools); and
- 15,000 tonnes **construction waste.**

In addition, about 1 million people suffer from excessive traffic noise, another 0.5 million suffer from aircraft noise, and about 3 million people suffer from bad air quality.

**Strategy to tackle pollution problems**

In response to these concerns, a comprehensive and closely integrated programme has been developed over the past decade. It comprises five complementary elements: environmental planning to avoid creating new problems in the future; statutory pollution controls and their enforcement; provision of facilities and services for the collection and disposal of waste generated by the community; environmental monitoring to support policy development; and an environmental awareness programme aimed at improving the community's environmental ethic.

**Environmental education policy**

The first comprehensive policy paper (White Paper) on environmental protection for Hong Kong was published in June 1989 to explain the main problems and set out a comprehensive plan for tackling them over the next

10 years. The first review of progress on the White Paper was published in June 1991, the second in December 1993, and the third in March 1996.

The overall policy objectives for environmental education are:

- to make our community, including specific sectors of the community, aware of their responsibilities in creating and maintaining a healthy and pleasant environment;
- to encourage the development, through the formal education system, of a well informed, environmentally aware and responsible community; and
- to make professionals concerned with development, i.e., the decision-makers, more aware of the implications of their decisions on the environment and the health and welfare of our community.

**Evolving strategy and tactics in environmental awareness raising**

Environmental education and awareness efforts rest primarily on urban pollution problems in Hong Kong. While the formal side of environmental education is well established, active community environmental education has only started in 1990. The awareness of the community regarding environmental education has been improved, but the Hong Kong government believes that the long-term solution to pollution problems rests with a much improved community environmental ethic, which is yet to be achieved.

The public education strategy has evolved in accordance with experience and the phases of policy. To put environmental issues on the agenda during 1990 to 1992, when the level of awarenes was low, shock tactics were employed-e.g., through media, to highlight the seriousness of the environmental pollution in the community. This was followed by a period of positive reinforcement to encourage behavioural change for the benefit of th individual as well as the community. This is an ongoing programme

Feedback from a 1993, territory-wide "Community Attitudes Towards Environment" survey gauged the level of public awareness and helped formulate the way forward for the future. Since then, greater emphasis has been placed on action-oriented programmes in addition to awareness-building.

The environmental awareness-raising strategies employed by the Hong Kong government were reviewed in 1994, and multipliers were enlisted to provide a more cost effective and efficient way to raise awareness. Training, seminars, guidelines and handbooks were provided for teachers and community leaders. In addition, the emphasis was also placed on partnerships between government, NGOs, corporations, private companies, schools, community organisations, the press and other media, and international organisations.

Popular figures such as celebrities, top pop singers and movie stars were enlisted as environmental protection ambassadors to preach protection of the environment. Moreover, NGOs have been actively making their own contribution to promote environmental education and awareness, including

the World Wide Fund for Nature (Hong Kong), Friends of the Earth, Conservancy Association, Green Power, Marine Society conservation and Green Lantau Association.

The creation of popular catch-phrases or slogans, such as "Environmental Protection Starts with Me." was very successful. A recent survey conducted by the University of Hong Kong under the auspices of the Environmental Campaign Committee (ECC) revealed that about 85 percent of the respondents were aware of this slogan.

In terms of formal environmental education, the Education Department has introduced environmental topics in the Advanced Supplementary Level syllabus. Over eight institutions are now offering formal environmental courses to train Hong Kong people to help in environmental protection.

**Milestones in Environmental Education in Hong Kong**

1989 Noting the low level of environmental awareness in Hong Kong and negligible investment by the government (only $0.4 million between 1984 and 1989) for awareness raising, the 1989 White Paper outlined policy objectives for environmental education to cultivate well-informed, environmentally aware, responsible citizens.

1990 The Environmental Campaign Committee (ECC) was formed with a mandate to raise awareness. The ECC coordinated three regular annual events: the World Environment Day, the Schools Environmental Award Scheme, and the Environmental Protection Festival. A monthly bulletin "ECCO" dedicated to environmental protection was published. The Environmental Protection Department (EPD) also published, with funding from the Jockey Club, the first secondary school environmental teaching kit, the "Anti-Pollution Pack," with worksheets, slides & video.

1992 The EPD set up a Community Relations Unit dedicated to improving public awareness and harnessing their support for environmental conservation. The Unit carries out a wide range of activities to provide assistance to private environmental committees and organisations, including giving talks and lectures; attending meetings of Green Management Committees; serving as advisors and adjudicators of community environmental programmes such as those organised by YMCA, Junior Chambers of Commerce and Rotary Club; and contributing to publication of environmental materials such as the environmental handbook of the Curriculum Development Institute, among other activities. The EPD published a set of "Guidelines on Environmental Education in Schools" to provide schools with ready reference in environmental education. The ECC also published a primary school environmental teaching kit - "Let's Make It a Greener World"- with worksheets, video and posters. The Friends of the Earth published a Preschool Children's Teaching Kit. The World Wide Fund for Nature Hong Kong (WWF HK) developed a number of teaching aids on conservation for schools. The first annual "Business and Industry Environment Week" was launched in March by the Private Sector Committee on Environment.

1993 The ECC conducted a territory-wide survey on "Community Attitudes towards the Environment,". The results showed a big improvement in awareness of environmental problems. However, the survey also revealed a big gap between awareness and taking positive action to protect the environment. Education and communication were felt to be the keys to bridge this gap. The EPD opened the first Environmental Resource Centre at the Wan Chai Old Post Office which has been a gateway to global and local environmental information. The Centre provides a range of services to the public including guided visits. Five more regional Centres are being planned for the near future.

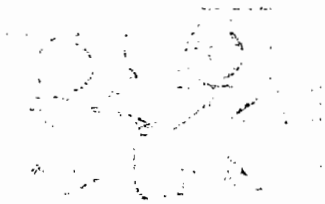
| | |
|---|---|
| 1994 | The EPD opened a Visitors Centre focusing on the work of the EPD in combating and pre-empting pollution problems. The Government set up the $50 million Environment & Conservation Fund to support environmental awareness, education and research projects. Meanwhile, the HK$50 million Woo Wheelock Green Fund has also been set up by a private corporation, setting an example for private sector contributions to environmental protection and education. The Caltex Green Fund, OTB Green Fund and Shell Better Environmental Award Scheme showed their corporate commitment by continuing their sponsorships to environmental programmes organised by schools, green groups and community organisations. |
| 1995 | The ECC launched the Student Environmental Protection Ambassador Scheme which attracted overwhelming support from about 220 schools. This emphasis has changed from school-based activities to student-based activities which are planned, led and implemented by student ambassadors of their respective schools. The ECC also carried out the second "Community Attitudes to the Environment" survey and found some environmentally friendly practices-e.g., energy conservation and green consumer behaviour-being carried out by the community. The gap between taking positive actions and awareness of environmental problems still remains to be bridged. |
| 1996 | The EPD produced a video on the state of the environment of Hong Kong and on tips to improve the environment as responsibile individuals. It is also updating the secondary school "Anti-Pollution Pack" and expects to make it available to schools and all public libraries in 1997. Owing to the success of the Wan Chai Environmental Resource Centre (ERC), the second ERC will be opened in Tsuen Wan by the end of 1996. The Centre will be managed by a community environmental group through a contractual arrangement. |

## 3. Implementing Environmental Education Strategies in Formal Education

The formal education system provides a good framework for reaching a large segment of the population and can help make future generations conscious of the importance of environmental conservation. Young children are receptive and curious about the world, making this an appealing group to motivate to take action for the environment. However, this assumption may not be true and depends on the way education is carried out. Learning facts for examinations may not instill any public-spirited action for the environment. Practical approaches that involve students in solving local environmental problems have more influence, develop skills and give reinforcement to the idea that people can make a difference.

Most Asian countries have made efforts to introduce environmental education into primary, secondary and tertiary education with varying success. The approaches used at the pedagogical level have included making environmental studies a separate course, or incorporating environmental education (EE) into existing curricula at primary and secondary levels, or using a combination of both approaches. Primary level education is the main focus of attention because of the inherent flexibility in curricula to infuse environment into existing subjects and the higher level of enrollments in primary schools compared to secondary school. NGOs and universities in some countries play a big role in teacher training, and providing materials for formal education.

Prerequisites for the successful introduction of EE in schools are: clear and well-communicated policy for EE; the will and resources to implement it; curricula revision; proper preparation of teachers and provision of in-service training; provision of relevant materials in local languages; networks for



teacher expertise exchange; and assessment and incentives for teachers.

**Maldives**

Environmental education and awareness programmes of the Maldives emerged from the National Environment Action Plan of 1989. While recognising the importance of environmental awareness among the entire population in order to provide adequate care for their shared environment, the Action Plan emphasised primarily the promotion of environmental education in schools. However, the production of public awareness materials and the mounting of public awareness campaigns concerning sensitive aspects of the natural environment was stated as an integral component of all activities that will be undertaken in implementing the Action Plan.

Environmental studies was introduced as a subject in the primary schools based on the National Curriculum for Primary and Secondary Schools developed in 1984. In 1980 a policy decision was taken to revise the national curriculum. The new curriculum was developed with the objectives of making education more relevant to the local environment, harmonising the whole curriculum, setting minimum learning competencies for each grade, and improving and replacing some of the foreign textbooks. The work was carried out by the Education Department Centre, and active participation of teachers helped. However, a number of deficiencies were found in the content and the teaching approaches in the environmental studies course.

The syllabus was further revised in 1990 to make environmental studies more relevant to the local environment by incorporating current local environmental issues together with the teaching of science skills.

The aims of the present syllabus of environmental studies include:

- to help students develop the skills necessary for investigating, identifying and solving environmental problems;
- to help students acquire cultural/social values and a strong concern for the environment;
- to help students acquire an awareness of and sensitivity to the environment;
- to help students develop a basic understanding of the environment and its inter-relationships and complexity; and
- to acquire motivation for active participation in environmental improvement and protection.

The present syllabus has been developed for grades 1-5 and is divided into five main units: the earth, the people, living things, interdependence and the changing world. Each unit is sub-divided into a number of related topics, designed to teach through student-based activities. This syllabus is developed with the intention of helping teachers move from the traditional method to the activity-based method. The teacher's guide, pupil's book and resource reference materials were produced for teaching environmental studies at grades 1, 2, and 3 in 1994, 1995 and 1996, respectively. The books and material for grade 4 is planned to be introduced in 1997 and for grade 5 in 1998. The supplementary resource kits were prepared with the financial

assistance of UNICEF and the rest of the costs were borne by the government of the Maldives. Environmental Studies plays the introductory role for the General Science and Social Studies courses taught in the Middle School.

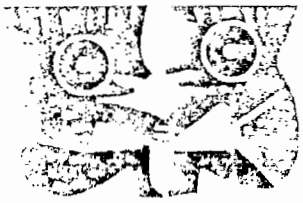
At the secondary school level a remarkable achievement has been the introduction of "Fisheries Science" as an educational discipline which is approved by the external examining board at the University of London. The syllabus was designed with a view to providing students with a basic knowledge and understanding of marine sciences, equipping students with necessary analytical skills and knowledge to be able to understand and evaluate the biological, economic and social issues associated with the human use of the marine environment in the Maldives, and creating a greater interest in the fisheries industry which is vital to the economy of the country. However, this course is optional and because the core secondary curriculum is based on London GCE subjects with a British syllabus it does not provide students with adequate information on the local environment. There is a need to introduce a new subject on the local environment which is multidisciplinary, provides basic knowledge and understanding of small island ecosystems, and local and global environmental issues. This should also provide analytical skills for environmental problem identification and evaluation, and create an interest in environmental improvement. To advance the knowledge provided at the primary level, environmental education at the secondary level needs to be given urgent attention to make the youth more responsible to the environment, and guide them towards sustainable lifestyles.

**Nepal**

To plan the implementation of the Nepal National Conservation Strategy policy on education and awareness, a review of formal and non-formal education curricula, textbooks and associated materials was undertaken. The review showed that no courses or topics on EE were being offered in any form or at any level of education. Based on this review, a National Conference on Environmental Education in 1991 considered draft National Environment Education Guidelines, which then became a consensus policy document. The Conference, by involving key high level policy-makers, curriculum developers, educators, trainers, and NGOs, sensitised participants to the importance of awareness about environmental issues and concerns, and the need to develop conservation measures.

The National Commission for Education (1992) recognised the need for EE at the school level and recommended the introduction of new subjects at the primary, lower secondary and secondary levels. The Eighth Plan (1992-1997) also includes policies and programmes on the incorporation of EE into formal and non-formal education programmes.

The Ministry of Education has translated national policies and popular desires into school level curricula and textbooks. At the primary level (grades 1-5), model curricula and resource materials were prepared for the incorporation of environmental components (in the Nepali language), and materials were tested in collaboration with the Basic and Primary Education



Project of the Ministry of Education. These are used as the basis for revising the primary curriculum.

