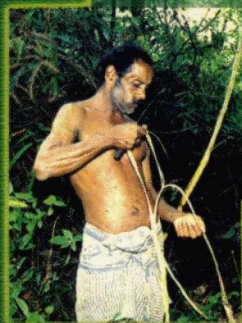
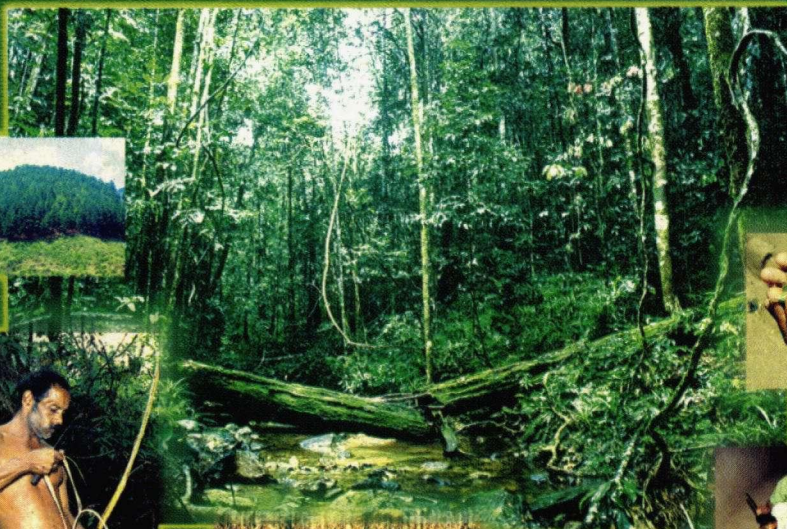


Forests of Sri Lanka and Agriculture

(Related to Fact Sheet No. 7)



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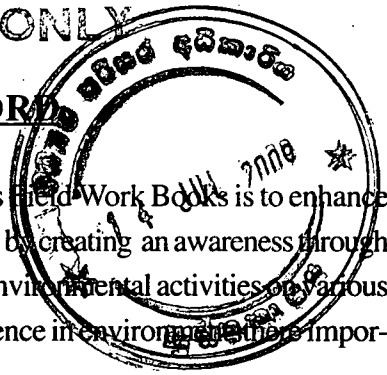
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Central Environmental Authority

Funded by : Forest Resources Management Project

FOREWORD

The objective of introducing this Field Work Books is to enhance knowledge on environment among students by creating an awareness through practical experiences gained by means of environmental activities on various environmental components and their existence in environment. Their importance and the present conditions.

There are seven (07) such Field Work Books compiled on that basis through which an understanding could be had about environmental aspects connected to forests through students activities, accompanied with a Fact Sheet relating to each of the Field Books. By referring to the basic data and information given in the Fact Sheet, students will be able to have a basic understanding of the relationship between forests and the components which is described (e.g. forests and water) through the activities included therein.

It is expected to use the Fact Sheets and the Field Work Books to improve knowledge on the subject of forestry. The role on the part of students will be to use this Field Work Book as a basis on which they can be conscious of various environmental aspects in the light of the new knowledge; to think deep on the subject, on the basis of the Fact Sheet and to focus on the activities referred to.

This Field Work Book has been prepared for the environmental pioneer students in Year 06 to 13 and it has been designed to enable the completion of every activity within a period of one year.

Instructions which are necessary to carry out the activities are given along with the respective activities. While the activities are designed in such a manner that they can be carried out (to the maximum) in relation to one's environment, it is our expectation to perfect this Field Work Book in the

future by taking note of the short comings and difficulties that may arise in the implementation and to rectify them. Therefore, we are pleased to request you that such problems faced in the practical use may be intimated to the address given below.

It is further informed that you may obtain the assistance of the Divisional Environmental Officers and the Range Forest Officers in conducting these activities.

These Field Work Books were tested under a pilot project during 2002 - 2003 and every Divisional Environmental Officer was issued with a set of books on an experimental basis. However, it noted that their response in this regard was not very encouraging.

