Destructive Fishing Practices Awareness

TEACHER HANDBOOK

“Save Marine Life Now!”
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EDUCATION SECRETARY’S MESSAGE

This handbook has been produced to guide teachers in their teaching in Primary Schools to implement the awareness materials produced by The Nature Conservancy.

We live in a world where the environment around us continues to change as a result of human interaction for survival. Our lives depend on resources from the land and water. Fresh air, good food and fresh water are essential for human need.

Today major fishing activities are taking place in our country and causing destruction to our marine life. Teachers must be aware of destructive fishing practices and need to plan teaching and learning activities to educate our children to protect and conserve the environment.

I acknowledge the initiative, support and partnership from The Nature Conservancy, (TNC) an international Non Government Organization (NGO). TNC’s mission is to preserve the plants, animals and natural communities that represent the diversity of life on earth by protecting the lands and waters they need to survive.

This handbook contains guidelines that teachers can use in the subjects that have been identified. I encourage teachers to use this handbook and the resource awareness materials for students to learn and become better decision makers in their communities now and in future.

Teachers are encouraged to modify and amend these ideas to suit their local circumstances.

Peter M. Baki
Secretary for Education
INTRODUCTION
The aim of this material is to make students aware of the consequences of destructive fishing practices and equip them with the knowledge, skills, attitudes and values to protect and manage their marine resources.

Rationale
The marine environment is threatened from human activities. Increased population growth and ignorance from the community are some factors that lead to destructive fishing practices.

These practices include dynamite fishing, use of poison ropes, cyanides, overfishing of spawning aggregation sites, night diving and nets and traps etc. The live reef food fish trade (LRFFT) is an industry which has been promoting the use of destructive fishing practices and is threatening marine life in the Pacific and in PNG.

The emphasis of the curriculum is on the importance of managing marine resources in a sustainable manner to meet basic human needs. Students will develop and acquire knowledge, skills, attitude and values to look after the marine life.

This handbook is important for creating awareness and educating teachers and students to make informed decisions about good practices such as conserving fishing grounds and establishing marine protected areas.

Purpose of the Handbook
This handbook will help teachers to:

- link the national curriculum to the awareness resource materials
- select examples of teaching and learning activities
- plan programs and lessons on marine environment
- use other resource books.
THE AWARENESS RESOURCE BOOKS

These are stimulating books developed purposely to create awareness on the importance of protecting marine resources from destructive fishing practices.

Below is a list of the awareness resource books
2. Teachers and student activity manual for Fishy Business
3. Drama Book
4. Match the sketch Teachers Manual

1. Storybook “A Fishy Business”

A storybook entitled “A Fishy Business” is targeted for schools in PNG and the Solomon Islands. The story is based on the use of destructive fishing practices in the live reef food fish industry in Melanesia, but with a romantic twist. The aim is for the schools to adopt the storybook as a regular resource material for use in the school curriculums.

2. Teachers and Students Activity Manual for “A Fishy Business”

A Teacher and Students Guide or Manual will accompany the storybook “A Fishy Business”. The Manual covers English Activities and Science Activities. The English Activities include comprehension exercises, dictionary practice, working with verbs, etc. Science Activities include research, biodiversity and presentation activities.

- Drama Book

The Drama Book is based on the story book “A Fishy Business” It comes in English and PNG pidgin versions and concentrates on the key messages in the storybook that includes the lessons to be learnt concerning destructive fishing practices and the unsustainable use of marine resources. Teachers and students and communities using this drama book can be able to perform the drama at schools and in their villages as part of their regular lessons or on important days such as World Environment Day and other special days.

- Match the Sketch Teachers Manual

This is an Activity Book and is a fun way to learn about the wonderful marine environment we have. It covers five different lessons that will allow students to understand the basics of coral biology and the importance of biodiversity. The first two lessons tell the story of what coral biology is and what biodiversity is. The third lesson tells the story of the life cycle of an important group of fish that are targeted by the Live Reef Food Fish Trade. The fourth lesson is about the small amount of money the local fisherman earns compared to the huge amount paid for the fish in Hong Kong. The last and fifth lesson is about the destructive fishing techniques used and how they can be prevented. Color pictures that are needed to deliver each of the lessons are to be cut out by the students and the lessons are delivered by adding, removing and matching pictures from a screen/board in an interactive manner.
These three books can be used in the curriculum as shown in the table below. The Upper primary subject, strands and outcomes listed have strong links to these materials, however teachers are encouraged to use these material in other strands and outcomes in other grades and levels where appropriate.

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## Syllabus learning outcomes

Below are the statement of leaning outcomes for the relevant subjects and strands.