The National Council for Curriculum Development, which is chaired by the Minister of Education, has recently approved a new set of subjects, including EE, for primary and secondary levels.

One of Nepal's national goals of education is to teach thoughtful protection and wise use of the natural environment and national heritage. Hence, environmental education is taught in the first three primary grades in an integrated manner. A textbook entitled *Mero Serophero* (My Surroundings) links environmental concepts with health, social studies and science. A separate course entitled *Batawaraniya Bigyan tatha Swasthya Siksha* (Environmental Science and Health Education) has been introduced into the fourth and fifth grades.

The model curricula, textbooks and resource materials prepared with technical assistance from IUCN have helped in preparing the new textbooks for the primary school level. Preparation of curricula and textbooks for this level of education is now complete.

At the lower secondary level (grades 6-8), a course entitled *Janasankhya ra Batawaran Siksha* (Population and Environmental Education) has been introduced. At the secondary level (grades 9 and 10) the subject is called *Bigyan ra Batabaran Siksha*, and it is offered as a compulsory subject. For these two grades one more course, *Batabarniya Bigyan* (Environmental Science), has been introduced as an optional subject.

Nepal's educational system is centralized. The same curricula and textbooks are used by all public schools throughout the country. Private school students also appear in the same national level examinations as public school students. However, most private schools prescribe their own curricula and textbooks in addition to following the national curricula.

At the higher education level IUCN is working with the Faculty of Education of Tribhuvan University in preparing teacher training curricula and resource materials for prospective secondary school teachers. The FOE will be introducing a three year Bachelor of Education programme beginning in August 1996. Curricula for two courses on EE for this programme have been prepared. A source book to help teach these courses is also being prepared.

Some lessons can be derived from Nepal Curriculum Development Centre's (CDC) experience of developing new curriculum and textbooks on EE.

1. Compared to other subjects, Population and Environmental Education is a more interesting subject to both students and teachers. Many students read the entire textbook as soon as they receive it. Teachers also have testified that the book is interesting and relatively easy to teach.

2. It pays to follow a systematic procedure in developing curriculum and textbooks for a new subject such as population and environmental education, especially with technical assistance from an international organisation like IUCN. This assistance has not only helped to develop

model curricula and textbooks in one subject, but a spillover effect is felt in similar exercises for other subjects as well. CDC staff have benefited from the experience of working with experts from the National Conservation Strategy Implementation Project (NCSIP) and the Curriculum Development Committee.

3. For field testing and subsequent teaching of population and environmental education, in the absence of qualified teachers, science or social studies teachers can do a good job. However, all teachers need orientation training to familiarise themselves with the theories and practices of EE.

4. Centralised national curriculum textbooks should be supplemented with educational materials specific to different geographic regions or communities.

5. Student activities for EE teaching should be planned with regard to practicalities. With the cooperation of fellow teachers and school headmasters, such activities should be made mandatory.

6. Field testing has shown that teachers function more effectively when there is regular monitoring and supervision of their teaching. CDC lacks a separate cell for EE, and the need for such a cell is strongly felt, in order to carry out monitoring and evaluation of programme implementation and to coordinate other relevant activities.

**Malaysia**

Towards the end of the 1980s, the Ministry of Education of Malaysia embarked on a National Environmental Education programme to create environmental awareness among all school children. It was decided that environmental education elements should be infused across the school curriculum rather than taught as a separate subject.

The elements of environmental education across the integrated primary and secondary school curriculum have been mapped out and are grouped under the following headings: God is the creator of the Universe and all creatures; the earth, moon and the universe; non-living things, natural resources and energy; living things and their environment; interaction between people and their environment; and the need for proper environmental management for sustainable development. No formal textbook on environmental education has been developed and materials are limited. The Ministry of Education has prepared a primary school teacher's guidebook on *"The infusion of environmental education elements across primary school curriculum,"* and one for secondary school. Schools are encouraged to set up environmental learning stations in the school compound on topics such as soils, plants, recycling, crop plants, and uses of energy.

The Department of Environment, in collaboration with the Ministry of Education, has obtained the help of the Malaysian Academy of Writers to write storybooks to inculcate environmental values and attitudes amongst primary school children. Moreover, in an effort to continually improve the standard of teaching, resource people and education staff are sent to various

## How the Nepal Secondary Population and Environment Education Curriculum was developed?

**Policy issue**: Annual population growth rate of 2.1 % is a cause of concern and puts pressure on natural resources and development infrastructure.

| Strategy | Tactics |
|---|---|
| The Ministry of Education requests assistance to develop a secondary school course on Population and Environment | Cost sharing by Ministry of Education and NCSIP for printing of texts |
| Curriculum Development Committee set up includes<br>• CDC specialists<br>• NCS Implementation Project Team members<br>• Tribhuvan University<br>• IUCN Secretariat | • review of literature on population and EE<br>• general objectives for population and EE<br>• grade specific objectives<br>• content |
| National Planning Workshop to review draft curriculum | • representatives from different districts<br>• curriculum developers<br>• population education experts<br>• environment experts |
| • Prepare draft texts<br>• Review by Committee<br>• Revise text | • Writers solicited by advertisement<br>• Artwork /Layout IUCN |
| Pre-test in eight schools in different districts | • teachers oriented to course<br>• students given pre & post test<br>• lesson evaluation forms<br>• monitor progress<br>• demonstration classes by supervisors |
| Revise text | based on field experience:<br>• two week workshop to review content and exercises<br>• geographical and cultural variation in country accommodated |
| Textbook distributed nationwide | • publishing house prints and distributes to bookstores<br>• students buy texts |
| Constraints: variation in words and concepts in different parts of the country; teachers not trained in course; language teachers assigned course because of lower load; distribution of texts late; activities outdoors seldom done because of class size and short lesson periods; some teachers offended by content. | |

conferences on EE locally and abroad. The Ministry has set up a National Environmental Education Centre (NEETC) to train resource persons who operate as multipliers by training people at the local level.

**Environmental Education Training Centre-Malaysia.**
The National Environmental Education Training Centre (NEETC) at the Aminuddin Baki Institute (IAB) advocates and trains manpower on environmental education and communication in Malaysia. The NEETC uses a model primary school and the natural forest in the grounds of the Institute as its training centre to conduct in-service teacher training on environmental education. The Centre is also used by other institutes to conduct their own training of teachers.

The resource persons who have been trained at NEETC then conduct in-house training and set up environmental education centres in their own schools. They then progressively conduct in-service training at the state and district levels using schools as the training centres. This has a multiplier effect. Topping-up courses are regularly held for the resource persons. Currently, the total number of resource teachers trained on the subject is about 210. Efforts are now being made to introduce EE into the formal curriculum of all the 33 teacher training colleges in the country, while the Centre is used for pre-service training.

The other departments of the government also have environmental education components in their training modules. The Forest Research Institute of Malaysia has its training centre and trains teachers. Likewise, the Fisheries Department, the Department of Environment, WWF Malaysia, Malaysia Natur Society and others also have their training institutes to teach about the environment.

## 4. Fostering Partnerships to Achieve Environmental Policies

### Philippines

The Philippine government has pursued environmental education and communication as a means to conserve biodiversity in protected areas. The government is using both formal and non-formal education and communication to raise awareness and bring in the community as potential and effective partners for biodiversity conservation and sustainable development. The Protected Areas and Wildlife Bureau (PAWB) of the Department of Environment and Natural Resources (DENR) is implementing an innovative strategy called the *Dalaw-Turo* (DT), which literally means "visit and teach in schools and communities." DT is a non-formal, non-traditional, participatory and educational communication design of teaching, adopting multimedia schemes. Target audiences include the regional DENR personnel, school teachers and pupils, local residents in and around protected areas, policy makers and other stakeholders. DT has to build partnerships with concerned institutions in all of the 16 regions. Hence, the *Salin-Turo* Trainers Training (DT technology transfer) programme has also been introduced to complement and sustain it at the regional level.

The principles of biodiversity and conservation values of protected areas and wildlife resources were translated into the simple but interesting medium of communication forms, disseminating information through skits and role playing, guiding nature walks, playing environmental games, audiovisual lectures and creativity workshops, and providing training, thus educating varied audiences from urban and rural communities. The DT approach has

*"In planning our educational strategies for the future, institutional collaboration must be given high priority. Linkages with government departments, educational institutions, national parks and nature reserves, zoos, museums etc. can be important partners in organising educational programmes. It is also necessary to consider partnership with academic and professional institutions for the capacity building of environment educators. Educators need to be exposed to the work that their counterparts do in other locations within and outside the country."* - WWF India



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greatly encouraged the involvement of school students, teachers and local residents living around protected areas. Raising public awareness on biodiversity and the provision of the National Integrated Protected Areas (NIPAS) law through the Dalaw-Turo has been received with enthusiasm.

The Dalaw-Turo is a "visit and teach in schools and communities" programme run by the Protected Areas and Wildlife Bureau of the Philippines. Street theatre is one of the means of conveying environmental messages to the communities around protected areas so as to engage them as partners in management.
Photo: Dalaw-Turo

Dialogue with local residents raises environmental issues and problems related to the protected area and natural resources.
Photo: Dalaw-Turo

The Salin Turo trainers' training transfers the Dalaw-Turo approach so that efforts can be sustained at the regional level. Here, trainers are being involved in physical activity to revitalise their minds during one of the courses.
Photo: Dalaw-Turo

**Some obstacles and criteria for managing successful partnerships.**

**Seven obstacles to partnership:**

1 lack of trust in all levels of government;
2 loss of identity by some partners;
3 loss of credibility with local communities;
4 lack of continuity
5 inequality between the parties;
6 compartmentalisation within the community; and
7 bureaucracy

**Ten guiding criteria for success:**

1 there must be open, timely and adequate information;
2 the actors must be deeply involved;
3 the stakeholders and partners must be representative of the groups within the community and have legitimacy;
4 the participants must be sure that they will not be put at risk through participation;
5 there must be money to help those with limited resources to participate equally;
6 there should be independent facilitation, and agreements reached should be recorded;
7 participation must be voluntary, and tasks assigned clearly;
8 representation must be balanced;
9 there must be transparency and accountability;
10 partners must have the right to dissent and, if necessary, to withdraw.

*Holdgate, 1996*

In about two years time since its implementation, *Dalaw-Turo* was able to reach out to some 16,000 elementary and secondary students in the different primary and secondary schools in the country. About 228 teachers and 200 *Salin-Turo* regional counterparts were taught the DT. Friendly dialogues with local residents, including local officials, living around protected areas opened up opportunities for learning about their problems and important issues, thus helping the concerned government agencies to address them.

Environmental Education and Communication (EEC) initiatives in coastal area conservation in the Philippines stemmed from two major programmes of the Department of Environment and Natural Resources. The Coastal Environment Programme (CEP) and the Fisheries Sector Programme (FSP) were launched in 1993 and 1994, respectively. The programmes were undertaken in collaboration with the Department of Agriculture, local government units and non-governmental organisations.

*"EE can be planned strategically. Various parties play a role in EE processes, and each party has its own objectives. A government could, for example, wish to preserve the biodiversity in its country, whereas a community needs enough wild game for its traditional hunting practice. Such objectives can be complementary. Through an EE programme different parties can be stimulated to assist and support each other. In combining the mutual interests and strengths of different organisations, forces and skills are united."- van Ekmert et al., 1995*

The programmes aimed at: (1) coastal resources conservation; (2) community empowerment; and (3) effective partnerships among stakeholders and other sectors. The education and communication initiatives were undertaken by the DENR and non-governmental organisations to support community organising processes. The initiatives consisted mainly of training, community assemblies, production and distribution of EEC materials, radio programmes and home visits. The EEC and community organising process were preparatory interventions for eventual transfer of coastal resources management to the communities under a 25 year stewardship agreement.

The EEC was managed either through the regional programme management of DENR or through other assisting organisations. In the latter case, the agency provided the necessary collaboration in monitoring and evaluation.

There have been several lessons learned during the course of the programme implementation. The effort to seriously undertake target audience analysis was overlooked, which resulted in the adoption of inappropriate EEC strategies. Moreover, local government participation has been recognised as very important for gaining synergy and support. It has been realised that the credibility of implementors must be enhanced through EEC.

NGO personalised strategy such as home visits and meetings were considered more effective to generate programme support. The existing monitoring and evaluation system was found inadequate in measuring knowledge, attitudes and behaviour of participants. The need for effective EEC planning was recognised. Additionally, a good project on EEC should be sustained by providing continued financial support; strengthening of the EEC network; capacity building of environmental educators through training and regular enhancement on communication skills; providing opportunities on updates and experiential learning through cross-country visits to model EEC projects; and efforts in understanding culture, beliefs and attitudes of the target audience in preparing information materials.

