Environmental Education in the South Pacific

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Environmental education is currently fashionable, but some educators view it with suspicion as a 'trendy subject' that will disrupt their carefully planned syllabi which are geared largely towards the passing of examinations.

In the South Pacific in recent years there have been a number of attempts to increase people's awareness of their surroundings and to build up a respect for what is loosely termed our physical environment. These programmes have included increasing the number of environmental examples in a range of primary and secondary school subjects, formal courses in environmental planning at tertiary level, and conservation messages through the media.

The interpretation of environmental education differs widely throughout the Pacific, and courses or parts of syllabi which might be called environmental studies are very different from one another, ranging from those which teach solely ecological concepts or conservation, to those which incorporate the role of people within their environment. Where there is a conscious effort to include environmental awareness as part of the syllabus, local examples are generally included, even in countries which operate on an external school system. For example, Fiji, Tonga, Western Samoa, Niue and the Cook Islands use a syllabus designed by UNDP/UNESCO for social science and basic science which includes local examples. There are still different interpretations of environmental education by different countries however. Some of these result from varying definitions of terms and thus it is wise to define the areas of the subject before looking at the enactment of programmes.

The environment

The environment is a population's surroundings, both local and global, and social and physical. Given this broad definition it is clear that any study of the environment includes every discipline, from the pure sciences to engineering and literature. Generally, environmental studies
restrict this all encompassing definition to one which implies protection, conservation and management of the physical environments as well as an understanding of the processes which create and alter those environments. As humans necessarily play a major role in these processes, environmental studies must involve an understanding of human ecology and habitats.

Environmental education

Environmental education, the systematic instruction of people in the knowledge and care of their surroundings, may be carried out in a number of ways. The most obvious is through the school system, but environmental education may take many other forms, such as elective subjects in the tertiary education system, or through the news media by means of radio broadcasts or newspaper articles. Environmental education may also be carried out by government agencies or other local institutions involved with resource management, or through overview bodies developed specifically to oversee the management of global, regional, and local environments. For example, the United Nations Environment Programme (UNEP), the Australian Development Assistance Bureau (ADAB), the South Pacific Commission (SPC) and its agencies such as the South Pacific Regional Environment Programme (SPREP), and the South Pacific Action Committee on Human Ecology and the Environment (SPACHEE), based at the University of the South Pacific in Fiji. All of these bodies are involved in developing curriculum materials, hosting seminars and training workshops, and in backing media campaigns.

The Pacific environment

In 1982 in the SPREP Report of the Conference on the Human Environment in the South Pacific held in the Cook Islands, a concern was expressed that:

much of the present teaching material is irrelevant to the island environment; where special material has been prepared by the SPC, it has been much appreciated but even this does not apply to all different island situations. (SPREP/SPEC/ESCAP/UNEP, 1982a: p.69.)

The different island situations refer not only to the physical
environments of the countries but also to their socio-economic and cultural characteristics. There are four island types in the Pacific:

1. Large continental islands
2. Volcanic islands
3. Elevated reef islands
4. Atolls and other low islands (carbonate rock).

Some island groups consist of more than one island type, and all are scattered throughout the region (SPREP, et al, 1982a; p.48). The island types include approximately 2,000 kinds of ecosystems and this is one reason it is difficult to provide a single package of environmental education materials to the South Pacific. People who have never left Kiribati (a group of coral atolls), for instance, can have little appreciation of the range of climates, inland waters, and soil types found on volcanic islands such as those in Samoa or Solomon Islands, or continental islands such as Papua New Guinea or Fiji.

Pacific Islands also have a great deal in common which does lend some support to the idea of regional environmental planning. All the countries under study have coral reefs and complex and fragile ecosystems which must be managed carefully if the fishing livelihood of the people is not to be threatened.

To cope with major ecological crises the South Pacific nations need funds and expertise, but their size, isolation, generally low gross national products and their dependence on outside powers either for government or economic development, have combined to ensure that environmental education has a low priority. In not so poor countries, for example, Nauru, where the average annual per capita income is estimated to be more than A$15,000 (SPC, 1981), the highest in the Pacific and one of the highest in the world, conservation of the environment is not very high on the government's list of priorities.