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<thead>
<tr>
<th>Awareness Books</th>
<th>Subject</th>
<th>Outcome Statements</th>
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| Fishy Business Drama. | Arts | 6.2.1: Demonstrate traditional dance or drama skills  
7.1.1: Demonstrate contemporary dance or drama skill  
8.1.1: Demonstrate organizational skills in dance or drama |
| Language | | 5.1.3: Listen to and identify how spoken language is adapted to its context  
7.1.3: Create own examples of spoken  
8.1.3: Critically analyze how spoken language is used in new and more complicated contexts. |
| A Fishy Business Novel and Teachers Guide. | Language | 6.2.1: Read and respond to a range of texts about real and imaginary worlds.  
7.2.1: Read and respond to a wide range of more complex literary and factual texts.  
8.2.1: Read, reflect and respond critically to a broad range of complex literary and factual texts. |
| Making a Living | | 5.1.1: Investigate the importance of land and water resources and apply appropriate ways of managing these to meet basic human needs.  
7.1.1: Investigate and compare consequences of mismanagement of land and water resources and plan, design and undertake a small project using appropriate management practices.  
8.1.1: Evaluate current practices of land and water resource management to design sustainable resource management projects to generate income.  
7.1.3: Explain appropriate crop management and animals husbandry practices and demonstrate these through undertaking a practical project. |
| Science | | 6.2.1: Identify the basic structure of living things that allow them to function in their environment.  
6.2.2: Using a diagram, describe how energy moves through the living and non-living thing.  
7.2.2: Interpret and discuss relationships that exist in a community, using a food web to show the human activity in that community.  
8.2.2: Draw conclusions regarding the effects of excessive use of non-biodegradable materials on food webs. |
| Social Science | | 6.1.3: Examine and describe people’s impacts on the local physical environment and take appropriate action.  
7.1.3: Examine the impact of resource use on physical environments and human settlement patterns in |
| Match the Sketch and Teaching Visual Aids. | Science       | 6.2.1: Identify the basic structure of living things that allow them to function in their environment.  
7.2.1: Identify and compare the basic structure of living things and how  
6.2.2: Using a diagram, describe how energy moves through the living and non-living community.  
7.2.2: Interpret and discuss relationships that exist in a community, using a food web to show the human activity in that community.  
8.2.2: Draw conclusions regarding the effects of excessive use of non biodegradable materials on food webs. |
| Making A Living       | 5.1.1: Investigate the importance of land and water resources and apply appropriate ways of managing these to meet basic human needs.  
7.1.1: Investigate and compare consequences of mismanagement of land and water resources and plan, design and undertake a small project using appropriate management practices.  
8.1.1: Evaluate current practices of land and water resource management to design sustainable resource management projects to generate income.  
7.1.3: Explain appropriate crop management and animals husbandry practices and demonstrate these through undertaking a practical project. |
| Maths       | 6.1.4: Link fractions and decimals to percentages and solve simple percentage problems.  
7.1.4: Use percentages in a variety of real life situations  
8.1.4: Solve problems in any situation that involves percentages.  
6.4.5: Discuss the value of accuracy  
7.4.5: Choose appropriate levels of accuracy  
8.4.5: Represent levels of accuracy |
TEACHING AND LEARNING ACTIVITIES

Teaching and learning is an integral part of children’s growth and development. In this package, teaching and learning activities have been specifically designed to address the need to protect and also educate the young population to be well informed about their immediate marine environment and to use these wisely now and in future. The knowledge, skills and attitudes/values applied in the activities that students learn should assist them to be well informed in order to use their resources in a sustainable way.

The TNC materials already have a lot of activities given in subjects such as Language, Science and Arts. This handbook therefore, gives additional activities and assessable tasks that can be utilized including other subjects such as Maths, Social Science and Making A living (MAL) as shown in the table in the overview section. Teachers are advised that these are suggested activities only and should be adapted to suit their planning and teaching.

Some activities are directly linked to the subjects and the corresponding outcomes and are therefore, indicated in brackets. For example, Science: 6.2.1)

Specific learning activities

1. Illustrated Story Book

   Your teacher will assist you in producing a picture book using drama from the Fishy Business Drama. Your illustration should be of a cartoon type to make your work easier. Check with your teacher every time for advise and assistance.

2. Making an Aquarium

   This can be a project for your students whereby they collect old louver blades (transparent) and glue these together tightly so that seawater does not leak out. This can be about 30 – 40cm high with top opened. Sand, small corals and rocks, some sea plants (small), small fish and snails are placed in and monitored. It should be placed in a place where sunlight can reach. Keep replacing seawater every 4-5 days. (Science, MAL, Maths)

3. Building a Sea Wall

   Students can do this as a class, school or community project. They observe the school and the surrounding community and locate areas that need immediate attention. These will normally be where large waves are common. They then design their own plans on how best they will stop or slow down the wearing away of rocks and soil. They don’t necessarily need financial assistance to purchase items required to build the wall (MAL, Maths, Science)