**STRATEGIC PLANNING MATRIX**

| | NGOs | Governments | Educational Institutions | Community Groups |
|---|---|---|---|---|
| NEEDS | • access to information<br>• training opportunities<br>• transparent policies<br>• coordination, sharing & exchange<br>• planning, monitoring & evaluation instruments<br>• understanding of diversity<br>• access to financial resources<br>• official recognition | • popular support<br>• cross-sectoral cohesion<br>• coordination<br>• political consensus<br>• planning, monitoring & evaluation instruments<br>• local representation<br>• trained staff<br>• understanding local circumstances | • translation of trends in society<br>• in-service training of teachers<br>• exchange of methods & experiences<br>• coordination<br>• access to communication media<br>• traditional knowledge, practices & beliefs<br>• link formal & non-formal education | • effective control<br>• trust, respect & appreciation<br>• opportunities for exchange & sharing<br>• bridge to outside institutions<br>• alliances<br>• participation<br>• technical & financial support<br>• outside action |
| CAPACITIES | • combination of voluntarism & professionalism<br>• resolve contradictions<br>• act as a "watchdog"<br>• animators<br>• mobilisation of popular support<br>• village-based approaches<br>• facilitators<br>• link between formal & non-formal education<br>• antenna for diversity<br>• focus on sharing & cooperation | • open up political space for dialogue & exchange<br>• curriculum development<br>• political support<br>• financial support<br>• enforcement<br>• arbitration<br>• cross-sectoral coordination<br>• environmental integration<br>• policy development | • training teachers<br>• technical expertise<br>• curriculum development<br>• strategic planning<br>• interactive learning<br>• communication skills<br>• articulate process approach<br>• educational materials<br>• information & documentation<br>• guidance<br>• evaluation studies | • understanding links between environment & economics, politics, culture & social issues<br>• indigenous knowledge & skills<br>• community values<br>• enabling participation<br>• viable institutions<br>• diligence |

*van Hemert et al., 1995*

## Opportunities for Cooperating

Various parties play a role in environmental education and communication, and cooperation between tham can boost the effectiveness of the programme. An education strategy will therefore aim to promote cooperation so that the programme has solid and lasting results. It depends on the phase of the education programme and the objectives toward which actors cooperate. A strategic planning matrix, as illustrated above, displaying the needs and capacities of the major categories of actors, is a useful tool in identifying actors for cooperation.

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Each programme would need to make a specific analysis, but each can follow these general guidelines.

**Malaysia**

The Environmental Education Unit of the Department of Environment (DOE) in Malaysia provides a good example of managing partnerships to achieve its goal, which is to institute Environcamps as non-formal environmental education for 14-16 year olds (see following page). The DOE plays a facilitating, coordinating role and provides financial support and recognition to partners which include NGOs, universities, schools, and the business sector. The partnership is aimed to maximize efforts, expertise and facilities.

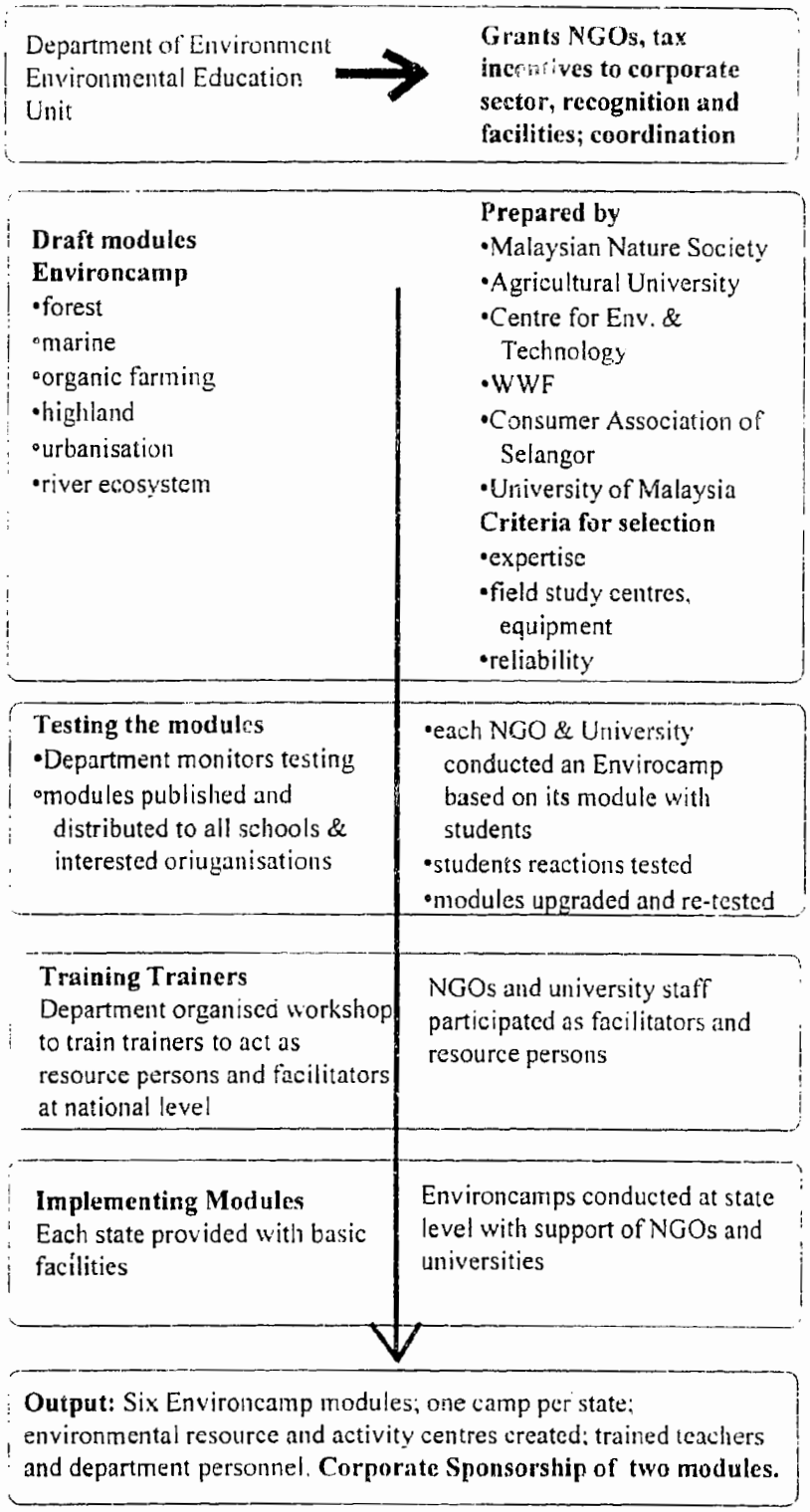
**Indonesia**

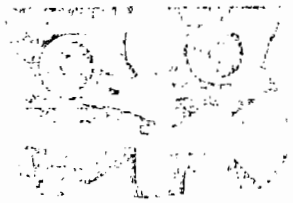
Wetlands International of Indonesia has been working in partnership with the Science Teacher Upgrading Centre (P3G-IPA) of the Department of Education and Culture and the Directorate General of Forest Protection and Nature Conservation of Department of Forestry/PHPA. Together, the three organisations have produced two educational kits on wetlands and have been developing an Indonesian Wetlands Resource book for teachers and practitioners. The main constraints in carrying out the collaborative programme are institutional and technical, i.e., differences in approach in delivering the EE programme and in the dissemination of educational materials into a wider area. To overcome some of the constraints, we suggested that the Government of Indonesia and NGOs develop a network to identify the specific needs of EE for different target groups, and to collate data on EE programmes developed/ implemented by different organisations (GOs and NGOs), to learn and solve the problems and constraints in the implementation of EE and to avoid unnecessary overlapping programmes. (Note: To improve sharing information and to broaden the effect of EE programmes carried out by NGOs, Indonesian NGOs working in EE have formed a communication forum.)

Despite the number of benefits, Indonesian wetlands are under increasing pressure from exploitation, conversion, pollution, logging, poaching and introduction of alien species. More than one-third of Indonesia's mangrove areas has been converted into other uses, mostly agriculture and aquaculture. To control conversion requires concerted efforts of related agencies. Wetlands International pursues education and communication as a tool to propagate the issue. The organisation has been working jointly with P3G-IPA, a national in-service science teacher training institute.

Both organisations realised that joint efforts should be made to incorporate wetlands EE into the existing national curriculum. The need for proper environmental education materials which suit local, regional and national needs was identified as the major constraint in the implementation of EE. The P3G-IPA suggested that the programme should develop EE materials, such as references and teaching materials in Bahasa Indonesia, the Indonesia, the Indonesian language.

**Environcamp Process**





Realising the difficulty of developing a separate curriculum, these organisations preferred to integrate the wetland subjects into the existing curriculum and syllabus to introduce values and the importance of wetlands in schools. Wetlands International provides primarily the materials and expertise in wetland ecology and sustainable management, which then can be integrated into their teaching materials by the P3G-IPA. Wetlands International also attempts to introduce an "informal teaching approach" (more games and fun) into the teaching materials developed by the joint programme.

Since 1993, three sets of materials have been produced through this cooperative programme. An Indonesian Wetlands Teachers' Kit for senior high school students was produced in 1994; a pack of materials on waterbird conservation for primary schools was issued in 1995, and a Wetlands Resource Book for Teachers and Education Practitioners was completed in September 1996. The resource book turned out to be quite a popular wetlands reference and it was soon out of stock. Secondary school students and teachers are the main users, but the book was also requested by university lecturers, NGOs and nature lovers.

While the provision of references and teaching materials is critically important for delivering EE through formal education, it cannot be implemented properly if the teacher is not able to convey the messages. Aware of this constraint, Wetlands International, P3G-IPA, PHPA and the provincial office of the Department of Education and Culture developed a teacher training programme in EE in early 1997 in Danau Sentarum Wildlife Reserve, West Kalimantan. The training made use of the local environment and community to develop in-situ EE materials. Another similar training programme was conducted in West Java in September 1997.

A number of problems and constraints were encountered in the cooperative programme.

- The Science Teacher Upgrading Centre is very much "attached" in science teaching; as a consequence of this, it has been difficult to comprise a multidisciplinary approach in education. However, frequent exposure to multidisciplinary ideas during the implementation of several projects led to a slight improvement in this.
- Coordination and communication among and within institutions has been limited to establishing congenial partnerships.
- Most of the cooperative programmes on environmental education between government agencies and NGOs are carried out sporadically (depending on the funding obtained by NGOs), and in local areas, so that at the national level the effect is not visible.

To develop an effective and efficient programme, a network involving both the government and NGOs should be developed. Cooperative programmes between GOs and NGOs can be strengthened by making maximum use of each other's strengths and weaknesses. EE programmes which are successfully implemented should be followed up by the government.

## 5. Tactics for Implementing EE Strategies

### 5.1 Developing Institutions, Building Capacity - Environmental Study Centres

**Indonesia**

In June 1979, the Ministries of Environment and Education signed an agreement consenting to the establishment of Environmental Study Centres (PSLs) in all public universities. It was agreed that these two Ministries will be jointly responsible for the PSLs. Hence, during that time a number of PSLs were established, starting with fo ir in Java, which immediately became operational. Since then there are now more than 72 PSLs covering all 27 Provinces of Indonesia.

The PSLs are intended to perform three functions: (1) education and training pertinent to environmental management; (2) extension services, fostering public education and awareness, identifying local environmental issues, assisting with the formation of grassroots NGOs, and informing and advising appropriate levels of government; and (3) research and surveys in support of environmental management.

PSLs have a major role in providing training in EIA techniques for university staff, government personnel, consultants, private sector, and non-governmental organisations. Since 1982 there are about 15 PSLs conducting basic EIA introductory courses, involving approximately 10,000 trainers. The PSLs have also developed and delivered special training courses such as spatial planning, geographic information system, industrial waste water management, solid waste management, social forestry, and environmental auditing.

Activities to develop environmental education for schools have been conducted by the Department of Education and Culture, which held a workshop on Environmental Education, sponsored by the National Committee for Man and Biosphere (MAB) Programme of UNESCO-LIPI and Bureau of Population and Environment DKI Jakarta. A pilot project for developing the school curricula for the primary level and general public was also conducted by MAB. A comprehensive in-service training for teachers was conducted by the Directorate General of Primary and Secondary Education. Annually, more than 5,000 school teachers and 4,500 principals in all 27 provinces receive in-service training on the environment.

A degree programme in environmental studies was introduced in 1975, offering a postgraduate degree. A postgraduate programme in Human Ecology and training in other disciplines related to environmental science and management such as Forest Ecology, Environmental and Occupational

Health, Environmental Technology, Environmental Law and Regional Development, are also provided in national universities.

