

# Teacher Training for Education on Marine Resources Conservation in Thailand

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## INTRODUCTION

The coastal environment and natural resources along the Thailand coasts, including mangroves, coral reefs, sea grass beds, and beaches, are heavily used for a number of human activities such as tourism, industrial and infrastructural development, fisheries and aquaculture to name a few. Coastal zone development has largely been carried out in a haphazard way, creating a negative impact on the environment as well as on coastal communities, causing habitat degradation, pollution and conflict over resource use, all of which have broader social implications. There is an urgent need to conserve the coastal resources and address the issue of effective coastal zone planning and management.

One of the main underlying causes of inappropriate coastal land and sea use is an inadequate knowledge of coastal resources and sustainable use by the general public and the administrators of coastal communities. Teachers are a valuable human resource in transferring knowledge and creating awareness on environmental issues and sustainable use of natural resources to younger generations as well as communities. Providing access to knowledge through

local schoolteachers is considered an essential path to implanting knowledge in society for the long term.

Periodic training of teachers on environmental issues has been carried out in the past by various government and nongovernment agencies. However, often teachers have received some additional knowledge on the subject matter, but not effective teaching tools to be used. Since teachers have many responsibilities through their regular work at schools, most do not have time to set up or update their own teaching curriculum with any regularity, and only some innovative teachers can apply new knowledge for their own use. Thus most past efforts on teacher training have only partially succeeded in providing improved knowledge to the younger generations.

The objectives of this project were to develop teaching manuals for teachers, to be used in school as a key component of teaching activities, and provide training activities in order to improve the teaching and learning process. The expected outcome is to increase awareness and a sense of ownership of marine and coastal resources among children in coastal communities of the Andaman Sea.

Activities covered development of curricula and teaching manuals on coastal and marine resources and

*Obura, D.O., Tamelander, J., & Linden, O. (Eds) (2008). Ten years after bleaching - facing the consequences of climate change in the Indian Ocean. CORDIO Status Report 2008. Coastal Oceans Research and Development in the Indian Ocean/Sida-SAREC. Mombasa. <http://www.cordioea.org>*



**Figure 1.** The development of teaching manuals and training activities.

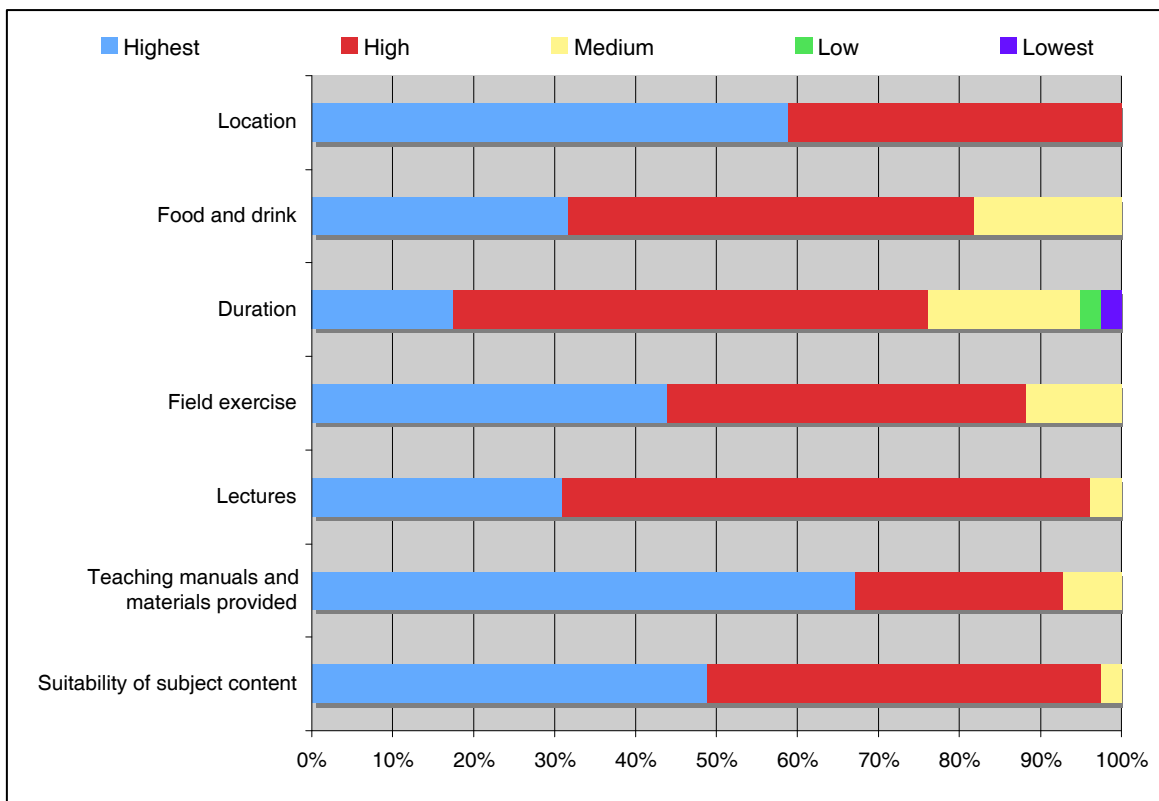
their management for primary school (year 4-6) and secondary school levels (year 7-9), and conducting training workshops for teachers at both levels. Figure 1 shows some photos from the development of teaching manuals and training activities.