Current Environmental Education Programmes

South Pacific environments, with their variety of isolated island types and low degree of urbanisation, present quite different environmental problems from most other parts of the globe. This paper, therefore, includes a caution to environmental educators from outside the region. Programmes designed for another area may not be relevant to the South Pacific, although one recognises that the interrelations of the global system mean that no one place can ignore the environmental
problems in the rest of the world.

**Primary schools**

Children attend primary or junior school from five to six years until they are about twelve years old. Much of the South Pacific operates on a New Zealand or Australian school system which includes social studies and basic science as part of the school programme. It is in these subjects that the principles of environmental science may be taught, albeit in an indirect manner. For instance, at a very junior level (class 1) students are instructed on the role of the health inspector and on taking care of their compound. In basic science they are taught to recognise some plants and to understand the environmental significance of trees.

There have been a number of movements in recent years to have environmental education taught as a more distinct part of the school curriculum. In 1979 the South Pacific Commission produced a set of *Environmental Mini-Lessons* for use in primary and secondary schools throughout the Pacific, with the recommendation that they be used either as a complete course of short units on the environment, or as supplementary material for existing courses. The lessons were distributed and schools asked to trial them (SPC, 1979). While the private opinion of some educators was that the 'Mini-lessons' were not entirely appropriate to every environment, they were considered to be well-produced and were readily available. That the South Pacific Commission has been asked to reprint the materials, is an indication of the interest in and need for environmental education materials throughout the Pacific.

**Secondary schools**

Secondary schools in the South Pacific generally have a strong emphasis on environmental studies. In Fiji a UNDP/UNESCO Curriculum Development Unit for secondary schools produced a social science programme in 1978 which examines the role of people in their environment, how they survive (i.e. resource use), and the interrelationships of all parts of the system (i.e. spaceship earth). This programme is also used in secondary schools in Tonga, Western Samoa and the Cook Islands. Examples are altered to fit the local environment but otherwise the principles remain the same. Solomon Islands and Papua New
Guinea have their own high school systems. The UNDP Basic Science Handbook is used as a model in Vanuatu, Fiji, Tonga and Western Samoa. In Tonga the Forms 1-4 science course has evolved around an environmental theme with one unit of study entitled 'Man and his Influence on Ecosystems'. Biological science contains a similar unit. In Niue the concepts of ecology are taught in the first year secondary school natural science programme.

Tertiary institutions

There is a well-developed interest in environmental education in the major tertiary institutions of the South Pacific. Both the University of Papua New Guinea in Port Moresby and the University of the South Pacific, a regional institution based in Fiji, have environmental courses and entire degree programmes straddling the arts and science disciplines. Further north in Micronesia, environmental courses are offered at the University of Guam and the Community College of Micronesia at Ponape.

In other colleges, such as the Fiji Institute of Technology in Suva and the University of Technology in Lae, courses for town planners, architects, and other technicians, touch on environmental issues as related to the particular subject taught. It is in the universities where the main emphasis is found however, not only in teaching but in extensive research programmes carried out by individual staff and by teams in association with organizations such as SPREP and SPC. In addition, a number of staff at both UPNG and USP and the University of Technology at Lae, Papua New Guinea, and the University of Guam have taken on consultancies on environmental related topics for regional governments. As examples of tertiary programmes in environmental studies, environmental science is taught as a separate programme as well as an integral part of other disciplines in both the University of Papua New Guinea and the University of the South Pacific. At UPNG, a three-year course in environmental science is offered to students from both the Arts and Science faculties. An emphasis on Papua New Guinea's natural resources, and the existence of the Office of the Environment and Conservation in Papua New Guinea, mean that graduates are generally able to find employment after undertaking the course.