**Thailand**

The Department of Environmental Quality Promotion (DEQP) has supported the establishment of Provincial Environmental Education Centres (PEEC) in selected schools since 1995. DEQP is expected to expand PEECs to be located in every province by the year 2001, plus the National Environmental Education Centre in Bangkok. The main objectives are to develop EE materials and tools in relation to local environmental problems; to strengthen the capability of EE staff in local areas; and to provide EE tools and materials to teachers and trainers in local areas. There are presently ten PEECs in as many schools located in ten provinces. Support to ten more schools will be given during 1997. For example, the PEEC in Mae Hor Pra secondary school in Chiangmai Province in the north of Thailand developed a nature trail in the forest around the school, together with a manual to serve as the nature learning tool for other schools.

Moreover, the establishment of the Environmental Research and Training Centre (ERTC) of the Department of Environmental Quality Promotion, Ministry of Science Technology and Environment (MOSTE), has given a strong impetus to carrying out a more coordinated and effective task of environmental monitoring, research and training nationwide.

Environmental issues in Thailand have emerged mainly due to urbanisation, agricultural development and industrialisation. The issues are divided into natural resource management (forestry, soil, land-use, water, minerals, water and marine resources), and environmental pollution control (water, air, noise, vibration, solid and hazardous waste). Solutions require awareness, knowledge and resources, together with commitment to implement innovative transitional management strategies.

The fundamental purpose of the ERTC is to carry out research and development on pollution control technology and methodology development regarding environmental quality analysis. The Centre provides technical support in the implementation of environmental policy and environmental management initiatives and training in the field of management of environment, natural resources, and laboratory technologies to government staff as well as representatives of non-governmental organizations.

The ERTC has developed 38 training programmes since 1991. The range of training courses is extensive and covers the following: environmental management, environmental impact assessment, environmental information systems, GIS and land use planning, waste water treatment technology, environmental law, public awareness and environmental education, and other subjects.

To assess the needs and priorities of environmental education and to share experiences among countries in the region, the Centre extends the facilities to assist countries in the Greater Mekong Subregion (GMS) and to ASEAN

member countries, and will be expanded to become the Asia-Europe Environmental Technology Centre (AEETC) as agreed by the first Asia-Europe Meeting (ASEM). The purpose of the Centre will be to promote a better environment through the exchange of environmental technology between Asia and Europe.

Training teachers regarding environmental education has been promoted in Thailand in collaboration with the Wildlife Fund Thailand (WFT) and Rajabhat Institute Pranakorn (formerly Pranakorn Teacher Training College). The Environmental Education Centre of Rajabhat Institute Pranakorn was established in 1988 to train teachers in environmental education. The Centre has identified a great need of resource materials for the training and has been developing the Teacher Training Video Package in collaboration with WFT since 1993. The activities are well coordinated with the Ministry of Education (MOE), Bangkok Metropolitan Administration (BMA) and other concerned government agencies and NGOs. The institute and WFT have provided environmental education teacher training for selected teachers through its 36 Rajabhat Institutes in the country and also for selected teacher trainers and teacher supervisors from the BMA and the MOE's office of the National Primary Education Commission and the Department of General Education. The training programmes were organised to train the participants in the use of the Teacher Training Video Package. All participants were given complementary Packages to use within their institutions.

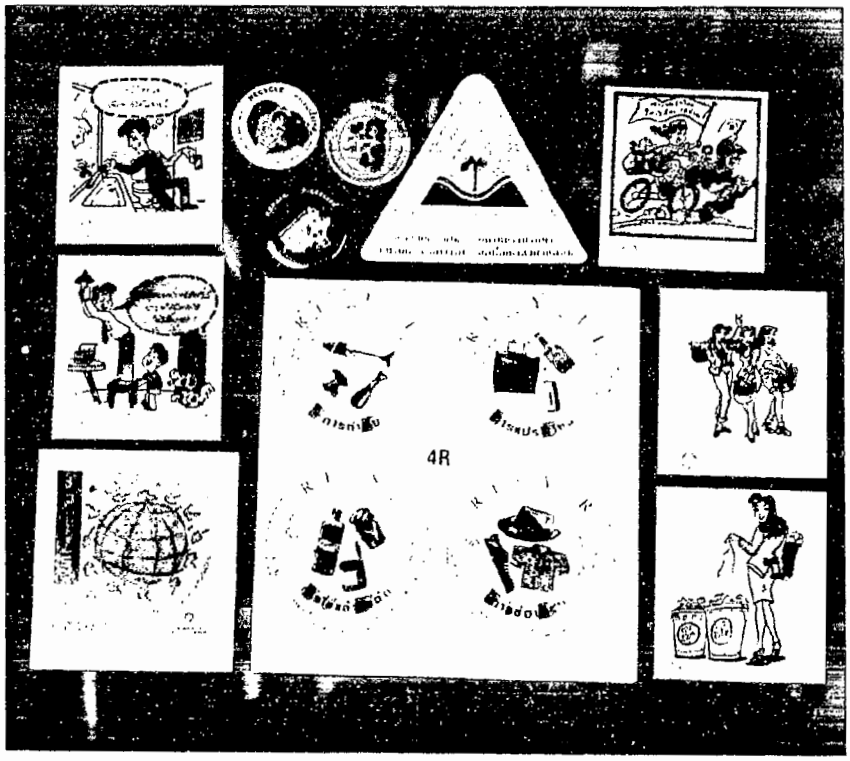



Photo: DEQP, Thailand

The Department of Environmental Quality Promotion, Thailand (DEQP) supports environmental education centres and the production of EE materials and tools in relation to local environmental problems.

The Environmental Education Centre accomplished several projects on environmental education and awareness. Sixty student workbooks on the subject for field studies in elementary and secondary schools have been completed; ten staff from each of the 36 Rajabhat Institutes have been trained in environmental education at the Rajabhat Pranakorn Environmental Education Centre; and nearly 4,100 teachers from various regions of Thailand have obtained in-service training conducted by the Centre, both at the institute's headquarters and the centres located in other regions of the country.

Other government agencies and NGOs have also been involved in environmental education on a project basis, or have integrated this into broader environmental conservation programmes. For example, the Schools Greening Programme currently being undertaken by the Office of the National Primary Education Commission (ONPEC), in collaboration with WFT, is one such wider national programme, which targets the country's almost 32,000 primary schools.

In addition, the Wildlife Conservation Division of the Royal Forest Department has also been involved in the environmental education programmes in the communities living in and around protected forests. The programme has been implemented through its 15 Wildlife Education and Nature Centres. Training on environmental education and nature interpretation has also been provided to the forestry officers from wildlife sanctuaries and national parks in collaboration with WFT. In order to strengthen and widen environmental education and awareness, WFT has been planning to develop a programme on complementary activities as well, while supporting and cooperating with ongoing initiatives.

**Malaysia**

In 1987, the Malaysian Nature Society (MNS) was given the lease of three rows of former labour lines by the Boh Tea Plantations for conversion into a nature study centre. The Centre, called the MNS-Boh Field Studies Centre, is located in the hills deep in a tea plantation. Courses are run there occasionally and every once in a while, local universities bring their students to the Centre for their annual field trip. It is a unique and beautiful location for a centre but because of its distance and logistical problems, it has never quite met its objectives of being a field study centre.

In 1992, MNS, in a tripartite agreement, launched the MNS-SHELL-FRIM Nature Education Centre. In this venture, the building for the education centre was provided by the Forest Research Institute of Malaysia (FRIM), and Shell Companies in Malaysia provided funds for the management of the centre. Amongst the objectives of the centre are the following: to develop tested and appropriate resource and education materials for different levels and groups of course participants; to conduct courses and to service the growing number of nature clubs in the country; to conduct nature education courses to interested groups in the public and private sector; and to complement the Ministry of Education in its environmental science curriculum.

The Centre has been very successful in running field courses for students of all levels. It has conducted courses pertaining to the environment for journalists which has been very well received. Not forgetting the less fortunate, the staff, together with specialists in their fields, have also conducted courses for blind and other handicapped children. These were very well received by these children and there are plans for more of such courses to be held.

**India**

The Centre of Excellence on Environmental Education (CEE) at the Nehru Foundation for Development, Ahmedabad, was established in 1984. The main objective of CEE is to create environmental awareness among children, youth, decision-makers and the general public. To this end, CEE develops innovative programmes and educational materials and field tests them for their validity and effectiveness. The Centre has also been taking up a variety of programmes such as EE in schools, training in EE for diverse target groups, interpretation programmes in zoos, national parks and museums, and EE through the media. The CEE training programmes are attended by personnel from government, non-governmental and other voluntary, professional and educational organisations. The eight month long training in EE, which started in 1989 to train graduate students and persons working in NGOs for a career in EE, is now being attended by candidates from other developing countries as well. This course aims at creating a broad understanding of environmental issues and of relevant communication techniques with the ultimate objective of producing a cadre of individuals who can meet the local and regional needs of EE. Each year about 12-15 candidates are being trained.

CEE is one of the few institutions in the country working on nature interpretation which is fast emerging as an effective EE tool. It is accepted now that interpretation techniques help to increase the understanding and appreciation of the visitor to a protected area. The National Wildlife Action Plan, a blueprint for wildlife conservation in the country, has recommended the establishment of model interpretation programmes at sites such as protected areas, historical sites, museums and zoological/botanical gardens. Besides developing educational materials and organising training programmes, CEE has attempted to develop a network of agencies in the country who can develop EE materials specific to their locales and organise teacher training programmes with the financial support of the Ministry of Human Resources Development. CEE is the focal point for EE for the SACEP, and is a member and cooperating organisation of the IUCN.

## 5.2 Developing and Using Mass Media

**Nepal**

The Nepal Forum of Environmental Journalists (NFEJ) has taken initiatives in environmental education and communication with a multimedia approach aimed at reaching people both at the policy level and the general public. It seeks to sensitize not only journalists but also politicians, administrators, opinion leaders, and people at large.

To reach the general public, NFEJ found radio to be the most effective media for communication on conservation issues, hence, a fifteen minute radio programme in Nepali is broadcast every Friday evening. Other means NFEJ has used are national language newspaper coverage, newsletter, wall newspaper, video magazine, street theatre, environmental camps, field visits, workshops, roundtable conferences, and discussions. In a country such as Nepal with a large rural population and low literacy rates, information dissemination tools such as street theatre have been very successful.

Reaching the target group which includes politicians and decision makers, NFEJ has arranged discussions between members of the parliament, bureaucrats, journalists and experts. These meetings helped legislators acquire knowledge and information on the environment so that they could better tackle issues of environment and development. Similar consultative meetings at the district level included district officials, opinion leaders and the Village Development Committee chairmen. To analyze particular environmental issues, journalists and decision-makers were called together to meet and discuss specific problems.

**China**

Global-village Environmental Culture Institute of Beijing (GECIB), taking the initiative to promote environmental education and public awareness in China, has produced TV serials for national television, established environmental education columns in national newspapers covering news and information, established a "Green Volunteer" network in China involving women, youth and journalists, and supported an experimental garbage sorting and recycling system in a community in Beijing. It has not only supported the government in implementing programmes on environmental education, but also supplemented and supervised such activities.

Television has been one of the most effective mass media to foster public awareness in China. A survey by Weekly Selected News, a popular Chinese newspaper, indicated that the main source of information in China is TV, followed by newspapers, books and radio. Recognising this, GECIB established first two regular TV programmes on environmental education in national TV stations, China Education Television (CETV) and China Central Television (CCTV).

The programme "Green Civilization & China" premiered on January 1, 1996 on China Educational Television, which, through Asian-Pacific Satellite No. 1, covers all provinces of China and the countries of Southeast Asia. The programme consists of four parts, namely, an introduction to green technology and green products; discussion about environmental problems resulting from China's economic development; international experiences regarding environmental protection; and advocacy for environment-friendly lifestyles. The second programme, "Time for Environment," deals mainly with the latest international and domestic environmental events. This programme runs frequently on China Central Television.

The GECIB also produced a video documentary entitled "Daughters of the Earth," featuring women devoted to environmental protection, for the NGO Forum of the Fourth World Conference on Women held in Beijing in 1995.

The GECIB issues a bi-monthly environmental column, "Green Trend," in the Chinese Consumers Daily. "Green Trend" advocates environment-friendly consumerism. In addition, a weekly column, "Environmental Protection in Connection with Every Family," is written for the Chinese Women's Daily. It aims at guiding Chinese women to lead an environment-friendly lifestyle. It has been regularly publishing special news and articles advocating garbage sorting and the recycling system in Beijing.

The GECIB works with potential partners to come up with programmes on environmental education and communication. For example, it has been cooperating with Beijing Municipal Environment and Sanitation Bureau to establish a garbage sorting and recycling system in Beijing. It has also built a partnership with the Capital Women Journalists' Association to establish a "Green Volunteer" network among women journalists, and successfully organised a "Women Journalists and Environmental Protection Forum," which called for every woman journalist in Beijing to cut down on the use of plastic bags and disposable chopsticks in order to reduce the "white pollution" and to save limited resources.