We extend our thanks to the members of the steering committee, Mr. Tilak Hewawasam the (then) chairman of the Central Environmental Authority, Prof. Sarath Kotagama, University of Colombo, Mr. W. R. M. S. Wickremasinghe, Additional Secretary, Ministry of Environment and Natural Resources and Mr. W. Rajapakse, Commissioner, Education Publication Ministry of Education for their services rendered as members of the Steering Committee and staff of the Central Environmental Authority, resources persons who contributed for the preparation of these Field Work books.

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Introduction

This Field Work Book titled “Forests and Agriculture in Sri Lanka” will guide environmental Pioneer students towards the activities related to them.

Since the Field Work Book has to be used with some knowledge of the scientific background, it is necessary to obtain the assistance of a science teacher of the school.

It is expected to use of the Field Work Book to create an awareness among the students by directing them towards five (5) selected practical environmental activities; to improve their knowledge of the environment and to focus their thinking towards such activities. It is further expected to enhance the ability of students to come to conclusions by observing and studying environmental phenomena and also to improve their exploratory skills on environmental matters.

Therefore, we request all those concerned that their maximum contribution be extended in order to realize the above benefits by performing the activities contained in this work book in achieving the expected objectives.

Further we expect to improve this activity which has been launched as a pilot project to be implemented among school children and therefore the views and suggestions of all group members and teachers who provide the necessary guidance in this regard are highly appreciated.

Forests and Agriculture in Sri Lanka

Preliminary instructions

This Field Guide Book has been prepared with the objective of creating 5 behavioural objectives in the Environmental Pioneer Groups.

Expected behavioural objective - 1

- 1.1 Will name 10 uses enjoyed by man from forests.
- 1.2 Will highlight five ill effects of forest degradation.

Expected behavioural objective - 2

- 2.1. Will identify 4 ways in which human activities affect forests in Sri Lanka.

Expected behavioural objective - 3

- 3.1 Will describe as name a forest zone in Sri Lanka.
- 3.2 Will prepare an action plan for forest conservation in Sri Lanka.
- 3.3 Will actively contribute to the national forest conservation programme.

Expected behavioural objective - 4

- 4.1 Will name and introduce herbal plants available in forests.
- 4.2 Will identify plant types which can be used as leaf manure in Sri Lanka.

Expected behavioural objective - 5

- 5.1 Will produce compost fertilizer for school farming practicers.
- 5.2 Prepare a natural pesticide that can be obtained from forests.

For fulfilment of the above mentioned five behavioural objectives, an activity paper should be prepared according to groups.

In the division of groups it will be more suitable to follow the action paper according to the grades as instructed in the action paper.

Students who fulfil at least 80% of the behavioral objectives need to be considered as who reach the necessary skill level.

Forests and Agriculture in Sri Lanka **Field Activities.**

Expected behavioural objective (1) :-

1. Will name 10 uses which man gets from forests.
2. Will highlight 5 ill effects of forest degradation.

Basic guidance for activities :-

Several assignment papers should be prepared according to groups for this;

Instructions to teachers for implementation.

- ❖ Discuss the expected objectives with the students and provide them with an understanding of the assignment papers.

- ❖ Inform the students of the venue and dates for the implementation of the assignment, the security arrangements to be made for them and the maximum time to be spent.
- ❖ One week before the commencement of the assignments, direct the students to collect information following discussions with the resource persons of the area (e.g. the Forest Officer, officers of the Environmental Clubs and adults with an understanding of the forests.)
- ❖ Provide an opportunity to the students to use information material from institutes such as the Central Environmental Authority, Forest Department etc..
- ❖ Divide the students into groups and appoint a leader for each group.
- ❖ Discuss with the group the objective of the function entrusted.

Activity for Group No. 1

Your group is entrusted with the task of identifying 10 (ten) benefits of forests to human being.

The following functions should be entrusted to each member of the group by the group leader ;

- (A) Classify the information obtained from the resource person as follows. (food, clothes, medicine, timber, flowers)

- (B) Tabulate information using the related Fact Sheet too.
- (C) Note down the above information orderly with examples, on a demy paper.
- (D) Suitably prepare it to be pasted on the wall paper.