At the University of the South Pacific environmental studies are an
integral part of the Geography Department's courses in the School of Social and Economic Development, as well as in a number of science courses taught in the School of Pure and Applied Sciences and in the Institutes of Natural and Marine Resources. Geography operates a half-year foundation course 'Human Ecology: The Relations of People with their Environment' in which are examined the interrelations between humans and their natural environment. This is followed in degree studies by physical and cultural geography courses, 'Geography of Food and Agriculture in the Tropical World', and 'Resource Conservation and Management', all of which are concerned with the human and physical environments and ecological principles. In the School of Pure and Applied Sciences the Biology Department takes the most direct look at the nature of ecosystems and the role of humans in its first year biology course and third year 'Environmental Biology', but few subjects ignore the role of humans and their impact on the environment.

In response to a request from the regional governments of the South Pacific that the University of the South Pacific support the objectives of the SPREP Action Plan, the University has established a Bachelor of Science in Environmental Studies in order to provide students with a background in both the social and the natural sciences. In the programme students undertake a science degree majoring in either biology, physics and chemistry, as well as a complete programme of geography. Despite the hope that students would, on graduating, find a career in national planning or environmental management or assessment, no student enrolled in the programme in the first year of operation (1983), and in 1984 only three enrolled. The lack of interest may be blamed on poor promotion of the programme throughout the region, a responsibility which was to have been undertaken by SPREP. The University of the South Pacific is now actively promoting the programme to regional governments and is confident of an increase of number of enrolments in 1985 and 1986.

Institutions and environmental education and training

A number of regional and international institutions are involved in environmental education and training in the South Pacific. The role of the South Pacific Commission in the preparation of school curriculum material has already been mentioned, but it also has broader interests in the environment through SPREP, a joint body of UNEP, ESCAP, SPC and SPEC. As well as research, SPREP is involved in
environmental education and training by mounting regional courses, such as that on ‘Environmental Management for Resource Development’ held in Suva in 1982 and attended by middle and upper level civil servants from ten regional governments, and the ‘Third South Pacific National Parks and Reserves Conference’ held in Western Samoa in mid-1985.

**Government departments, committees and legislation**

Few South Pacific countries have recognised the importance of environmental management to the extent of Papua New Guinea, which has an Office of the Environment and Conservation, although there is a great deal of environmental legislation in different Pacific countries (SPREP, et al, 1982a, p.63). The legislation is mostly to do with the management of water and wildlife but enforcement is inadequate. As the SPREP Human Environment Conference in the Cook Islands in 1982 was informed

> No country appears to have an environmental statute which completely meets its needs, probably because many have been modelled on examples only marginally relevant to their circumstances. Emphasis often lies on the aesthetics of environmental protection rather than the imperative of resource conservation (ibid.).

Generally, South Pacific nations have a committee as part of another department, or straddling several relevant departments, which advises government on environmental policy. In Fiji, the interdepartmental Environmental Management Committee (EMC) is an advisory body only, hampered from acting openly on public issues because the civil servants involved fear losing their jobs. One of the EMC’s roles is to advise the Ministry of Education on new environmental course material, but in addition, the committee is becoming involved in the education of industries about the environmental impact of their methods of production. Under the existing powers of the Directorate of Town and Country Planning, new industries with potential environmental concerns, can be required to make environmental impact statements. However, since these powers are not legislated, some political pressure can be exerted to avoid having to do this.

The Environmental Management Committee is concerned with ensuring that the new industries at least do comply with requests for environment
statements: Existing industries are a problem however and for these, new legislation will have to be enacted. An EMC subcommittee has been established to draft the new legislation but this will take some time to reach parliament. Strong environmental protection legislation is needed urgently in Fiji as the levels of heavy metals, bacteria etc., increase in coastal waters with rising industrialisation (*Fiji Times*, 14 June 1984, p.18). For the wider Pacific, SPREP carried out a review of environmental legislation in 1983.

Sometimes individual departments or organizations, such as Forestry or the National Trust, appoint environmental officers in an attempt to educate the public about environmental issues. A lack of funds and skilled people frequently means that such positions are not ongoing. For example, in Papua New Guinea three government departments which had environmental education sections recently lost three positions due to budget cuts (Eaton, 1983, p.86).