### 5.3 Communicating Law as a Means of Environmental Education

**Bangladesh**

*Pro bono publico* is representational litigation that helps vent the grievances of those who cannot come for judicial redress for socioeconomic reasons, especially when brought to judicial notice by public spirited persons, groups or organisations. This process has reached the point where people are litigating not only for those who are victims of environmental threats, but also to protect the rights of existence of non-human creations and the inanimate world. These cases are popularly called public interest environmental litigation (PIEL) which go beyond a "human rights" approach to a "human duties" approach toward fellow human beings or non-human entities.

With the exception of some substantive civil and criminal liabilities, most laws having to do with the environment are the sectoral laws enforced by particular public or statutory agencies. Hence, these are neither taught in the law curricula nor applied in day to day practice before the court. It has been found in Bangladesh that the officials of the respective agencies are also not aware of the relevant provisions of the regulatory regime unless the use or abuse of certain provisions support vested interests or profits. Therefore, there is a candid lack of awareness amongst the public officials about laws pertaining to the environment.

The commercial and other investors, though included in civil society, have a dual identity since the private sector is largely involved in environmental questions and concerns. Often they sit on the other side of the table from the aggrieved.

The common man and the poor are most often the victims although they are also blamed for being the cause of the degraded environment. The question remains in Bangladesh whether we are too many and too poor to manage the environment, or whether we have a poor environment and hence too many in numbers. Nonetheless, the vast majority of the population needs to be taken as a key target for awareness and education since they have effectively a dual role in changing the face of the environment.

Last but not least is the "donor factor." In many instances, financial institutions and donor countries make environmental issues a precondition for financial assistance. However, on the other hand, in many instances, they impose anti-environment programmes into the package of *de jure* sovereign authority of the receiving state. The situation is further aggravated when the local counterpart agency, along with the consulting companies, defy the laws. Hence, it is clear that environmental education and awareness must address all of these issues.

**Law and the environment**

A case of the failure of the Election Commission and other law enforcing agencies in preventing the candidates from violating laws in the name of election campaign for the posts of Mayor and Commissioner of the Dhaka City Corporation was raised in January 1994. The campaigners for the candidates defaced peoples' property, encroached on public streets and pavements, and used too many loudspeakers, disturbing the peace and creating pollution. The High Court Division of the Supreme Court (HCD) directed the respondents to show cause as to why the election shall not be postponed since they were not being conducted in accordance with the law. All the respondents appeared and the major political parties joined together to make a commitment that all illegal acts would be stopped and removed. The Attorney General ensured that funds would be provided by the respondents to repaint peoples' properties. This was the first time that the law enforcing agencies upheld this law and the political parties came to realise that what they had been doing for more than half a century in the name of "election culture" was not lawful, and that people could challenge such acts and encroachments on their rights. During the June 1996 election, there was almost no wall writing, electioneering boxes set up on public property, or rampant loudspeakers. Some of the credit for this improvement goes to the impact of the well-publicised case of Bangladesh Environmental Lawyers Association (BELA) vs. the Election Commissioner and others (46 DLR 1994, pg. 235).

In another Writ Petition, the violation of the master plan of the city by the responsible statutory authorities was challenged on the grounds that the implementation of the revised plan would create an environmental hazard in the given locality. The HCD, appreciating the appropriateness of the accusation, issued an injunction barring the proposed construction on the site. Similarly, in another case, on the application of the residents of a town, the HCD came forward and issued an order of injunction restraining the town planners from filling up a lake for reclaiming plots for construction purposes.

A case was filed on the World Environment Day in 1994 in the HCD to enforce the earlier decision involving the Gazette Notification of the Government in 1986, in which it identified 903 industries as polluters, and asked the Ministry of Industry to ensure that (1) waste treatment plants were installed within three years; and (2) no industry was approved in future without a waste treatment device. Accordingly, an order was issued and the public agencies were activated and made aware of their responsibility to monitor the implementation of the order. Further, the Ministry of Environment and Forest and the Department of Environment were given the judicial mandate to start purging the *status quo*. All the industries became aware as well as the new investors that they had to comply with such directions or face consequences.

Recently, in another case the petitioner, as a potential consumer, filed the writ case in HCD

*continued...*

to prevent the release of dried skimmed milk powder contaminated with high radioactivity imported by the Danish Condensed Milk Company from Estonia. An injunction was obtained and the said milk is due to be sent back to the manufacturer.

It was the first time in Bangladeshi jurisprudence that the rights of a potential consumer to file such a suit have been recognised. As a result, the fundamental "right to life" has been expanded to include anything that affects life, public health and safety. The Atomic Energy Commission was directed to process the sampling and testing of radiation to avoid such future anomalies and the sampling requirements were made clear to the Port Authority and Customs officials.

Besides those mentioned above, there are a large number of cases pending which have wide ramifications in the development of a sustainable regulatory regime with justice and equity as the central theme for the system of governance. For example, in Writ Petition No. 278/96 a group of children under the age of 10 have sued the government to bring back the young Bangladeshi camel jockeys from United Arab Emirates who are kept undernourished and are forced to labour. Children have also sent a legal notice to the government for failing to prevent vehicular pollution since they are the front line victims of severe noise and smoke emissions. In these two cases, the question of intergenerational duty, rights and equity are being considered. There are cases on badly planned and imposed so-called "development" programmes undertaken with donors/lenders wherein various statutory agencies are being directed to comply with the sectoral laws, thus allowing the people to raise their objections as per the law.

The judicial system of the country was not familiar with the concept of seeking judicial redress in the name of PIEL prior to the above-mentioned cases. The Constitution allowed only the "person aggrieved" to bring petitions. The scope of these words was challenged by BELA when a petition filed in its name challenging the implementation of a flood control project was rejected by the HCD, contending that an organisation not having any direct grievance was not the "person aggrieved" within the meaning of the Constitution and hence had no right to bring the petition. The presence of such words, supposedly, had made the scope of public interest litigation venting the cause of the disadvantaged section a difficult hurdle in the system. In addressing this Constitutional knot that has been prevailing on the threshold question as to who is an "aggrieved person" for the last 24 year history of the Bangladesh Constitution, the Appellate Division of the Supreme Court, allowing the appeal, pronounced a landmark decision in 1996 overturning the traditional practice (Dr. Mohiuddin Farooque vs. Bangladesh and others, BLD-97 AD, pg.1). Through this, judgement suits by evidently public-spirited persons or bodies having proven dedication may acquire "sufficient interest" to initiate cases on behalf of others debarred because of their various socioeconomic and other inabilities to have access to justice.

The method of addressing environmental issues through PIEL has opened up a new horizon in the concept of environmental protection and conservation. It is not just a mode of enforcement of environmental regulations through the judicial process, but a potential way in creating awareness amongst the members of a society about their rights and duties. This kind of litigation can be a unique vehicle for rendering services to those who cannot speak for themselves. It can clarify and promote judicial remedies, making the judiciary progressive, the ramifications of which give the people a fair idea about the interface between environmental issues and the regulatory regime.

**Sri Lanka**

The Environmental Foundation Ltd. (EFL), established in 1981, is a national environmental NGO in Sri Lanka which carries out various environmental education and awareness programmes focused primarily on environmental law education. Moreover, EFL acts as a catalyst for "environmental activism" in Sri Lanka.

EFL's Environmental Legal Education Programme (ELEP) aims to create awareness among various groups/categories of citizens about environmental laws, help people assert their environmental rights, enlist public support toward more effective environmental laws, and ensure their efficient implementation. The ELEP has contributed and communicated various aspects of environmental law such as: environmental law with particular reference to public nuisance, Environmental Impact Assessment (EIA) regulations, public participation in the EIA process, coast conservation law and infrastructure development, National Task Force on Environmental Law, habitat and species protection under the Fauna and Flora Act and the Forest Ordinance, citizens' suits relating to environmental pollution, environmental rights of citizens, Environment Protection License scheme and public rights, and international conventions on the environment.

For the last two years ELEP has concentrated on lectures, seminars, workshops and international conferences. The ELEP delivered lectures covering environmental law, environmental rights and conservation laws. The seminars focused mainly on legal remedies to environmental issues, whereas five workshops were held on the EIA covering different aspects of environmental law. The foundation has occasionally organised international and regional conferences on public interest litigation, as well as an email training workshop using Internet for environmental law education.

In the absence of an environmental education policy in Sri Lanka, convincing the authorities to adopt environmentally-friendly policies would be a somewhat long process. However, this goal can perhaps be achieved by spreading the activities of the ELEP to reach target groups at the grassroots level with the support of catalysts and paralegal personnel. When widespread awareness is created among the various target groups, they will begin to realise the importance of and the need for an environmental education policy and will eventually generate a demand for it.

### 5.4 Working With Nature Clubs

**Sri Lanka**

The Wildlife and Nature Protection Society (WNPS) of Sri Lanka, a national non-governmental organisation, is devoted to conserving nature and the environment. During its 102 years the Society has been committed to protecting the wildlife of the island from being indiscriminately hunted for their flesh, skins and trophies. Environmental education and communication is considered as an effective means to raise awareness and a tool to conserve wildlife in Sri Lanka. Noting the poor public response to wildlife and

environmental issues in the 1970s, the Society targeted the school-going youth to be the main audiences of the conservation programme. The Student Nature Club (SNC) programme, which currently has 315 affiliated clubs, was initiated in 1976 with the objective of educating and creating awareness among students on environmental issues. About 25,000 youth are targeted every year to be educated on basic wildlife, biodiversity and environmental issues. Having identified a need for the environmental educational and awareness programme directed to the youth, the next step was to find a forum and means to reach the target group. The school-going youth of age 15 - 19 years of the secondary schools were collectively addressed and organised in a forum. At the onset of the programme, the governmental contribution consisted of providing free access to school premises to conduct activities such as club meetings, exhibitions, and other activities, but it soon developed into granting facilities for school gardens, nurseries and utilisation of audio-visual aids. Laboratory facilities to carry out biological and chemical analyses were also being provided in the universities and other agencies such as the National Aquatic Resources Agency and the National Institute for Higher Education.

Nature Club members receive an introductory talk before proceeding on a trek in Sinharaje, Sri Lanka with the Wildlife and Nature Protection Society. Photo: Wildlife and Nature Protection Society

Part of the diverse range of educational activities run by the Wildlife and Nature Protection Society. Top: An early morning visit to a stream in a nature camp programme at Handigalle Maha Vidyalaya, Sri Lanka. Middle: A marsh survey by boat. Bottom: A tree planting programme to regenerate degraded soil. Photos: Wildlife and Nature Protection Society

Through the freely distributed Sinhala journal, schools were invited to enroll in the nature clubs. The Society at times had to constrain its services on account of limited resources in order to cater to all the schools that desired the establishment of clubs. Work during the first ten years was constrained by limited funds which had to be provided by the Society. Only 130 clubs had been affiliated. This was particularly so because some of the schools were in remote areas, which required more than a day in traveling to reach.

By 1988 the programme was getting widespread recognition from agencies such as the Frankfurt Zoological Society, the Netherlands Government and NORAD. Funds were made available to employ a full-time coordinator to act as a liaison between the clubs and the Society. Facilities such as a photocopying machine, computer, and other office equipment was provided through such assistance. This resulted in the rapid expansion of the programme. By 1991 more than 200 school clubs had been affiliated. Frequent visits were paid to the schools and more facilities were provided for conducting seminars, workshops and contests.

In view of the limited funds and personnel who could be committed to the programme, it had to be designed to obtain maximum coverage within these limits. The goodwill of those members who could bear influence at regional, urban, or community levels was sought. They were asked to discuss the local environmental issues and the implementation programme with the local Director of Education, Heads of Schools. They in turn extended their patronage to the programme and the formation of School Nature Clubs in schools in areas of their jurisdiction. Seminars, meetings and workshops were conducted in individual schools or where representatives from several schools congregated.

SNC's now participate in activities conducted by government departments, too, particularly with regard to field operations. Controlling pollution of national parks by visitors, conducting supervised biological surveys in waterways, rivers and lagoons, controlling small-scale fires in forest areas and conducting avifaunal surveys are activities for which institutes such as the Department of Wildlife, Coast Conservation Authority, National Scientific Agency invite them to participate.

Working with government departments requires considerable diplomacy and understanding. Ninety-five percent of the schools of the country and the schools where SNC's have been established are government schools. Hence, the entire success of the programme depended on good coordination and establishing a good relationship. The Society has to be always mindful that heads of the schools and their staff are government employees whose activities are constrained by government financial and administrative regulations. Hence, the financial commitments of conducting the programme are borne by the Society, leaving no burden to the schools. Moreover, disruption often occurs when the teacher in charge or the enthusiastic principals have to leave the school, being an employee in a transferable government service. This sometimes leaves a very active nature club unable to carry on its programme.