(More suitable for Grade 6)

Activity for Group No. 2

Your group is entrusted with the task of introducing 5 severe ill effects of deforestation.

- (1) Obtain permission and organize a field tour to a forest in or closer to your area. (Get the assistance of a teacher.)
- (2) Collect information on the activities in a newly cleared forest area.
 - A. i. Observe the places which are subjected to soil erosion.
 - ii. Create a poster which is suitable for that location.
 - iii. Compose a poem on the damage caused to the place.
 - iv. Make a model of the site.
- B. Discuss with the villagers of the area and prepare an article for a news paper on drying up of ground water.
- C. Crate a caricature on the energy crisis based on the Fact Sheet.

- D. Prepare a sign board for people to make them understand the importance of wild life conservation (materials like rigi - foam and discarded items can be used for this purpose.)
- E. Build up a collection of pictures featuring the aesthetic importance of a forest. Display it in the class room.

Evaluation :

(more suitable for Grades 8 and 9)

- ❖ Enthusiastic participation, leadership.
- ❖ Collective action, exchange of views.
- ❖ Work with patience, and
- ❖ Quality of the outcome.

are the suitable criteria to be applied.

Expected behavioural objective - (2)

Describes 4 ways in which human activities affect forests in Sri Lanka.

Basic guidance for activities.

Separate assignment papers have to be prepared for the groups for this purpose.

Instuctions to teachers for implementation

- ❖ Discuss with the students on the objectives.

- ❖ Divide the students into groups of 3 - 5 students.
- ❖ Assign one activity paper to each group.
- ❖ Give instructions as to how action should be taken to minimize environmental damage in collecting material for the activity and also in order to ensure one's safety in the process.
- ❖ Appoint one leader to each group.

Activity for Group No. 1

- ❖ Prepare a list of consumer items used for the day-to-day requirements of man.
- ❖ Identify the plant and animal material out of that list and enter them separately in the table below :

Obtained from forests	Obtained through other means

- ❖ Prepare a record of plant and animal material which have become or about to be extinct due to continuous exploitation from forests.
- ❖ Get that report noted down on a bristol board as indicated below :

Plant and animal material obtained from forests	Plant and animal material threatened with extinction.

(More suitable for Grade 6)

Activity for Group No. 2

- ❖ Organize a field tour to an area in the dry zone where chena cultivation is done.
- ❖ Have data collected on the following during the field visit :
 - ◆ Land use for chena cultivation
 - ◆ Activities done in the process
 - ◆ Damages caused to soil by chena cultivation.
 - ◆ Impact caused to wildlife by chena cultivation
 - ◆ Harm caused to herbal plants by chena cultivation.
 - ◆ How chena cultivation affects ground water springs.

Create a few posters to illustrate the damages caused by deforestation, using the above mentioned data.

(More suitable for Grades 9 and 10.)

Action paper for Group No. 3

- ❖ Discuss the specimen and information with the fact sheet information, with Groups No. 1 and 2.
- ❖ Divide into two debating teams and conduct a debate on the topic “Is man a destroyer of forests ?”
- ❖ Write an essay to a children’s paper on the topic “Forests and Farming” on the basis of data collected.

Criteria to be used for evaluations

- ❖ Attitude shown towards minimizing environmental damages in human activities.
- ❖ Proposals on alternate actions that can be used by chena cultivators.
- ❖ Showing the steps required to be taken in obtaining material from forests, in order to protect bio - diversity.

(More suitable for Grades 10 and 11)

Expected behavioural Objectives (3)

1. To name a forest zone in Sri Lanka.
2. To present an action plan for forest conservation.
3. To extend active participation in the national forest conservation programme.

Initial guidance for activities :

The teacher should collect information on the active programmes of the Forest Conservation Department of Sri Lanka and the Central Environmental Authority and draw the attention of students to those information.

Attention of students should be invited to paintings and poetic compositions of poets of old days which highlight the results of forest degradation.