### Introducing Environmental Education

There is some debate as to whether or not environmental education should be introduced into the teaching of every discipline or subject in formal education systems (Bryant, 1984, p.24). Obviously school and college systems operate under a number of constraints, such as examinations, which may limit the introduction of environmental education throughout the system, but it is also questionable whether formal lessons will have the desired effect of raising students' level of awareness of environmental matters.

There are several ways in which environmental education may be taught:

1. as a separate subject in schools or university
2. as an integrated part of the curriculum whereby environmental principles are part of every subject
3. by the means of short courses, distance education, use of media etc. for people not within the formal education system.

While this part of the paper discusses the formal education system only, it is important to note that not everyone in the Pacific has many years of formal education, and in some countries many adults have never attended high school. For this reason any environmental education programme cannot afford to depend only on school and university
courses for the dissemination of knowledge.

Structure/mechanism for introducing environmental education

In order that environmental education is taught in schools and universities, whether in an integrated manner or separately, a number of structures must be created to facilitate its teaching. As a result of SPREP meetings and discussions among environmental educators, there are a number of proposals already prepared, some of which have already been enacted.

1. An Environmental Education and Training Network (EETN) has been established by SPREP. This links institutions involved in environmental education and is a central point for gathering curriculum and other related materials. Information pamphlets on environmental education and training were prepared and disseminated by EETN during 1985.

2. The establishment of a SPREP radio project involving the training of broadcasters and production of programmes for an environmental radio series.

3. Publication of a quarterly environmental newsletter.

4. Publication of an environmental education journal PLES, for the Pacific region, twice annually.

5. A review and evaluation of school and college syllabi with a view to upgrading the standard and relevance of environmental topics and to standardize the material throughout the South Pacific whilst recognizing the uniqueness of each country.

6. The production of local environmental resource materials for schools and colleges throughout the region.

7. The production of secondary school textbooks on environmental science using South Pacific examples.

8. Teachers in all disciplines need to attend short courses which instruct them in the responsibilities of all people to nature and the way in which their discipline may integrate with environmental concerns.

9. Universities in the region need post-graduate programmes (such as an MSc in applied ecology) to equip students for research and greater involvement in environmental matters.

10. Major external examinations must change the nature of their content regularly in order to keep up with the trends in education. At this time when environmental education is increasing in importance there is little incentive for teachers or students if the material is not examined. Since much of the South Pacific depends
on New Zealand external examinations then some of this change must come from New Zealand.

11. Greater commitment of governments to environmental education. Extension officers in departments, such as forestry or agriculture and fisheries in some countries, carry out an educational role in developing national parks, and use them as outdoor classrooms for school children (Bernon, 1978, p.13). Budgetary constraints often mean that these positions are axed however.

12. Adequate consultation with course developers, curriculum development personnel and teachers at all levels of the formal education system is needed before any curriculum changes may be made. An attitude in Fiji amongst Ministry of Education personnel is that outside agencies too often try to slot ‘trendy’ topics into the school system without fully understanding the education structure, the importance of external examinations, and the shortage of resources and trained staff.

13. Universities in the South Pacific have a major role in environmental education and may broaden their involvement in the structure of expanding environmental awareness in the following ways:

(a) By expanding on-campus degree, diploma and certificate courses, and also the off-campus extension courses.

(b) By running more in-service, short-term training and continuing education courses, both for government and business policy makers and the public.

(c) By conducting research to assess the environmental impact of regional and local development proposals and to forecast the potential impact of proposed development projects.

(d) To provide consultants to regional governments and organizations (Thaman, 1981, p.3).

In essence it would appear that an integrated approach to environmental education is preferred, although some overall responsibility would have to be taken for fear of “weakened authority over the subject” (Fiji Environmental Management Committee, 1981, p.2). To avoid the haphazard development of the programme, there would have to be trained staff provided in the schools who could co-ordinate inter- and intra-disciplinary environmental education. The final structure would be the responsibility of the countries involved after regional curriculum development meetings.
Constraints on environmental education

There are a number of constraints on the introduction of additional environmental education to Pacific Island schools and universities.

1. The Education Department in Fiji, as well as the course and curriculum developers for primary and secondary schools, some of whom are based at the University of the South Pacific, are against the introduction of environmental education as a separate discipline. They prefer the integrated approach of environmental principles being taught in every subject, but are wary of both approaches because of the already very crowded school curricula.