**Malaysia**

The Malaysian Nature Society (MNS), with its long experience, has established nature clubs in schools as part of the overall environmental education plan. The nature clubs programme in schools was launched in 1991. The objective was to promote children's awareness and appreciation of nature through experiential learning.

Initially, the Society arranged to pay for a staff to start and service 20 clubs by providing seed money for the clubs, producing regular newsletters, running courses for teachers in charge and members of clubs, and arranging competitions and other activities for two years. The project got off to a shaky start, partly due to the problem of getting suitable staff. The staffing problem has now been solved and there are now about 90 schools with nature clubs affiliated with the Society. All of these clubs get a regular newsletter and are guided by a constitution drawn up in consultation with teachers in charge. The most common complaint is that teachers do not know what activities to organise for the club members. Courses run by the Society try to assist teachers in overcoming this problem by identifying projects and activities that they can undertake either on their own or jointly with other clubs. These courses are always well-received and the participants say that they are useful.

As the nature clubs in schools programme is supported by the Ministry of Education, many schools are keen to have such a club for their students. However, there are several problems facing the staff managing this programme. All clubs are required to be a member of the nature clubs fraternity by paying a nominal membership fee to the Society. This is used to pay for the newsletters and other materials that are sent to them. However, many of the clubs do not renew annually and the staff has to spend a lot of time following up on subscription renewals. While the subscription fee is nominal, it is important that clubs pay a token sum for what they receive, as what is given free is seldom appreciated. But, as this is not working out, this requirement might have to be revised.

Nature clubs are formed in primary and secondary schools as well as in teacher training colleges. One problem is that of the high turnover of teachers who are in charge of the clubs. While the students provide a form of continuity as they move up and out, in almost all schools teachers in charge of nature clubs are changed every year. Some teachers are not interested in the clubs at all and students are left to their own devices. Then there are teachers who are very committed, but they often get transferred to other schools or are promoted or put in charge of other clubs. Thus, continuity suffers and what is started by one teacher is seldom completed by the teacher taking over. This often means that with every new school year, the Society staff has to start all over again with most clubs, leading to a good deal of frustration.

Although the nature clubs in schools are supported by the Ministry of Education there is very little interaction between staff of the Society and that of the Ministry. There are, again, a number of problems, one of them being a

change of Ministry personnel. No sooner has the Society staff built up contacts and formed a relationship, when the public officer is changed and another takes over. Contact has to be started again and a relationship has to be built up. As this happens rather frequently, our staff gets wary of forming such relationships for it seems to be a rather fruitless effort. Very often we meet with unsympathetic and unhelpful officers. Directions set by the Ministry of Education also do not seem to be focused or coordinated. The "Man and Environment" programme which held so much promise for conservation seems to have failed. There has been no follow-up as to why this programme failed or how it can be revamped or improved. There also seems to be no commitment for its implementation. The Ministry has often called for meetings and discussions with NGOs. Inputs are requested for NGOs but while this is gladly given and even accepted, there is no follow-up or commitment to see that suggestions and recommendations which have been accepted are implemented. Again, this lack of follow-up can be attributed to the fact that personnel keeps changing and the person taking over may not have been briefed as to what has been discussed. But the cycle continues as this new person will again initiate meetings with NGOs. NGOs lose faith in the government machinery as they do not see the commitment and government officers are unhappy with NGOs as they think NGOs are not interested in their efforts. The other major problem is that information regarding meetings is almost always sent at very short notice, making it difficult for NGOs to attend as their time is already committed elsewhere. Nonetheless, NGOs recognise that there are internal problems in the government and thus are very appreciative of whatever sincere efforts are made by the officers of the Ministry of Education to help and support their projects.

Since there are a number of organisations carrying out environmental education activities at the government and NGO level it will be a good idea to form an agency, perhaps headed by the Ministry of Education, coordinating activities on environmental education and communication at a national level. This will lead to specialisation in different fields and a higher quality of environmental education and communication programmes.

### 5.5 Designing Non-formal Environmental Education

#### Bangladesh

In Bangladesh, the content of environmental education in the social science courses may be fairly adequate, but it is presumed that the students already have background knowledge of nature and the environment. To bridge the gap and partially enrich the students' knowledge regarding the environment, Bangladesh Poribesh Unnayan Sangstha (Bangladesh POUSH), a private voluntary national development organisation, has launched a nature awareness programme in its 50 non-formal primary schools. This programme consists of nature walks, visits to zoos and botanical gardens, the study of specific books on birds, trees and fishes, training of teachers, and preparing slides and videos. The primary school teachers have participated through advising on curriculum design and teaching the booklets on environmental education and communication published by the organisation.primary schools run by the government.

The non-formal feeder schools normally teach from class one to three, encouraging the students to go on to class four in the government primary schools. These tiny schools, run by NGOs, each with thirty to forty students, were designed to help the dropouts from primary schools for whom school timings or location did not agree with their economic activity.

To initiate the programme, 1,500 children of the schools of rural areas were given textbooks on birds and trees written in simple language and illustrated to whatever event possible. These texts are used as teaching materials by the teachers, who themselves are trained to recognise the trees and birds. Twice a year the students are examined to find how much they have learned about the characteristics of trees and birds described in these texts. Since it was realised that teaching texts will not be enough, the students are taken out on nature walks once a month. These walks are usually within a kilometer radius of the school, and the students are asked to identify flowers, bushes, trees, animals and birds they encounter. The latent interest in many of the children is aroused by the competition to know more and shine before their peers. The speed with which many of them learn about nature is remarkable. No doubt, once the school arouses their interest, they learn more by asking their elders. Knowledge that might have been lost is now being picked up by the youngsters. A third component is visits to zoos and botanical gardens in Dhaka and Rajshahi to see exotic animals, which awakens their interest not only regarding nature, but also about the diversity of the world itself.

Another component is the preparation of slides, photos and videos, to be shown to the children to widen their awareness about threats to the natural environment and how they can be mitigated. This is considered essential because the school children in many remote areas cannot be brought to one of the big cities. For them a slide or video show can partly substitute for the actual experience of traveling to different places. Moreover, a slide show can expose them to many more aspects of nature than can be seen in any one place or in a particular season.

This programme is virtually the result of the idea conceived by POUSH, and enthusiastic support has been received from primary school teachers and professionals at the county level. Initially, the project began with local contributions, but after a year some support was received from a Japanese NGO.

If there are any lessons to be learned, they are, first, that NGOs should go ahead with their pilot projects without waiting for government assistance, and second, it is easier to work informally with local governments than with the Ministries, because the latter require cumbersome, time-consuming formalities. Of course, any such initiative must make sure that it does not adversely affect any on-going government programme, such as by drawing students away from government schools.

**India**

Environmental education has been an integral component of conservation programmes of WWF-India since 1969. Over the years it has developed active nature clubs in schools, conducted a large number of teacher training workshops, promoted nature camp activities, launched a programme aimed at forging a link between conservation and religion, and brought out several publications as resource material for environmental education. The thrust of WWF-India's environment education policy is to make its programmes action-oriented, relevant to the target groups and responsive to the daily lives of the people.

The Conservation Corps Volunteer Programme is an attempt to develop a cadre of young dedicated volunteers for conservation work. This activity combines education with intensive training to provide experience in project and resource management. The volunteers, who are financially supported for a maximum period of two years, work for NGOs at the community level. The states so far covered under this programme include West Bengal, Bihar, Orissa, Karnataka, Maharashtra and Tamil Nadu.

WWF-India has recently initiated a programme in organising outdoor nature education centres where educational infrastructure could be built. The centres are preferred to be at strategic locations or wilderness areas to facilitate the discovery of nature. This initiative is based on the concept of using nature as a teaching/learning laboratory. One such centre will be developed in Goa and a second one is being planned in Delhi. The basic infrastructure in these centres would include a nature discovery facility, audiovisual section, an exhibition area, an auditorium, a creative activity centre, classrooms for students and an outdoor nature trail.

Another area in which WWF-India proposes to make a significant contribution is in respect of developing interpretation centres to enhance the educational potential of national parks and protected areas. A project of this nature (Keoladeo National Park) in Bharatpur is being implemented with the technical assistance of CEE, Ahmedabad. A similar facility is being planned for the Ranthambhor National Park in Rajasthan.

## 5.6 Education and Communication Through Action Research

**Pakistan**

The Pakistan Institute for Environment Development Action Research (Piedar) has involved the student community in environmental campaigns as they act as ambassadors of change and influence their communities. Piedar's Environmental Education through Participatory Action Learning (EEPAL) Programme aims to sensitise students by providing opportunities to participate in a practical way in learning methods of maintaining a better living environment. To this end the project develops training,

education and communication materials, holds workshops in schools and initiates small-scale environmental action plans. One of the main objectives of EEPAL is to integrate environmental issues in the syllabus of every subject rather than make them a separate subject altogether. For this purpose Piedar provides teachers with guidelines in every academic session. The EEPAL also forms environmental clubs that work not only within the school but also link up with neighbouring residential areas and markets to educate and communicate with people regarding local environmental issues.

The idea of Piedar emerged from Pakistan's National Conservation Strategy, which identified the need for institutions at community level doing participatory action research in the field of environment and development. Piedar is designed as a non-governmental organisation which aims to bring together, in a collegial form, reputed and recognised resources for undertaking and learning from action research and for disseminating findings horizontally to other communities and vertically to governments, the private sector and NGOs.

The EEPAL programme runs along a set of guidelines which were conceived at the beginning of its implementation. The programme came about after an overall view of the educational system prevailing in the country.

**Problem definition**

1. Environmental education as a co-curriculum activity has been largely limited to English medium schools catering to the upper classes and a few metropolitan cities which contain only a minority of Pakistan's population.

2. Environmental education should be targeted towards the larger audience Urdu medium school children, since they represent the masses of Pakistan.

**Action**

To promote environmental education by working with teachers and children in Urdu medium schools, the 15 schools spread throughout the cities of Islamabad and Rawalpindi form the entire body of active members of EEPAL through Piedar. The implementation procedure that has been exercised successfully with the schools is as follows:

1. An introductory visit is paid to the school by a Piedar team in which the principals and teachers are informed of the programme, its aims, objectives and desired results.
2. A teachers' environmental awareness workshop is held, which is actually an informal meeting with the principal and staff during which questionnaires are handed out and filled in. A general discussion then follows and the Piedar members answer any questions that come up.
3. A student awareness workshop is held, which consists of visits to each class in the school. The children are also given questionnaires after being informed of the nature, aims and proceedings of the programme.
4. Guidelines are drafted by Piedar for each three month academic

session, consisting of environmental issues related to the individual classes and subjects. These are given to the teachers who implement these activities in their respective classes.

5. The school's response and action is closely monitored by regular visits from Piedar. Every school is visited fortnightly and the students and staff are met personally in order to maintain a close relationship with all the parties.
6. The schools are then encouraged to hold exhibitions within their premises in order to learn and share their learning. Piedar is always present on this occasion.
7. Inter-school competitions are held so that all the members may exchange their learning and knowledge with each other. This activity also creates a healthy sense of competition amongst the members.
8. Proposed action: during the compilation of a session report, Piedar chalks out a "future plan" in order to further the programme during the coming session. Each problem encountered by the schools is discussed and tackled separately so that the weak points may be worked upon and the healthy ones may be encouraged.

**Reflection**

The Piedar team, after every session, complies a report which is submitted to UNDP. The week during which this compilation takes place is also the time that the staff takes to go through the workings of the previous three month period and compares the results. The principals and the students of each school submit reports to Piedar, which inform the team as to how the EEPAL programme is being received by them.

So far the response has been healthy. Even though some schools were initially lax in their attitude and response to EEPAL, they have all risen with a pleasantly active and encouraging attitude that has resulted in the formation of a joint venture consisting of Piedar and a 15 member-strong body of schools who are collectively implementing EEPAL to the fullest.

**Evaluation**

The monitoring visits by UNDP personnel to the schools during exhibitions, functions, tree plantings and both inter-school and within school competitions are a gauge of evaluation. The response from UNDP informs Piedar as to how well the programme has been received since a general discussion is usually held during and after such visits.

The reports handed in by the principals and staff of the schools also show that the EEPAL programme has been well-received and also has been appreciated since it has made a notable difference in the schools. Similarly, reports handed in by the students show that the children have grasped the concept of "Reduce, Recycle and Reuse" and have taken the message back to their homes.

**Redefining the problem**

Environmental education needs to be extended to the neighbouring markets and habitats so that EEPAL's message of "Reduce, Recycle and Reuse" is instilled into the day to day lives of Pakistani citizens.

The next cycle aims to extend the programme to neighbouring markets using school staff and children as channels.