Instructions to teachers for implementation

- ❖ Discuss the expected objectives with the students.
- ❖ Divide the students into groups and appoint a leader.
- ❖ Give instructions and guidance for the collection of various materials required.
- ❖ Distribute activity papers according to the behavioural objectives
- ❖ Thereafter, conduct a discussion among the groups and have separate reports prepared.

Activity for Group No. 1

- ❖ Study the map of Sri Lanka showing the forests, with the help of the Fact Sheet.
- ❖ Prepare materials required for making a model which shows those forest zones.
 - (A) A piece of rigifoam, card board or wooden board of 75 cm x 60 cm.
 - (B) A white or coloured paper of the same size.
 - (C) A pen knife, pair of scissors, a blade, a small saw, a few nails, pins and a ruler.
 - (D) Saw dust / clay.
 - (E) Natural colour / water colour or other materials such as plant extracts that can be used to make natural colours.
 - (F) Platignum pen, gum, an eraser.

Action paper :- Activities

1. Find out the forest zones of Sri Lanka using the forest map.
2. Draw a map of Sri Lanka on a paper and mark the forest zones based on the information obtained.
3. Paste the map on the board made out of rigifoam / card board / wood etc.
4. Construct the model to the scale drawn up, using saw dust / clay etc.
5. Fix small name boards to identify the respective zones.
6. Present the creation before the other groups and explain.

(More suitable for Grades 8 and 9)

Activities for Group No. 2

- ❖ Appoint a group leader.
- ❖ Appoint an announcer too.
- ❖ Give time for each member to collect information under the following topics. (association with resource persons, use of Fact Sheets from institutes such as the Forest Department, Dept of Agriculture, Central Environmental Authority etc.)

The fact sheet provided too should be used

Heads :

- (1) Importance of forests
- (2) Ways of forest degradation
- (3) Ill effects of forest destruction
- (4) Strategies for preventing forest degradation
- (5) Methods usable for forest conservation (With steps for bio-diversity, soil and water conservation.)

- ❖ Conduct a dialogue or discussion covering all aspects mentioned above (get the assistance of the teacher also.)
- ❖ Prepare a Forest Conservation Plan exclusively for your area, on the basis of that dialogue.
- ❖ Prepare that plan through the school magazine.

(More suitable for Grades 10, 11, 12 and 13)

Activity for Group No. 3

1. It is more suitable to read the following publications issued by the Forest Conservation Department before commencing this activity and to collect relevant information.
 - ❖ 'Sri Lanka' Forestry Sector Master Plan.
 - ❖ An overview of the Sri Lanka Forestry Sector Master Plan.
 - ❖ A summary of the National Forest Policy and the Forestry Sector Master Plan.

Appoint a leader to the group and get information collected by assigning the following Heads to each member.

Use the Fact Sheet provided. (What is necessary is a very simple use.)

- i. Name the main objectives of the National Forest Conservation Programme.
- ii. State forest resources management.
- iii. Private forest and plant resources management.
- iv. Sale of non - timber material and non - timber commercial products.
- v. Community Forest Cultivation Programme.

vi. Agricultural Forest Cultivation Programme.

(More suitable for Grades 12 and 13.)

Organize a shramadana programme where the participation of all groups and the community can be ensured, for the creation of a forest garden in the school premises.

- ❖ The appropriate date and venue.
- ❖ Equipment required
- ❖ Entertainment
- ❖ The process to be followed.
- ❖ Indicate maintenance plan etc. in a Flow Chart and represent it written on paper.
- ❖ Build up relationship with the community with permission from the principal. Commence the work of the day as scheduled.

Arrange to have at least one tree planted with the co - operation of the community and give prior instructions to each of them to bring one plant each.

Allow the group to listen to a recorded radio programme (musical or documentary) on the importance of forest conservation, while being engaged in the activity.

Make necessary arrangements to fix a name board in Sinhala, Tamil and English by the side of the plants giving details of their common and botanical names, uses, the names of the persons who planted them etc.

Maintain the forest garden well.