4. Write Rules

   This activity is best done after some research. This would mean students will have to find out from their peers or the local community about all the things that are happening in relation to the destruction and bad practices in the use of the sea or marine life. Having all
the information available, they then work together in groups to discuss and write a set of rules that can be put into practice to control or stop these bad practices. The students must constantly monitor these and those found guilty should be dealt with accordingly. The local community should also take responsibility in working closely with the students in this exercise. (Social Science, Lang)

5. Select an area in the sea and monitor the movement of its lifeforms.
Many schools are located near or along the sea front or beach. The school can arrange with the village elders or landowners for the use of some part of the sea (can be at the school area or in the community). The school through the students can write letters to institutions such as Divine Word University, secondary schools which offer this course or other organizations such as Diving and Tourism, NGOs and local divers to come physically and give diving lessons or send information on this subject for the teachers to use for their students. The selected area is then explored and all information collected is used to plan and take action such as monitoring the life of an endangered species, studying the life cycle of fish, monitoring the growth of a plant and taking care of the fish for consumption and spawning. (Science, MAL, Arts, Social Science)

6. Role Play
Some of the things learnt during normal lessons can be reenacted through role plays. Students past and present experiences can also be utilized through this approach. During the world environment day these plays can then be put on for the public to see. (Arts, Lang)

7. Build a Marine Park or small museum
Evidence or fossils of marine life are collected and placed here for tourists and others to observe. Short background information can also be prepared for each of these and used as a source for students to learn. This can be a place within the school area. (Science, MAL, Arts)

8. Make Murals
A lot of school buildings are bare (brick and fibro walls). The Arts lesson can be used for students to use their imaginative ability on marine environment or pictures from magazines which contain marine life found in the sea around them to paint these walls. It could be used as an assessable task and can be done with the help of local artists. A criterion can be developed together with the teacher to do the assessment. This can be extended to the local community and funds can be raised through this means. (Arts, MAL)

9. Puppets and Puppet Show
A Puppet show is a fun way of learning through entertainment. Puppets shows can be used by students to promote ways of protecting marine environment. Teachers and students can make puppets and perform in order to educate and inform themselves and the public. Conservation NGOs can provide assistance on ways to make and perform puppet shows.

10. Excursions to Reefs/ Beach front/Sea/ Factories
Excursions are a practical way of learning. By participating in excursions to reefs and beaches, teachers and students will observe and learn for themselves about the different life forms in these areas and learn about the impact of human activities upon the lives of these species. Teachers can prepare questionnaires or survey forms for the students to use during these activities.
11. **Traditional Versus Modern Fishing practices**

People in the past and even today have different methods of fishing. Some of these methods are good while others are bad. Teachers and students can identify these and investigate the advantages and disadvantages of these activities. They can also invite local experts and modern scientists to assist them provide information on these so they can make wise decisions in the use of these methods.

12. **Cleanathon**

In this activity students will organize a cleanathon on a beach front to remove plastics, bottles and other pollutants. Students investigate an issue and plan strategies to clean up the beach front.

13. **Debates on Protection of Marine Environments/Coral Reefs/Destructive Fishing Practices**

Debates are a very powerful way of influencing others about pressing issues that are directly affecting their lives. This activity also helps students to become good public speakers and leaders. Issues are presented and students are organized into two groups, one for and against a certain topic, for example,” the live reef food fish trade should be banned in PNG.”

14. **Monitoring Endangered and Endemic Species**

Papua New Guinea has several endangered and endemic species which need immediate attention such as seven species of turtles, dugongs, and sea birds. Teachers and students should be aware of these species, know their feeding, breeding and resting grounds in order to monitor their safety. They should also know who to report these matters to.
RESOURCES
This section contains a list of other resource books that could be used to obtain more information

Books from NDOE
NDOE 2002, National Curriculum Statement, Waigani
NDOE 2002, Upper Primary Making a Living syllabus, Waigani
NDOE 2002, Upper Primary Science syllabus, Waigani
NDOE 2002, Upper Primary Social Science syllabus, Waigani
NDOE 2002, Upper Maths syllabus, Waigani
NDOE 2002, Lower Primary Environmental Studies syllabus, Waigani.

Materials from The Nature Conservancy Organization
1. A six-minute video outlining the main issues associated with the LRFFT.
2. Plastic fish identification cards for the top 16 LRFFT species.
3. A presentation folder containing:
   • An 8-page overview of the LRFT in the Pacific
   • Four 2-page fact sheets on:
     ◦ Managing Our Fishery: Why is Management Critical?
     ◦ Managing Our Fishery: Why Assess and Monitor?
     ◦ Managing Our Fishery: What Do We Need to Know to Manage?
     ◦ Your Community and the Live Reef Food Fish Trade.
   • A poster with the 16 most valuable fish species on one side, and a diagram of the “chain of custody” from the fishers to restaurants and a map on the reverse side.
   • The SPC Information Bulletin on Live Reef Fish issues.

Books from other Non Government Organizations
the surface: Coral reefs in Papua New Guinea,