**Environmental awareness among school children**

Piedar initially implemented a pilot project in the Overseas Pakistani Foundation (OPF) Girls college, Islamabad in 1989. The project involved the students in environmental awareness and conservation activities which led to the emergence of the voluntary OPF Environmental Society, with the students paying a membership fee of Rs. 15 as part of fund raising. The Society initially began with a cleanup and tree planting campaign within the school which then extended to the nearby shopping area in the second phase. Debates, inter-school competitions and film shows were organised. The society was also requested by the Capital Development Authority of Islamabad to assist with its tree planting efforts along Faisal Avenue, a major avenue of Islamabad. The most important lesson learned from this project was that by motivating students the potential of peer pressure could be used positively to influence other institutions, individuals and communities to replicate the project elsewhere.

The Environmental Education through Participatory Action Learning (EEPAL) programme was the result of the OPF pilot project and it aims to build on this initial success and experience by expanding the project to twenty Urdu medium schools, focusing on schools for students from underprivileged backgrounds, in Islamabad and Rawalpindi. The project uses the well-known child to child approach in sensitising students, and thereby communities, about environmental issues. To this end, training, information, education and communication materials have been developed. Prior to students' awareness workshops, the principal and teachers of the school are given a one day orientation to motivate them for the active support for the students. Workshops with students and school staff members lead to the formation of key leader groups in the schools for developing and initialising small-scale environmental plans. The EEPAL programme also involves active participation by the students in local events, debates and other environmental activities, within the school and at an inter-school level. The programme officer is in charge of supporting these efforts as well as monitoring them.

The EEPAL programme is initiated in schools via staff workshops. Once the staff workshop has been conducted and the principal and teachers of the school believe that they would like to participate in the EEPAL programme, Piedar conducts awareness programmes with the students on a class-wise basis, which enables them to give individual attention to students.

Periodic monitoring visits are paid by Piedar to evaluate each school's progress and to make the children realise that EEPAL is a regular programme and not just the one odd orientation day. Regular visits to the schools and contact with them has definitely strengthened the success of the programme and helped to ingrain the concept of EEPAL in their minds.

The Environmental Education through Participatory Action Learning Programme organised by PIEDAR is here being explained with the help of posters in a rural area.
Photo: PIEDAR

Schools are encouraged to hold exhibitions of their work to share their learning, such as at this fair which displays student's models.
Photo: PIEDAR

Students visit a nearby market to talk to vendors and to pay a role in transmitting the message of reduce, recycle and re-use in the community.
Photo: PIEDAR

An inter-school competition encourages learning to be shared and provides an opportunity for the work of the students to be acknowledged by the PIEDAR team. Prizes, certificates and medals are presented to encourage the children in their work.

Photo: PIEDAR

## 6. Recommendations of the Meeting: Asian Workshop on Communication and Education Strategies for Ministries of Environment and Potential Partners

From governments

1. Each national government should develop its own strategic approach to EE suitable to its situation/needs, and establish a policy framework for EE to support sustainable development requirements.

2. Roles and responsibilities of departments should be clearly defined before entering into the partnership, and then the partnerships should be strengthened in all dimensions.

3. When formulating an EE strategy, we need knowledge of environmental and other relevant issues regarding which all age groups have concerns, identify the most important local/regional issues, find out the perceptions of people, and make action plans.

4. While formulating an EE strategy, a multidisciplinary approach needs to be adopted to involve all related organisations for mutual benefits.

5. Governments should develop policies to initiate and encourage the participation of various groups in their respective government environmental education programmes for sharing maximum benefits and common objectives.

From NGOs and the media

To governments:

1. Coordinate the work of various line Ministries and set up a focal point.

2. All relevant sectoral policies, programmes and projects must have EE as an integral component.

3. Although governments are responsible for developing broad policies for EE, implementation should be through competent organisations/ institutions, be they governmental or non-governmental.

4. To facilitate partnership with NGOs, governments need to simplify and minimize rules and regulations and establish transparent procedures.

5. EE programmes should be designed to facilitate the participation of competent local/small NGOs and CBOs (community-based organisations).

To NGOs:

1. Ensure public accountability.
2. NGOs must network and cooperate amongst themselves.
3. International and large NGOs should work with, build the capacity of, and assist smaller NGOs and people's movements.
4. NGOs should seek to constantly update their EE & C skills and knowledge.

To international agencies:

1. Commitment to EE & C should be long-term.
2. Coordinate the work of various IAs (internatonal agencies) and set-up a focal point for EE & C.
3. Give preference to local expertise.
4. Adequate funds should be allocated specifically for EE & C both as separate projects and as a part of relevant level/conservation projects.
5. Facilitate exchange of experiences among environmental educators from various countries.

From international agencies

Monitoring and evaluation:

To governments:
Ensure availability of trained personnel in the monitoring and evaluation process in the different government agencies (e.g., Ministries of Planning, Environment, Education, Industries etc.) so as to be more transparent.

To NGOs:
Become partners with donors in the monitoring and evaluation process for ensuring transparency and accountability.

International agencies:
Ensure that all projects implemented include monitoring and evaluation components so as to be more transparent and accountable.

Information sharing and access:

To international agencies:

- Coordination among IAs.
- International agencies should proactively use existing networks to more widely disseminate their mandates, resources and programmes.

To governments:
- Memoranda of agreement between appropriate ministries and government agencies should be signed to generate and share information.

- A mechanism should be set up so that all sectors of civil society can share the information generated.

- Should develop a mechanism to be followed by NGOs, through which they can perform as a bridging partner between the government and society in information gathering and sharing.

Political will:

To international agencies:
- Include education and communication for sustainable development in agendas of Ministerial conferences and high level meetings.
- Ensure flexibility in collaboration with partners.
- Enhance/ensure implementation of policies.

To governments:
- Implement commitments at international conferences.
- Undertake follow-up actions from various conventions and agreements.
- Implement plans/strategies into concrete actions.

To NGOs:
Identify and work with active partners in mobilising resources and influence policy to support community activities.

Capacity building:

To governments:
- Integrate environmental concerns into existing government training programmes.
- Strengthen organisational framework.

To NGOs:
NGOs should build their own capacity to
- develop and conduct special training programmes.
- develop materials and document local case studies.

To international agencies:
- Build capacity of governments and NGOs for the reasons noted above.
- Donor agencies should incorporate capacity-building components into projects.

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## 8. Appendices

Appendix A

**Steps for Developing a Communication Plan : helpful questions to guide developing a communication plan.**
*- Ministry of Housing, Spatial Planning and the Environment, Government of the Netherlands.*

**Step 1 Analysis of issues**

1. What is the character and extent of the issue?

2. What are the causes of the issue? Try to distinguish technical from human factors.

3. What are the targets of the policy?

4. What solutions are possible? Try to distinguish technical and human factors.

**Step 2 Outline the role of communication**

1. What instruments can be used to solve the problem and to change the behaviour of the target group?

2. What is the role of communication within this mix of instruments?

**Step 3 Determination of the target groups**

1. Who are responsible for the issues in general ? Make an overview of those target groups that play a role. Try to rank them in order of importance.

2. Do these target groups know enough about the issues or is a lack of knowledge one of the causes of the problem?

3. Is the attitude of the target groups the cause of the problem? Are the target groups aware of the issues? Do they realise the impact of the problem? Are target groups willing to contribute to solutions?

4. What behaviour of the target groups contributed to the problem? What do target groups have to do to contribute to the solutions? Are target groups able to behave as you wish? Are there any constraints?

5. What are the social-demographic characteristics of the target groups? (Size, sex, education, profession, residential area, income, civil status, position within network, membership of organisations.)

6. Which media are used by the target group?

Has the target group adjusted to auditory or visual media? Are there any address files of your target group available? Are there specific organisations that usually inform your target group? Are those organisations willing to act as an intermediary for your message?

**Step 4 Determination of communication targets**

*Note that this step is specifically what you want to achieve with communication, not about what you want to achieve with the entire mix of policy instruments that will be used. Try to define your communication targets based on the policy targets. Try to express the targets as verbs. Try to add percentages and dates.*

1. What are the communication targets concerning attention?

2. What are the communication targets concerning awareness, knowledge, and understanding?

3. What are the communication targets concerning willingness and motivation (attitude)?

4. What are the communication targets concerning behaviour and skills?

**Step 5 Determination of the strategy / message**

1. What is the essence of the message to my target group?

2. What is the main theme and what are sub-themes?

3. Which arguments do you use?

4. What tone are you going to use?

**Step 6 Determination of means**

1. Which media are currently available?

2. Which of these media match the media used by the target groups?

3. What/who are credible sources of information?

4. Is it necessary to use new media?

**Step 7 The budget**

1. What budget is needed to finance the communication activities?

2. In which way can the activities be financed?

3. If the available budget is insufficient, is it possible:

- to find additional services
- to cooperate with other authorities or organisations?
- to call in private organisations to carry out the activities?
- to phase activities so that costs are spread over a longer period?

4. If it is not possible to replenish the budget, can priorities be established?

**Step 8 Organisation**

1. Division of tasks: which tasks and responsibilities can be distinguished?

2. How can these tasks be coordinated?

3. Offers of cooperation : is there a possibility of working more effectively and efficiently ?

4. Can we call in private organisations to carry out communication activities?

**Step 9 Plan**

1. Can you make a list of the activities in chronological order?

2. Who (person/institution) has to carry out which activity and when?

**Step 10 Evaluation**

1. How are we going to assess the results? ( Knowledge, attitude, behaviour.) Which methods are we going to use?

2. How are we going to give feedback to the target groups?

3. Have we reached our aim?

4. How will we adjust our activities on the basis of the evaluation?

When education is part of the strategy you have to take into account the different modes of education and the specific educational systems you are dealing with. Integrating environmental education into the school system takes a rather long time and a special strategy to approach the different actors in the formal education system. Before all students in a country can benefit more than ten years of intensive effort and investment are needed.

Appendix B

**What is meant by environmental communication:**
According to the Commission on Education and Communication, IUCN, environmental communication is a two-way process of information exchange to mobilise individual and collective action for the environment. Communication is an essential instrument to achieve policy or a project's objectives, and requires a planned systematic approach, involving stakeholders and beneficiaries.

Communication has different roles in different parts of a project, strategy or policy. It is important to know where you are in these phases, otherwise you can waste effort and resources. Communication plays a role in agenda setting or project identification, policy or project formulation, implementation, monitoring, evaluation and maintaining control.

Communication can play an advocacy role, to present information in an argument in order to gain acceptance by political and social leaders, to put issues on the social agenda and to prepare society for initiatives. Communication can equally be used to voice the concerns of the grassroots to policy makers, or providers of services.

An important component of communication is listening; to clarify the issues, understand people's knowledge, perceptions, attitudes and readiness to become involved, actual practices, barriers to change, and potential benefits. This permits communication efforts to be based on solving problems that cause inappropriate practices, brought about by a lack of knowledge, by attitudes or ability to take action. Communication is most effective when linked to a specific issue for which local action is possible and benefits are apparent.

Based on this research, groups are identified and segmented according to what they know, feel and do because each requires a particular strategy. Messages are designed according to whether they need to affect attitudes, knowledge, or practice. Educational programmes or training may be required in more complex situations and to work on changing practice. Message delivery is planned according to the most appropriate ways and means to reach the specific groups (e.g., interpersonal or mass media) in order to stimulate change processes.

Communication management is used to implement a communication strategy and mobilise networks and social groups as intermediaries in developing responsibility for the issue, strengthening community participation. Communication is also used to mobilise services and resources to support the initiative. To achieve policy, communication is most effective when used along with regulatory and economic instruments.

In using the term "communication" CEC is not referring to the day to day flow of information in an organisation (internal communication);

positioning or building the image of an organisation (corporate communication); electronic communication; or mass media (though electronic means and mass media may be used as a vehicle to reach certain groups).

What is meant by environmental education:
Environmental education results in the empowering of communities to participate in the environmental management of their surroundings.

Environmental education is a process by which individuals gain awareness of their environment and acquire and exchange the knowledge, values, skills, experiences and also the determination which will enable them to act, individually and collectively, to solve present and future environmental problems.

A general aim of EE is to encourage and assist societies throughout the world to conserve the integrity and diversity of nature and to ensure that any use of natural resources is equitable and ecologically sustainable.

Environmental education underpins education for sustainable development. A society is sustainable only if both the human condition and the condition of the ecosystem are satisfactory or improving.

Education is communication in a sustained and organised manner to bring about changes in attitudes, values, practices or knowledge. Education cannot take place without good communication, and communication involves listening as much as talking. People's perspectives on their reality, aspirations and local knowledge must be an integral part of any environmental education programme.

Education is an instrument to enable participation and learning for people of all ages, based on two-way communication and grounded in what people already know and want to know.

Target groups in EE become part of the process, equal partners in finding solutions and combining knowledge, understanding and skills as no one person has all the answers. Dialogue and learning take place when people feel that they are equal partners. The educator facilitates a process, the search for information, analysis and reflection, the acquisition of skills, and action (van Hemert et al., 1995).

The common perception of education as a one-way flow of information - usually taking place in schools - is not the broad perspective of CEC described above.