Place a name board for the forest garden.

(More suitable for Grades 6, 7, 8, 9, 10, 11, 12 and 13)

Expected behavioural objective (4)

- ❖ To name and show the herbal plants obtained from forests.
- ❖ To identify plants which can be used as leaf manure in Sri Lanka.

Implementation

- ❖ Hold a preliminary discussion with the students about the objectives
- ❖ Name two groups among the students.
- ❖ Direct one group to collect information on herbal plants and the other group to find out plants which produce leaf manure.

Organize a jungle tour with a photographer and a resource person by taking the necessary precautionary actions with the permission of the principal. Give strict instructions that only the absolutely necessary samples should be collected causing the minimum harm to the environment.

Activity for Group No. 1

- ❖ Direct the students to meet a group of old farmers prior to the field tour.

- ❖ Have a list of plants collected as leaf manure prepared with the assistance of the farmers.
- ❖ After those plants are identified from the forest during the field tour under the guidance of the resource person, have them photographed.
- ❖ Prepare an album by collecting specimens of plants which are available.
- ❖ Prepare an article for the school wall paper on the basis of the above mentioned particulars and the photographs.

(More suitable for Grades 9, 10, 11, 12 and 13)

Evaluation :

- ❖ Enthusiastic participation in the process.
- ❖ Working with others in a co - operative manner.
- ❖ To be sensitive to environment conservation.
- ❖ Creativity.

are the criteria which are suitable to be used as a basis.

Expected behavioural objective (5)

1. To produce compost for a school farm.
2. To prepare a natural pesticide out of forest material.

Pre arrangement and instructions :

1. Give prior instructions to students to prepare a suitable dress to be worn in their practical activities.

2. Obtain animal waste from around the school and get them ready before hand.
3. Arrange the books on Agricultural Science in the library in order to identify the methods of compost production.
4. Direct the students to form two groups and give them action papers.

Activity for Group No. 1

- ❖ Select a suitable place for compost making with the assistance of the teacher
- ❖ Collect the matter used as raw material.
- ❖ Prepare the compost making process in the form of a Flow Chart. (Obtain the assistance of the teacher.)
- ❖ Produce compost using the matter collected
- ❖ Packet the compost and describe the processes involved. Present to the other groups too.

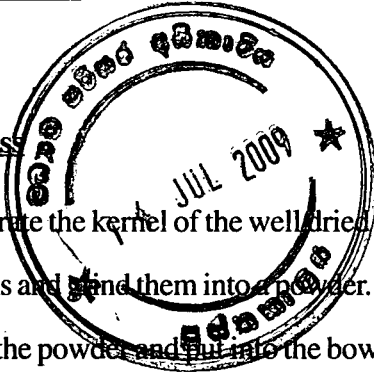
(Can be applied to Grades 6, 7, 8, 9, 10, 11, 12 and 13.)

Activity for Group No. 2

- ❖ Have the following items ready, -
 - (1) Margosa seed 50 g.
 - (2) Water 1 litre
 - (3) A bowl (to make the mixture)
 - (4) A scale
 - (5) Several plants damaged by pests.
 - (6) An empty yoghurt cup.

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The Process



- ❖ Separate the kernel of the well dried margosa seeds and weigh 50 grams and grind them into a powder.
- ❖ Mix the powder and put into the bowl.
- ❖ Add 1 litre of water and mix well.
- ❖ Cover the mixture well and keep still overnight.
- ❖ On the following day, mix it well with water and then strain.
- ❖ Apply the strained mixture in the evening.
- ❖ Apply on both sides of the leaves with pests damage.
- ❖ Observe the reduction of pests damage between 1 - 2 weeks and report.

Prepare a pesticide that can be produced naturally out of materials obtained from forests, under a suitable name to create awareness among the public.

Create a poster suitable to the theme and prepare Fact Sheet indicating the above process.

(N. B. The above process can be used for making similar mixtures from 'anoda' seeds kochchi chilli etc.)

(Can be applied to Grades 9, 10, 11, 12 and 13)

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