2. The same people are concerned that the entire examination and school syllabi be changed before the new subjects/units can be introduced. While they are not examinable they will not be taught. This view is espoused even by people who do not regard end of year external examinations with favour, but they have come to terms with them because of the intense competition for qualifications and employment.

3. Environmental studies designed to date (for example, the South Pacific Commission's Environmental Mini-Lessons) have not taken into account the variety of circumstances of the many Pacific Islands. A consensus of educators in Fiji is that a course developed externally cannot cater adequately for the needs of the whole region. On the other hand, the materials have recently been reprinted by SPREP in response to requests from schools throughout the region, indicating a need for environmental education material.

4. Lack of skilled personnel. There is a shortage of teachers in the Pacific, despite public service cutbacks in Fiji, for example, which have left some graduate teachers without jobs. Those with jobs teach a variety of subjects and have little time for upgrading their knowledge through university courses or degrees.

5. Shortage of schools. In some countries, such as Papua New Guinea, only 60 per cent of children enter primary school and only 40 per cent of those are selected for high school (Eaton, 1983, p.87).

6. Different Pacific countries have different interpretations of environmental education. In Tonga it may mean hygiene, health and family studies, while in Tuvalu there is an attempt to instruct children in an integrated way about their relationships with the environment. While the UNDP/UNESCO curricula guide countries to some extent, the final content is left up to teachers.

7. Language difficulties. Carefully designed educational materials
sometimes fail because the language used is too complex for both the students and the teachers who are often not highly educated. An example is in Solomon Islands where some materials for an environmental approach to science were adopted from the African Primary Science Programme. The effectiveness of the programme was limited because the language was too sophisticated for the teachers (UNDP, 1980, p.7).

8. Relevant environmental materials are not always available. These include audio-visual equipment, teachers with degrees in appropriate subjects, more and better quality locally produced literature such as the *Green Book of Fiji*.

**Conclusion**

It is clear from the examination of environmental education materials that there is not the same level of interest or knowledge about the environment throughout the Pacific. Nor is there the same level of commitment from regional governments. Any programmes which are designed must take these discrepancies into consideration. Regional bodies, such as SPREP, may be able to cater for the broad interests of each South Pacific country, but it must always be after full consultation with people who are familiar with the cultures and environments of those countries.

There are a number of other constraints to expanding environmental education in the South Pacific. The different interpretations of the environment, the crowded nature of the curricula, language difficulties, the importance of examinations, and the shortage of resources and skilled personnel are some of the important problems. The major problem though is how to co-ordinate such programmes and to gain support from the diverse countries and educators. An impression gained during research for this paper was that some members of education departments are not happy about being told to incorporate new material into their programmes and would prefer to make decisions on curricula changes after consultation. Before these decisions can be taken there must be discussions throughout the Pacific which aim at reaching a unified interpretation of the nature of environmental education, and the meaning of the term environmental science. Following that, as discussed earlier, a decision must be made about how and where environmental education is to be taught. Should it be an integrated part of the formal school system? Should it be taught as a separate discipline
at all levels? Is environmental education something which can also be taught through the media?

It would seem that countries of the South Pacific are party to all methods of environmental education and training, but that some are more informed and committed than others. A broad based approach to environmental education and training seems to be the most sensible solution, but it would appear that some educators need more training themselves before they can educate their public.

Bibliography

Community College of Micronesia (1975) General Catalog. Ponape, Eastern Caroline Islands.
Fiji Environmental Management Committee (1981) Environmental Education in Fiji (mimeo), August, Suva.
Fiji Ministry of Education (1979a) Making a Living. Social Science Committee in co-operation with the UNDP/UNESCO Secondary School Curriculum Development Unit.
Fiji Ministry of Education (1983) Environmental Education in the Secondary
Curriculum (mimeo). Nasese: Curriculum Development Unit.
Niue Education Department (1975) Natural Science Syllabus Class 1-Form 1, Niue.
of the South Pacific, Suva.