The CEC view of environmental education is also encompassed in approaches used in development communication . Because of the perception about education and its restricted use in some parts of the world, CEC interchangeably uses the term communication to refer to mobilising and enabling communities outside the school system in what might otherwise be regarded as non-formal environmental education.

Appendix C

(The following definitions are from "Umweltbildung" by Hans Ulrich Fuhrke, Thomas Krüger, Manfred Oepen, ACT, 1994)

| | General Education | Professional Education |
|---|---|---|
| **objectives** | Supply knowledge of physical, chemical and biological facts in the contexts of the natural systems and the relation to the economic, social and cultural influences from human interaction on the local, regional and global scale. | Gradual professional qualification planning, implementation and monitoring of environmentally-fri business as well as improvement a integration of ecological/environm learning in all branches of educati |
| **actors** | Primary and secondary schools, technical and polytechnical schools, universities, professional schools, classes for apprentices, courses by correspondence. | Technical schools, training instituti consultants, popular universities, chambers of commerce, chambers foreign trade, associations of expor business, professional organisation industrial associations, companies, industry, courses by correspondenc |
| **target groups** | School students, university and college students, apprentices. | All professional groups, craftsmen. farmers, technicians, social worker physicians, administrators, lawyers decision-makers, trainers. |
| **instruments** | Curricula, specialised courses, adapted teaching material, demonstration mat books, slides/movie/video/computer, laboratory, experimental kits, school gardens, project-centred weeks, on the job training, scholarships (students' research), international transfer of knowledge and technology, twinning betw teaching institutions as well as between business and schools. | |
| **lessons learned** | - Limited effect by pure supply of knowledge in the long run<br>- enlarge teaching by integrating various disciplines and problem oriented teaching<br>- intensify with extra curricular activities, camps, project-centered weeks<br>- profound training of teaching personnel essential. | - Recognise importance of a structurally and logistically stat environment with qualified teaching personnel<br>- overcome mutual walling off between social and natural sciences<br>- reduce economic obstacles, attractions of free market econo<br>- enlarge interdisciplinary teachi offer. |

| Non-Formal Education | Awareness | Communication |
|---|---|---|
| Supply knowledge of procedure, of values and of socio-communicative and technical competence in order to change norms and behaviour in favour of sustainable development and to solve environmental problems through action. | Emotional involvement may be stimulated by sensual experiences linked to spiritual and intuitive cognitive processes strong overlapping with non-formal education and communication. | Dialogue enabling the participants to understand the key factors of their environment and the mutual effects and to solve ecological problems wherever necessary. Unfortunately often reduced to media and to mere fact accumulation. Intermediary between information and action. |
| National and international NGOs, journalists, teachers, consultants, religious and opinion leaders, political parties, associations, religious communities, and those of common interests, ministries, administrative units of environmental relevance, research institutions and ecological centres. | Public institutions, national and local NGOs, teachers, journalists, idols, popstars, sports people, heroes, religious and spiritual leaders. | Administrative units, public institutions of environmental relevance, national and international NGOs, radio and TV, movie/video production, companies, editors, press, association of journalists, public relations and propaganda, health centres, audiovisual units in ministries, teaching institutions. |
| Children, adolescents, men, women, agricultural companies, arts and crafts, export, multiplying agents in political/administration/business/ media/culture, teachers, socially relevant groups, NGOs, self-help groups, community initiatives, cooperatives. | Young people, marginal groups, teachers, journalists, decision-makers in politics/administration/ business. | General public, multiplying agents and opinion leaders, specific groups according to age/sex/region of professional interest, listening or reading clubs, consultants and motivators. |
| - In-service training<br>- courses, workshops, excursions or project centred weeks in schools, posters, slides, newspapers, school magazine, ecological reports<br>- demonstrations, competitions, nature camps, round tables<br>- group media, traditional media. | Mass media, theatre, wall newspapers or public speakers in meeting places like markets, schools or during public hikes, didactic group media stimulating dialogue, traditional media. | News media such as TV, radio, movie, multimedia campaign, non-news media such as audiovisuals, newspapers, school magazines, ecological reports, didactic group media, theatre, traditional media, green round table. |
| - Enhance participation methods<br>- insist on intuitive dimension of awareness<br>- link information and communication with action<br>- use methods with action<br>- use methods of mediation<br>- apply interdisciplinary and action-oriented teaching concepts. | - Aim at "recognising and involvement"<br>- adjust to long term effects<br>- concept "heating up of society"<br>- make use of experience in environmental psychology<br>- group with non-formal education and communication because of overlapping. | - Communication is a key work of IEC information, education<br>- use mass media only in the begining of innovation process<br>- prefer media which can be produced by the participants themselves and thus facilitate dialogue. |

**Lesson learned from the case studies and exchanges at the workshop**

The participants agreed that partnerships and cooperation with many different actors are needed to undertake the task of educating and communicating with the diverse groups in society. Develop a policy and a strategy with policy makers, the targets of the policy and the groups who will play a role in educating and communicating for more effective results. Political commitment to environmental education and communication in the region can be improved.

**A strategy is based on vision, mission, goals, objectives**

1. A strategic approach to education and communication is needed (with a long-term mission). This will need a dynamic, flexible response as environmental issues change and people's understanding and awareness changes (space and time).
2. Objectives need to be clear before a strategy is designed.
3. Environmental issues need to be prioritised by the community involved. Government can and should identify national priorities.
4. In-depth knowledge of issues and situations are needed to design the strategy, i.e., do your homework first - research perceptions and practices and analyses and beware of assumptions.
5. Identify target groups and prepare a programme to suit them through a participatory process.
6. Integrate government knowledge and people's wisdom (scientific knowledge and indigenous wisdom and values).
7. People have a right to information on public decisions and interventions.
8. If the legal and institutional framework does not exist, then develop them.
9. Develop the capacity of educators.
10. Integrate environmental education and communication into all programmes and projects - they are not add-ons.
11. There should be effective monitoring and evaluation of education and communication programmes.

**Essentials in building partnerships**

1. Shared vision, mutual benefits & respect and common objectives are the basis for building partnerships; keep the common result wanted to the front.
2. Precisely define responsibilities of the partners, terms of reference and precise framework of roles and responsibility.
3. Accountability, honesty, transparency, reciprocity, trust, shared decision making and credibility are essential components for working in partnerships
4. Partners need to understand the mandate of each other.
5. Skill, tact and understanding are in need in a difficult partnership.
6. A proactive approach and regular interaction and dialogue are needed to sustain the partnership.
7. Flexibility and accommodation of diverse views are required.
8. Use the strengths of other organisations to complement your own so as to achieve the objectives.
9. Minimise and simplify rules and regulations when dealing with community groups.
10. Intra-government partnerships are essential to coordinate for environmental education and communication.

### International agencies

1. International agencies are not well coordinated in the field of environmental education and communication, and there are overlaps and duplication.
2. International agencies must not impose their own policies and priorities.
3. International agencies need to be more transparent, and more responsive in their attitude towards the grassroots and work more closely with NGOs
4. Clear terms of reference for operations should be available.
5. International agencies should practice what they preach, there is a double standard and no green approach .
6. Preference should be given to local expertise in formulating, designing communication.

### A model for a national workshop to explore the use of communication and education as instruments of policy

This model can be a guide to preparing a workshop; it can, of course, have a completely different orientation and be rephrased. It suggests the steps to prepare a meeting aimed at a product.

#### Rationale

Legal and financial mechanisms are not enough to successfully form and implement environmental policy. Policy makers are realising that they need to pay more attention to the role of more social instruments such as education and communication and the role that they can play, in particular the role of communication in engaging stakeholders in a partnership of creating new policies and for the acceptance of environmental policies.

#### Objectives

The workshop will explore the successes and challenges of environmental education and communication as a policy instrument. It will provide managers and specialists from government and NGOs with a theoretical framework, examples from practices and hands-on experience in strategy design for the use of communication /education as a policy instrument.

#### Organisation

The workshop is organised to give an extra impulse to education and communication as more strategic instruments of policy.

#### Preparation

Prepare back ground on an issue (it could be theoretical to build practice at working through a strategy process or an actual case or cases). Research the issue, who is involved, how do they think about the issue, what problems do they see. Prepare backgrounds on the different perceptions of the groups. What problems would they have in changing practice.

Invite different representatives of the groups who have a stake in the issue to the workshop to brief the participants and answer questions.

**Sample Workshop Design**

| Action | Why | Special questions / tools |
|---|---|---|
| **Day 1**<br>Late afternoon<br>Arrival, welcome<br>**registration**<br>Dinner with VIPs | Welcoming, feeling at ease, orientation, organising poster sessions.<br>Attention of policy makers to education & communication as instruments of policy | Name badges<br>Workshop pack<br>Participant list |
| **Official inauguration**<br>3 speakers | Commitments of policy makers to E&C | |
| **Day 2** (Official & formal part of meeting commences evening before so the next day has more of a working team mood) | | |
| **Morning Plenary + Introductions/** expectations (45min)<br>**Presentations** (90 min)<br>+ Social instruments for environmental policy<br>+ Influencing people's lifestyles and attitudes: a learning process<br>+Tools for communication | **Getting to know who is there and why they are here**<br><br>Provide a common understanding of the framework in which education and communication will be discussed as instruments to develop policy, to implement it and how learning processes occur. | Ask participants to write expectations on a card, 1-3 words in large letters. As each reads and passes to facilitator, cluster on a pin board.<br>Make presentations visual, preferably on cards pinned to boards so that the full story can be seen. Or overheads with sheets handed out at the end. |
| **Discussion** (30min)<br>**Working groups** (1hr)<br>**On national policy areas such as**<br>• biodiversity conservation<br>• sustainability<br>• desertification<br>• climate and on local issues<br>• energy<br>• waste<br>• forest<br>• protected areas<br>• water<br>• local agenda 21 | discuss the practice of education and communication and learning processes as an instrument in relation to some national policy issues and local policy issues; what could have been improved, what went well. | X working groups of 15 people maximum. Case study to show how communication was used to achieve policy objectives / where policy failed because of weak communication / education. Managing policy forming processes. |

| | | |
|---|---|---|
| | | What changes took place, what still has to be achieved. Presenting steps in communication strategy from an analysis of issues to target groups, to message, means, organisation. |
| Lunch<br>Afternoon working groups | continue same working groups as morning | presentation of other cases and analysis |
| Dinner | | |
| Evening poster session<br>Presenters have a prepared poster that is fixed to a board. Short introductions are made, then participants walk around and view the presentations | Presentations by organisations / national or international to improve network. Presentations of companies working in environmentally-sound ways to encourage work and involve in network | Presenters have tp prepare posteer that is fixed to a board. Short introductions are made, then participants walk around and view the presentations |
| **Day 3 This could be expanded to include another day or two if working on actual issues** | | |
| Morning<br>**Working groups** to design a communication strategy for a local policy issue (imaginary or real). National policies (imaginary or real) | giving practical experience in designing a strategy: addressing problems | X working groups briefing on the situation from manager issue, what has to change, target groups perceptions. Collective planning of a strategy by the working group using a prepared framework. Use visual techniques by placing key phrases on cards and pinning to boards as the strategy evolves. |
| Lunch<br>Working groups (1hr)<br>This report back session could take place a day or two later if more time is to be spent on developing an actual strategy. | | |
| Presentation of working groups to local and national policy makers and | to show what communication / education could provide, how it is | use visual presentations on boards to present outlines of the strategy to show the networks |

| | | |
|---|---|---|
| external experts (90min) reactions and discussion | to show what communication/ education could provide, how it is organised to help policy makers see the resources and effort needed, and the potential | and target groups and breakdown of messages and approaches required |
| Forum discussion by experts on the findings of the expert session | Opportunities for Minister to hear views on role of communication Recommendations for next steps | Forum Panel |
| Reflection on communication and education by Minister of Environment & Department head | Elicit commitment to invest more in communication/ education | |
| Closing Final dinner and closing event | | |

**Work Plan Preparation of the Workshop**

| Months | Action/budget |
|---|---|
| -6 to -12 | Discuss framework of program<br>steering committee decision<br>project development<br>funding<br>Contract locality<br>Prepare invitation list<br>Invite VIPs<br>Prepare workshop flyer/ letter - first mailing of workshop: invite regarding poster sessions |
| -5 | First draft conference paper/ briefing on the issues<br>Working groups, speakers identified invited |
| -4 | Agreements regarding speakers |
| -3 | Second mailing/ follow up on key participants attendance<br>Briefing on poster session |

| | |
|---|---|
| -2 | Print and distribute pre-workshop paper<br>Brief speakers and workshop leaders |
| -1 | Logistical arrangements/ facilities check/ equipment/ set up for poster session<br>Check VIPs /press |
| 0 | Workshop |
| +1 | Report finalised printed<br>Report distributed<br>Funding report |