### **Development of Curricula and Teaching Manuals**

A working group was established for the preparation of curricula and teaching manuals on coastal resources and management, comprising lecturers on marine environment and education from Phuket Rajabhat University (PRU) as well as a number of experienced and innovative teachers in Phuket District. A series of meetings and workshops were held to source input, define outline and formats, and draft manuals. The

materials were carefully reviewed by an advisory committee that included the educational supervisor of Phuket, an expert on coastal resources, and senior lectures from PRU, to ensure that the manuals were factually correct and contained up to date information, and in agreement with the Ministry of Education's basic education curriculum. The manuals were finalized through extensive consultation with teachers.

The teaching manuals on coastal resources and management for primary school and secondary school level comprise 6 volumes: 1. Coastal environment; 2. Coral reefs; 3. Mangroves; 4. Sea grass beds; 5. Sandy beaches and rocky shores; and 6. Beach forest. The manuals contain a wealth of information on each subject matter, and provide guidance on identifying questions, finding and evaluating information, report



**Figure 2.** Results of assessment of satisfaction with the teacher training workshops (evaluation results pooled for the two workshops).

presentation, how to subsequently apply knowledge, and suggestions for further inquiry in related subjects. In addition, they include information on the teaching and learning process, sources of additional information, and a section on evaluation and assessment with tools and criteria provided.

By emphasizing students as the learning center (Darling, 1994, Brandes, 1992) the manual for primary school level seeks to promote a dynamic and participatory learning environment. The aim is to create awareness and a capability of learning starting with simple knowledge that relates to the students' living environment. The manual for secondary school level emphasizes processes by which students create their learning activities through an inquiry cycle, using subjects relevant to their surrounding environment

(Fennimore, 1995, Lang, 1995). The teaching manuals comply with Ministry of Education directives and formats.

### Training Workshops for Teachers

Two teacher-training workshops were held; for primary school level from 17-20 October 2006 and for secondary school level 20-23 November 2006. About 40 teachers from schools in Phuket and Phang-nga provinces attended each workshop. The workshops comprised lectures, field exercises and activities identified in the teaching manuals. Group discussions and exchange of information and opinions were included. Assessment on the satisfaction of the outcome of the workshops is shown in Figure 2. The level of satisfaction with the training was high, with over

80% of the participants rating all items assessed in the “highest” and “high” level of satisfaction categories, with the exception of the duration of the training which some felt was too short (“highest” and “high” ratings were over 75%, though). Most importantly there was a general agreement among participants that the subject content of the manuals was appropriate.

## CONCLUSION AND DISCUSSION

The results from the course and material assessment as well as comments received through group discussions with teachers indicate that the teaching manuals are suitable for coastal resources in the area and welcomed by teachers. The manuals can be used in real classes as everyday guidance as well as for special projects and initiatives, they are suitable for the class levels that they target and especially useful in how they stimulate the students’ learning abilities. They also are appropriate in view of the basic education standard set by the Thai Ministry of Education. All teachers participating in the training workshops agreed to use the manuals in their teaching activities.

It is recommended that further training workshops are carried out, and also extended to include teachers in other provinces along the coast of the Andaman Sea. With more input and feedback from teachers, improvement and expansion of the teaching manuals can be carried out to cover all subjects on coastal and marine areas. Materials targeting students that link in with teaching materials may also be produced.

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